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## WP2 Design of the Blueprint for Gender Equality in the Green Energy Transition

### D2.1 Gender-Responsive Blueprint



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## **GaTE – Gender Equality in the Green Energy Transition**

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## Summary

Deliverable D2.1 describes the **Gender-Responsive Blueprint for the Green Energy Transition**, a strategic framework developed under WP2 of the GaTE project. The Blueprint provides a comprehensive yet adaptable model to promote **gender equality and women's participation in the green energy sector**, particularly within **Vocational Education and Training (VET)** at EQF levels 3–4. It integrates insights from extensive research — including a desktop survey, a validation workshop, an online survey, and structured interviews — across GaTE partner countries.

The Blueprint is structured around **six interlinked axes**:

- (A) *Access & Participation,*
- (B) *Curriculum & Pedagogy Reform,*
- (C) *Mentoring & Career Support,*
- (D) *Policy & Governance,*
- (E) *Community & Industry Engagement,* and
- (F) *Sustainability & Evaluation.*

Each axis defines specific objectives, intervention areas, implementation pathways, and success indicators, supported by detailed implementation guidelines.

While the Blueprint's detail ensures **completeness and internal consistency**, it is designed for **flexible use**. Stakeholders may adopt selected components according to institutional capacity, policy maturity, and local context. The indicative timelines included serve to illustrate the expected effort and sequencing rather than prescribe rigid scheduling.

The Gender-Responsive Blueprint functions as both a **strategic roadmap and a practical guide**—linking evidence-based gender mainstreaming principles with actionable measures that support inclusive education, workforce participation, and governance reforms across Europe's green energy transition.

# 1. Introduction and Methodology

## 1.1 Purpose

This Gender-Responsive Blueprint for the Green Energy Transition (GET), a strategic framework developed within Work Package 2 of the GaTE project. The Blueprint serves as a comprehensive roadmap designed to promote gender equality and enhance women's participation and leadership in the green energy sector across Europe. Its primary purpose is to provide actionable guidance for addressing the persistent underrepresentation of women in green energy education and careers, particularly within Vocational Education and Training (VET) systems at European Qualifications Framework levels 3 and 4.

The Blueprint functions as the foundational document that informs and guides all subsequent GaTE project activities. It establishes a structured approach to tackling gender disparities through targeted policies, initiatives, and coordinated actions across multiple stakeholder groups, including VET providers, policymakers, industry partners, educational institutions, and civil society organizations. Rather than prescribing rigid solutions, the Blueprint operates as a strategic map that sets directions, priorities, and evidence-based recommendations adaptable to different national and regional contexts while maintaining coherence with broader European sustainability and gender equality objectives.

Central to the Blueprint's purpose is its role in bridging the gap between policy aspirations and practical implementation. It translates research findings from desktop surveys, stakeholder consultations, validation workshops, and online surveys into concrete action plans that address real-world barriers women face when entering or advancing in green energy careers. The framework encompasses six interconnected axes covering access and participation, curriculum and pedagogy reform, mentoring and career support, policy and governance, community and industry engagement, and sustainability and evaluation. Through this comprehensive approach, the Blueprint provides the strategic foundation for developing educational materials, awareness campaigns, mentorship programs, and policy influence initiatives that will unfold throughout the remaining work packages of the GaTE project, ensuring all interventions contribute coherently toward achieving systemic change in gender balance within the green energy transition.

## 1.2 Scope

The scope of this Gender-Responsive Blueprint encompasses the green energy sector across four European countries represented in the GaTE consortium – Greece, Spain, Norway and Belgium – with particular emphasis on Vocational Education and Training (VET) provision at European Qualifications Framework levels 3 and 4. The Blueprint addresses the full spectrum of gender equality challenges within the green energy transition, from initial access and recruitment through curriculum design, mentorship systems, career advancement pathways, policy frameworks, and community engagement mechanisms. It targets multiple stakeholder groups including VET providers, educational institutions, industry partners, policymakers at national and regional levels, women's organizations, and civil society actors, providing each with contextually relevant guidance for implementing gender-responsive interventions. While the framework draws on research and validation activities conducted across the partner countries during the project's first eight months, its strategic recommendations are designed to be scalable and adaptable to other European contexts beyond the immediate consortium geography. The Blueprint's temporal scope extends throughout the project duration and beyond, incorporating sustainability mechanisms to ensure its continued relevance and application after the conclusion of

formal project activities, thereby serving as a lasting resource for advancing gender equality in the green energy transition across diverse European regional and national settings.

### 1.3 Methodology

The development of the Gender-Responsive Blueprint for GET followed a multi-phase methodology combining quantitative and qualitative research approaches. This participatory, evidence-based methodology was designed to progressively build knowledge, validate assumptions, and refine strategic recommendations through systematic stakeholder engagement and iterative refinement processes.

Table 1 summarizes the four primary methodological tools employed in Blueprint development, highlighting their specific purposes, data types generated, and contributions to the final framework:

Methodological Tool	Purpose	Scope & Participants	Key Contribution to Blueprint
<b>Desktop Survey</b>	Establish evidence base on national contexts	<ul style="list-style-type: none"> <li>3 countries (Greece, Spain, Norway);</li> <li>analysis of academic literature, policy documents, regulatory frameworks</li> </ul>	<ul style="list-style-type: none"> <li>Empirical foundation for all six axes;</li> <li>identification of country-specific contexts;</li> <li>baseline data on gender disparities;</li> <li>policy gap analysis</li> </ul>
<b>Validation Workshop</b>	Validate preliminary Blueprint framework;	<ul style="list-style-type: none"> <li>8 GaTE consortium partners from 3 countries;</li> <li>conducted in Athens, July 2025;</li> <li>intensive co-design session</li> </ul>	<ul style="list-style-type: none"> <li>Refinement of all six axes;</li> <li>identification of framework gaps; severity assessment of barriers;</li> <li>stakeholder consensus on priority challenges</li> </ul>
<b>Online Survey</b>	Quantify stakeholder priorities;	<ul style="list-style-type: none"> <li>Broad stakeholder base across partner countries;</li> <li>48 VET providers, policymakers, industry, civil society;</li> <li>EU Survey platform</li> </ul>	<ul style="list-style-type: none"> <li>Prioritization of interventions; feasibility assessments;</li> <li>implementation timeline guidance;</li> <li>identification of most severe barriers to change</li> </ul>
<b>Structured Interviews</b>	Explore contextual gather detailed implementation insights;	<ul style="list-style-type: none"> <li>37 Key stakeholders across four partner countries (Greece, Spain, Belgium, Norway);</li> <li>tailored protocols for educational institutions, industry, policymakers, students, women's organizations</li> </ul>	<ul style="list-style-type: none"> <li>Contextual understanding for all axes;</li> <li>practical implementation insights;</li> <li>organizational constraint identification</li> </ul>

Table 1. Summary of the methodological tools used

More specifically:

- Phase 1: Desk Research and Context Analysis** constituted the foundational phase, conducted between months 1 and 6 of the project. This phase involved desktop surveys across three partner countries—Greece, Spain, and Norway—to establish baseline understanding of national green energy landscapes, gender participation patterns, policy and regulatory environments, and existing barriers and enablers affecting women's access to and advancement within the green



energy sector. The purpose of this phase was threefold: to gather empirical evidence on the current state of gender equality in green energy across diverse European contexts; to identify best practices, policy innovations, and successful interventions that could inform Blueprint development; and to establish a solid evidence base upon which the preliminary Blueprint framework could be constructed. Researchers conducted systematic literature reviews, analyzed national statistical data, examined policy documents and regulatory frameworks, and synthesized findings to identify cross-cutting themes and country-specific particularities.

2. **Phase 2: Preliminary Blueprint Development** involved translating the desk research findings into a structured strategic framework organized around six interconnected axes addressing different dimensions of gender equality in the green energy transition. This preliminary Blueprint, developed collaboratively by consortium partners drawing on both the empirical research and their collective expertise in VET provision, gender mainstreaming, and green energy systems, served as the hypothesis to be tested through subsequent validation activities. The preliminary framework deliberately maintained flexibility to accommodate refinements based on stakeholder feedback while providing sufficient structure to guide meaningful consultation processes.
3. **Phase 3: Validation Workshop** represented the first major stakeholder engagement phase, conducted in Athens, Greece in July 2025. This intensive co-design workshop brought together representatives from all GaTE consortium partners spanning four countries to collectively validate and refine the preliminary Blueprint framework through structured dialogue. The workshop methodology employed systematic assessment protocols for each of the six axes, requiring participants to evaluate framework completeness, assess the relevance and severity of identified challenges, identify missing elements or gaps, and propose priority actions for inclusion in the final Blueprint. The purpose of this phase was to test the preliminary framework against the lived experience and practical expertise of stakeholders directly engaged in VET provision, policy development, and gender equality initiatives, ensuring the Blueprint reflected real-world conditions rather than purely theoretical constructs. Workshop participants engaged in facilitated discussions, small group work, and plenary sessions that generated rich qualitative data on barriers, enablers, and implementation considerations across different national and institutional contexts.
4. **Phase 4: Online Survey** complemented the validation workshop by extending stakeholder consultation beyond the immediate consortium to a broader population of practitioners, policymakers, educators, industry representatives, and civil society actors. Conducted using the European Commission's EU Survey platform (survey identifier: 418de382-abb1-97f6-d303-230d6fd6f862), this phase gathered quantitative data on priority setting, feasibility assessments, and implementation preferences across the stakeholder landscape. The survey methodology was specifically designed to address a limitation identified during the validation workshop: while the workshop effectively identified barriers and assessed their severity, it struggled to translate challenges into concrete, prioritized actions. The online survey therefore focused on eliciting stakeholders' perspectives on which interventions should receive priority, what implementation strategies would be most effective, what barriers would be most severe in practice, and what accountability mechanisms would be most appropriate. This quantitative prioritization data enabled the research team to make evidence-based decisions about which elements of the Blueprint should receive emphasis and how recommendations should be sequenced and resourced.
5. **Phase 5: Structured Interviews** provided the deepest level of qualitative inquiry, allowing researchers to explore contextual nuances, organizational constraints, and implementation considerations that could not be adequately captured through workshop dialogue or survey instruments. Conducted with 37 key stakeholders across the partner countries, these semi-

structured interviews followed protocols tailored to different stakeholder categories—educational institutions, industry representatives, policymakers, current female VET students, and women's organizations—ensuring questions addressed role-specific perspectives and experiences. The purpose of this phase was to generate rich, contextualized narratives about gender equality challenges and opportunities, understand the practical constraints and enablers within different organizational settings, and identify concrete examples of successful interventions that could inform Blueprint recommendations. Interview data provided essential context for interpreting survey findings and workshop outputs, revealing the "how" and "why" behind stakeholder perspectives.

6. **Phase 6: Synthesis and Final Blueprint Development** integrated findings from all research phases into the final, validated Gender-Responsive Blueprint framework. This synthesis process involved systematically analyzing data from each methodological component, identifying convergent and divergent themes across data sources, resolving contradictions or tensions in stakeholder perspectives, and translating empirical findings into actionable strategic recommendations organized within the six-axis structure.

## 1.4 Initial Assumptions

The development of the Gender-Responsive Blueprint for GET began with a preliminary framework structured around six interconnected strategic axes, which served as the conceptual foundation for subsequent validation and refinement activities. This initial blueprint framework was developed based on desk research, literature review of best practices in gender equality initiatives, and the project consortium's collective expertise in VET provision, gender mainstreaming, and green energy transition.



Figure 1. The basic structure of the Blueprint

The six axes formed an integrated approach to addressing gender equality systematically:

- **Axis A (Access & Participation)** focused on removing barriers to women's entry into green energy education and careers;
- **Axis B (Curriculum & Pedagogy Reform)** addressed the creation of inclusive, gender-sensitive training content and delivery methods;
- **Axis C (Mentoring & Career Support)** concentrated on building sustained support systems for women's career development;

- **Axis D (Policy & Governance)** examined alignment with and influence on policy frameworks at all levels;
- **Axis E (Community & Industry Engagement)** emphasized building multi-stakeholder partnerships to support women's pathways; and
- **Axis F (Sustainability & Evaluation)** ensured mechanisms for long-term impact and continuous improvement.

This preliminary structure was deliberately designed to be comprehensive yet flexible, providing a starting point for stakeholder engagement and validation processes that would test its completeness, identify gaps, assess the relevance and severity of identified challenges, and ultimately refine the framework into an evidence-based, operationally viable blueprint capable of driving meaningful change in gender equality within the green energy sector across diverse European contexts.

## 1.5 Limitations

This Gender-Responsive Blueprint, while comprehensive in its strategic approach, operates within several acknowledged limitations that shape its scope and applicability. The primary geographical limitation stems from the framework's development across 3 European countries—Greece, Spain, Norway—which, despite their diversity, cannot fully represent the entire spectrum of cultural, economic, political, and educational contexts present across the broader European Union and associated countries. The six-month development timeline for the Blueprint, while sufficient for robust initial research and validation, necessarily constrained the depth of longitudinal analysis and the extent of stakeholder consultation that could be achieved, particularly in reaching marginalized or underrepresented groups within the target populations. The validation methodology, though rigorous, relied primarily on stakeholders already engaged with gender equality or green energy initiatives, potentially introducing selection bias and limiting insights from organizations or individuals less active in these domains.

The Blueprint's recommendations are evidence-based but context-dependent; their transferability and effectiveness will vary according to local institutional capacities, policy environments, cultural norms, and resource availability in implementation settings beyond the research sample. The rapidly evolving nature of both the green energy sector and gender equality policy frameworks means that certain data and policy references may require updating as national and European legislation develops. Finally, as a strategic framework rather than a prescriptive implementation manual, the Blueprint provides guidance and direction but cannot guarantee outcomes, as successful implementation depends fundamentally on the commitment, resources, and capacity of adopting organizations and the broader enabling environment within which they operate.

## 1.6 Audience

The Quality Assurance plan, either in its entirety or in specific sections, will be utilized by:

The Gender-Responsive Blueprint for GET is designed to serve multiple stakeholder groups, each with distinct roles in advancing gender equality within the green energy transition. Primary audiences include:

- **VET providers and educational institutions** who will utilize the Blueprint to reform curricula, develop gender-sensitive pedagogical approaches, and establish supportive learning environments for women in green energy programs at EQF levels 3 and 4.
- **Industry partners and employers** in the green energy sector will find practical guidance for implementing inclusive recruitment strategies, retention programs, and workplace practices that support women's career advancement in technical roles.



- **Policymakers at local, regional, national, and European levels** can draw upon the Blueprint's evidence-based recommendations to inform policy development, regulatory frameworks, and funding mechanisms that promote gender equality in the green energy transition.
- **Women's organizations and civil society actors** will benefit from the strategic framework as they design advocacy initiatives, support programs, and community engagement activities aimed at expanding women's participation in green energy careers.
- **Mentors, career counselors, and support service providers** will find actionable frameworks for developing effective mentorship programs and career guidance tailored to women's specific needs in male-dominated technical fields.

Additionally, **the GaTE project consortium partners** themselves will use the Blueprint as the guiding document for all subsequent project work packages, ensuring coherence and strategic alignment across awareness campaigns, capacity building interventions, and sustainability initiatives.

Finally, **researchers and practitioners** working on gender equality in STEM fields, energy transition, or VET systems will find valuable insights and methodological approaches that can inform similar initiatives across different contexts and sectors.

## 1.7 Document Organisation

This document is structured to provide a and logical progression from methodological foundations through empirical research findings to the final Gender-Responsive Blueprint framework.

- **Chapter 1 (Introduction and Methodology)** establishes the foundational context, outlining the Blueprint's purpose, scope, initial assumptions, limitations, target audiences, and the methodological approach employed throughout its development.
- **Chapter 2 (Desktop Survey)** presents the findings from comprehensive desk research conducted across three partner countries—Greece, Spain, and Norway—examining national contexts, policy and regulatory environments, and barriers and enablers affecting women's participation in the green energy sector, culminating in a cross-country synthesis of key findings.
- **Chapter 3 (Blueprint Validation Workshop)** documents the co-design process undertaken in Athens during July 2025, where consortium partners collectively validated and refined the preliminary Blueprint framework, providing detailed analysis of stakeholder feedback on each of the six strategic axes.
- **Chapter 4 (Online Survey Analysis)** presents quantitative data gathered through the EU Survey platform, complementing the qualitative validation workshop findings by identifying concrete change priorities, actionable goals, and specific implementation pathways across the stakeholder landscape.
- **Chapter 5 (Structured Interviews Analysis)** synthesizes insights from in-depth stakeholder consultations, providing nuanced understanding of contextual challenges and opportunities across different organizational and national settings.
- **Chapter 6 (The Gender-Responsive Blueprint)** presents the final, validated framework organized around the six strategic axes, incorporating all research findings and stakeholder input into actionable recommendations and implementation guidance.

Finally, **Annexes** provide supporting documentation including interview protocols, survey instruments, detailed methodological notes.

## 2. Desktop Survey

### 2.1 Greece

#### A. National Context Assessment

##### 1. Green Energy Sector Overview

Greece has strategically positioned itself as a regional renewable energy hub, demonstrating substantial progress toward ambitious decarbonization objectives. According to the revised National Energy and Climate Plan (NECP)<sup>1</sup> released in October 2024, the nation targets generating 81% of its electricity from renewable sources by 2030, marking a significant advancement from the 57% renewable share achieved in 2024. The NECP establishes a pathway toward achieving carbon neutrality by 2050, with intermediate greenhouse gas emission reduction targets of 58% by 2030 and 80% by 2040 compared to 1990 baseline levels.

The renewable energy transition encompasses multiple technological pathways. Solar photovoltaic capacity experienced remarkable expansion in 2024, with 2.6 GW of new installations bringing cumulative capacity to 9.6 GW by year-end, representing the highest annual deployment to date. This growth trajectory positions Greece to achieve its target of 25 GW solar capacity. Offshore wind development constitutes another strategic priority, with projected capacity reaching 1.9 GW by 2030 and potential expansion to 11.8 GW by 2050<sup>2</sup>. Onshore wind installations are anticipated to increase from 5.2 GW to 8.9 GW during this period<sup>3</sup>. Additionally, the energy strategy incorporates green hydrogen integration targets of 1.2 TWh and biogas capacity expansion from 100 MW to 300 MW by 2030<sup>4</sup>.

Investment flows into Greece's renewable energy sector have totaled approximately €9.5 billion over the past five years, catalyzing regional economic development and facilitating the nation's transformation from energy importer to potential net exporter status<sup>5</sup>.

##### 2. Gender Participation Baseline

Gender representation within Greece's energy sector reveals persistent disparities despite certain positive indicators. Women constitute 22.3% of the energy sector workforce as of 2022, a figure that, while slightly exceeding certain EU benchmarks, remains substantially below gender parity<sup>6</sup>. This underrepresentation occurs despite Greece's relatively strong performance in STEM education, where women account for over 40% of STEM graduates, positioning the country among Europe's leaders in female STEM participation. Educational statistics demonstrate that women represent 59.2% of tertiary education graduates and 55% of first-time tertiary entrants as of 2023.

Greece ranks 25th among EU member states on the Gender Equality Index 2024 with a score of 59.3 out of 100, positioned 11.7 points below the EU average of 71.0. This relatively lower ranking reflects broader structural challenges in achieving gender equality across economic and social domains. The risk of poverty affects women disproportionately in Greece, with 27.4% of women facing poverty risk compared to 25.2% of men, and these disparities extend to energy poverty vulnerabilities<sup>7</sup>.

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<sup>1</sup> [https://commission.europa.eu/publications/greece-final-updated-necp-2021-2030-submitted-2025\\_en](https://commission.europa.eu/publications/greece-final-updated-necp-2021-2030-submitted-2025_en)

<sup>2</sup> <https://www.enerdata.net/publications/daily-energy-news/greeces-revised-necp-targets-81-renewables-its-power-mix-2030.html>

<sup>3</sup> <https://www.pv-magazine.com/2025/02/05/greece-installs-2-6-gw-of-pv-capacity-in-2024/>

<sup>4</sup> <https://balkangreenenergynews.com/wind-farms-turn-greece-into-net-exporter-of-electricity/>

<sup>5</sup> <https://www.greeknewsagenda.gr/growth-renewable-energy-greece/>

<sup>6</sup> <https://eige.europa.eu/gender-equality-index/2024/country/EL>

<sup>7</sup> [https://ieecp.org/wp-content/uploads/2024/02/JUSTEM\\_Report\\_Energy-Poverty-and-Gender.pdf](https://ieecp.org/wp-content/uploads/2024/02/JUSTEM_Report_Energy-Poverty-and-Gender.pdf)

A notable development emerged with the establishment of WEnCoop (Women's Energy Cooperative) in 2021, recognized as Europe's first women-led energy cooperative<sup>8</sup>. Founded by the Greek Association of Women Entrepreneurs (SEGE) with 60 businesswomen members, WEnCoop has installed 1 MW of photovoltaic capacity and represents a pioneering model for increasing women's participation in renewable energy sectors. The initiative received recognition through the 2022 European Enterprise Promotion Awards, demonstrating its effectiveness as a best-practice model for gender-inclusive energy transition.

### 3. Educational Landscape Mapping (EQF 3-4 Focus)

Greece has undertaken systematic reforms to integrate sustainability competencies into vocational education and training (VET) systems. Law 4763/2020 introduced four specialized green subject areas within upper secondary VET schools implemented from 2022: technician in organic farming, technician in renewable energy sources installation, technician in heating installations and oil and natural gas technology, and landscape and environmental technician in technological application projects. Furthermore, three post-secondary vocational training institutes (IEK) underwent transformation into thematic institutes focused on natural environment and sustainability in 2021.

The educational framework continues evolving through Law 5082/2024, which aims to strengthen VET integration and improve synergies within the national qualifications framework. This legislation upgrades post-secondary vocational training institutes (IEK) into higher vocational training schools and establishes vocational education and training centers (KEEK) to enhance outreach and accessibility. However, gender-disaggregated enrollment data for these green specializations remains limited, representing a significant gap in monitoring gender equity in VET programs.

## B. Policy and Regulatory Analysis

### 1. National Policy Framework

The National Action Plan for Gender Equality 2021-2025 (NAPGE)<sup>9</sup> constitutes Greece's primary gender equality policy instrument, supported by a €100 million budget allocation. The framework operates through four priority axes addressing gender-based violence prevention, equal labor market participation, equal decision-making participation, and gender mainstreaming across sectoral policies. Priority Axis 4 specifically emphasizes gender mainstreaming throughout various ministries, incorporating measures for gender impact assessments and gender-responsive budgeting.

The Ministry of Development and Investments has implemented targeted initiatives promoting gender equality in innovation and technology sectors, including restructuring the National Council for Research in Technology and Innovation (ESETEK) with enhanced women's representation and establishing the National Register of Start-ups "Elevate Greece". Research institutions demonstrate increasing awareness of gender balance requirements, particularly through Gender Equality Plans mandated for participation in Horizon Europe funding programs.

### 2. EU Policy Alignment

Greece actively aligns national policies with European Union gender equality directives and participates in programs such as Women TechEU and Horizon Europe initiatives supporting women in technology and science sectors<sup>10</sup>. The country's engagement with EU frameworks includes implementing the Gender Balance on Corporate Boards Directive<sup>11</sup>, which entered application in December 2024 and establishes targets of 40% representation of the underrepresented sex among non-executive directors by June 2026. However, Greece currently demonstrates lower compliance rates compared to EU countries

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<sup>8</sup> <https://energycommunityplatform.eu/communities/energy-community-wencoop/>

<sup>9</sup> <https://isotita.gr/wp-content/uploads/2023/04/National-Action-Plan-for-Gender-Equality-2021-2025.pdf>

<sup>10</sup> [https://womengenderclimate.org/gjc\\_solutions/wencoop-first-women-entrepreneurs-energy-cooperative-in-greece/](https://womengenderclimate.org/gjc_solutions/wencoop-first-women-entrepreneurs-energy-cooperative-in-greece/)

<sup>11</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022L2381>

with binding gender quota legislation, where women's board representation averages 39.6% versus 17% in countries without such measures.

### 3. Institutional Policies

Educational and research institutions increasingly develop gender-sensitive curricula and organizational policies. Gender Equality Plans have become mandatory for Greek research organizations seeking European research funding, catalyzing systematic attention to gender balance in leadership structures, recruitment practices, and organizational culture. Nevertheless, implementation varies substantially across institutions, with more comprehensive adoption in larger research centers compared to smaller organizations.

## C. Barriers and Enablers Assessment

### 1. Access Barriers

Despite Greece's strong female representation in STEM education, persistent stereotypes and cultural norms continue limiting women's entry into technical energy sector roles. The energy sector's traditionally masculine organizational culture presents particular challenges for women's career advancement and retention<sup>12</sup>. Economic barriers compound these challenges, as Greece exhibits among the highest gender employment gaps in Europe, with female unemployment at 14.4% compared to male unemployment of 8.2% in 2023<sup>13</sup>. These employment disparities contribute to heightened energy poverty risks for women, creating interconnected vulnerabilities that impede equitable participation in the green energy transition.

### 2. Enablers and Success Factors

Several factors create favorable conditions for advancing gender equality in Greece's green energy sector. The nation's strong female STEM graduation rates (exceeding 40%) establish a substantial talent pipeline. The NAPGE framework provides dedicated financial resources and institutional mechanisms for advancing gender equality objectives. The rapidly expanding renewable energy sector generates new employment opportunities potentially more amenable to gender-inclusive practices than traditional energy industries. Additionally, pioneering initiatives such as WEnCoop demonstrate viable models for women's collective participation in energy cooperatives and prosumer arrangements.

Government commitment to gender mainstreaming in innovation policies, coupled with EU funding requirements mandating Gender Equality Plans, creates institutional incentives for systematic attention to gender equity. The increasing visibility of successful women entrepreneurs in renewable energy sectors through networks like SEGE contributes to challenging prevailing stereotypes and inspiring participation.

### 3. Specific Challenges for Marginalized Groups

Comprehensive data examining intersectional dimensions of gender inequality in Greece's energy sector remains severely limited<sup>14</sup>. Specific challenges faced by women from rural areas, ethnic minority backgrounds, women with disabilities, or those experiencing multiple forms of marginalization require substantially more research attention. The existing literature gap indicates that policy interventions may inadequately address diverse barriers affecting different women's groups, potentially perpetuating exclusions even as overall female participation increases.

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<sup>12</sup> [https://www.oecd.org/content/dam/oecd/en/publications/reports/2022/07/empowering-women-in-the-transition-towards-green-growth-in-greece\\_f2941dcc/a9eace66-en.pdf](https://www.oecd.org/content/dam/oecd/en/publications/reports/2022/07/empowering-women-in-the-transition-towards-green-growth-in-greece_f2941dcc/a9eace66-en.pdf)

<sup>13</sup> [https://cinea.ec.europa.eu/news-events/news/women-are-more-prone-energy-poverty-life-project-reports-2024-03-08\\_en](https://cinea.ec.europa.eu/news-events/news/women-are-more-prone-energy-poverty-life-project-reports-2024-03-08_en)

<sup>14</sup> <https://energy.press.eu/tag/greek-energy-forum/>



## 2.2 Spain

### A. National Context Assessment

#### 1. Green Energy Sector Overview

Spain's energy sector demonstrates robust growth trajectories with significant employment expansion. The sector employed 97,960 workers in the first quarter of 2024, representing a 13.3% increase from the previous year and achieving the highest employment level recorded over five years<sup>15</sup>. Within electricity production, transmission, and distribution subsectors, 84,712 employees represent 86.5% of total sector activity, with 69% male and 31% female workforce composition<sup>16</sup>. The solar photovoltaic sector alone generated 197,383 jobs in 2022, encompassing 59,100 direct, 97,600 indirect, and 40,683 induced positions<sup>17</sup>.

Spain's National Integrated Energy and Climate Plan (PNIEC) envisions transformative investment totaling €241.412 billion throughout the current decade, with projected annual net job creation ranging from 250,000 to 350,000 positions. Analysis of employment trends from 2015-2021 reveals that the energy transition created over 152,000 jobs in Spain, with a 10.6% growth rate. Significantly, 64% of these new positions (106,000 jobs) required high and medium-high skill levels, indicating the sector's evolution toward increasingly specialized professional roles.

Forward-looking projections suggest that Spain's renewable energy targets for 2025-2030, involving installation of an additional 71 GW capacity, could generate approximately 889,000 jobs, including roughly 110,000 positions requiring green skills. However, employment effects vary substantially by technology, deployment phase, project size, and educational requirements, with notable spillover effects to economically linked provinces.

#### 2. Gender Participation Baseline

Women's participation in Spain's energy sector exhibits gradual improvement while remaining substantially below parity. Women represent 31% of the energy sector workforce in 2024, increased from 28.5% in 2018, yet concentrated in the renewable energy subsector at only 16.5%. Analysis of new job creation during 2015-2021 reveals women occupied 38.1% of energy transition-linked positions, totaling 58,136 new jobs, a performance exceeding the European average of 34%.

Nevertheless, significant disparities persist. Women's employment in energy transition jobs stood at 18.2% in 2022, markedly below the 47% female representation in Spain's overall economy<sup>18</sup>. A gender wage gap of -14.7% exists within the sector, and current progress trajectories suggest achieving gender parity would require 265 years at present advancement rates. Recent data from December 2024 indicates women account for 33% of energy sector company workforces, with annual growth of approximately 3% since 2019.

Sectoral analysis reveals higher female representation in public sector energy entities compared to private companies, although this trend has reversed recently with declining public sector female employment and increasing private sector participation. Smaller companies (under 20 employees) demonstrate higher female representation, exceeding 50% in 2022. Positively, women in senior management positions increased 62% compared to 2010, reflecting effectiveness of corporate gender equality initiatives.

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<sup>15</sup> <https://www.energy-box.com/post/employment-in-spain-s-energy-sector-grows-by-13-3-to-97-960-in-2024>

<sup>16</sup> [https://www.oecd.org/en/publications/2024/06/oecd-employment-outlook-2024-country-notes\\_6910072b/spain\\_575846f9.html](https://www.oecd.org/en/publications/2024/06/oecd-employment-outlook-2024-country-notes_6910072b/spain_575846f9.html)

<sup>17</sup> <https://eige.europa.eu/gender-mainstreaming/good-practices/2020-2024-just-transition-strategy-spains-path-gender-equitable-green-transition>

<sup>18</sup> <https://euwes.door.hr/wp-content/uploads/sites/15/2024/02/Report-D1.2-English-version-Spain.pdf>

Regarding green-driven occupations, Spain demonstrates among the smallest gender gaps in the OECD, with approximately 25% male and 12.5% female representation in these roles. However, only 11.5% of workers in green-driven occupations hold new and emerging green positions, significantly below the 14.5% OECD average<sup>19</sup>.

### 3. Educational Landscape Mapping (EQF 3-4 Focus)

Spain's vocational education and training system shows encouraging female participation trends. Total VET enrollment reached 1,193,260 students in 2024/25, with steadily increasing women's participation: intermediate-level VET (EQF 3) female enrollment rose from 43.9% in 2012/13 to 45.7% in 2022/23<sup>20</sup>. Higher-level VET (EQF 5) maintained stable participation with substantial absolute increases from 161,981 to 280,011 female students.

Distance learning formats demonstrate notably higher female participation: 66.6% women at intermediate level versus 42.6% in face-to-face learning, and 62.5% women at higher level versus 45.0% in face-to-face modalities<sup>21</sup>. However, pronounced gender gaps persist in VET fields directly linked to energy transition, particularly in technical specializations such as installation and maintenance, electricity and electronics, and mechanical manufacturing.

Labor market analysis reveals employed populations with renewable energy and environmental studies skills demonstrate higher educational attainment and concentrate in sectors strategic for ecological transition. Green skills intensity in Spain reaches approximately 4%, aligning with the EU-27 average<sup>22</sup>. Individuals with highest green skills concentration are predominantly male, aged 40-54, typically self-employed full-time in primary industries, water and waste management, energy supply, or administrative functions.

## B. Policy and Regulatory Analysis

### 1. National Policy Framework

Spain has developed intersecting policy frameworks explicitly addressing gender equality within energy transition processes. The Just Transition Strategy 2020-2024<sup>23</sup> recognizes that while women's representation in renewable energy exceeds that in oil and gas industries, substantial gaps require targeted intervention. The strategy allocates over €26 million specifically for developing green skills and employment with explicit gender mainstreaming components.

The Strategic Project for Economic Recovery and Transformation in Renewable Energies, Renewable Hydrogen and Storage (PERTE ERHA)<sup>24</sup> acknowledges gender gaps and incorporates measures ensuring equal distribution of opportunities arising from renewable energy development. More than 26 million euros are directed toward green skills and job development within gender equality frameworks.

Spain's National Fuel Poverty Strategy 2019-2024<sup>25</sup> addresses energy poverty with specific attention to gender dimensions, recognizing women face elevated energy poverty risks. The 2022-2025 Strategic Plan for Effective Equality of Women and Men<sup>26</sup> provides overarching coordination, while the Ministry for Ecological Transition and Demographic Challenge implements 29 strategic actions bolstering female entrepreneurship in green sectors and showcasing women's roles in energy transition.

Just Transition Agreements constitute implementation mechanisms for the national strategy, incorporating participation from regional governments and stakeholders in managing fossil fuel and

<sup>19</sup> [https://www.bbvaresearch.com/wp-content/uploads/2025/03/Spain\\_Green-skills\\_mar25.pdf](https://www.bbvaresearch.com/wp-content/uploads/2025/03/Spain_Green-skills_mar25.pdf)

<sup>20</sup> <https://www.cedefop.europa.eu/en/news/spain-rise-womens-vet-participation>

<sup>22</sup> [https://www.bbvaresearch.com/wp-content/uploads/2025/04/Spain\\_Green-skills\\_march25.pdf](https://www.bbvaresearch.com/wp-content/uploads/2025/04/Spain_Green-skills_march25.pdf)

<sup>23</sup> <https://eige.europa.eu/gender-mainstreaming/good-practices/2020-2024-just-transition-strategy-spains-path-gender-equitable-green-transition>

<sup>24</sup> <http://espanadigital.gob.es/en/measure/perte-strategic-projects-economic-recovery-and-transformation>

<sup>25</sup> <https://ec.europa.eu/social/BlobServlet?docId=22466&langId=en>

<sup>26</sup> <https://eige.europa.eu/gender-mainstreaming/countries/spain>

nuclear phase-out impacts<sup>27</sup>. These agreements include gender clauses in public calls, quantitative and qualitative data collection and analysis, vocational training and employment support for women, and awareness-raising activities with stakeholder consultation. Through 2019-2021, the initiative supported over 300 businesses with approximately 42% of newly created jobs allocated to women<sup>28</sup>.

## 2. EU Policy Alignment

Spain actively aligns with EU gender equality directives and participates extensively in initiatives such as Women TechEU and related programs supporting women in technology and energy sectors<sup>29</sup>. The country has received recognition for progress in gender mainstreaming within energy policies, demonstrating leadership in implementing EU frameworks at national level. Spain's approach exemplifies integration of ecological sustainability and gender equality objectives, positioning the nation as a model for gender-equitable green transition governance.

## 3. Institutional Policies

Educational institutions and energy companies increasingly develop diversity and inclusion policies. Organizations such as the Naturgy Foundation implement programs enhancing STEM vocations among girls aged 10-16 through initiatives like "Efigy Girls"<sup>30</sup>. The Institute for Women (Instituto de las Mujeres)<sup>31</sup> collaborates with energy sector entities to enhance outreach to women's groups and ensure their meaningful participation in transition processes.

Gender champions within governmental structures work to overcome traditional barriers to women's participation, particularly in rural communities affected by energy transition. These champions have identified that standard outreach mechanisms often fail to engage women effectively, necessitating targeted protocols and partnerships with organizations maintaining closer contact with women's networks.

## C. Barriers and Enablers Assessment

### 1. Access Barriers

At educational levels, limited female participation in technical education programs persists, with women representing only 31% of graduates in engineering, industry and construction fields. Persistent stereotypes continue influencing career choices despite overall improvements in educational access. At career levels, women concentrate disproportionately in lower-paying roles with limited representation in technical and managerial positions. The energy sector's 14.7% gender wage gap reflects systematic undervaluation of women's contributions. Cultural barriers remain particularly pronounced in traditional energy sectors, though renewable energy demonstrates marginally better gender balance.

### 2. Enablers and Success Factors

Multiple factors support advancement toward gender equity in Spain's energy transition. Growing interest in environmental sustainability among women creates favorable attitudinal foundations. The strong policy framework with dedicated funding mechanisms provides institutional support and financial resources for gender equality interventions. Active involvement of foundations and private sector entities contributes implementation capacity and innovative program models. Higher female participation in distance learning VET programs suggests flexibility in educational delivery enhances accessibility. The Just Transition framework's explicit incorporation of gender equality principles establishes accountability mechanisms and visibility for women's participation<sup>32</sup>.

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<sup>27</sup> [https://www.dsca.gob.es/sites/default/files/derechos-sociales/ENV2024EN\\_0.pdf](https://www.dsca.gob.es/sites/default/files/derechos-sociales/ENV2024EN_0.pdf)

<sup>28</sup> <https://www.transicionjusta.gob.es/content/dam/itj/files-1/Documents/Publicaciones%20ES%20y%20EN/Employment-of-Women-in-the-Just-Energy.pdf>

<sup>29</sup> [https://eige.europa.eu/newsroom/news/how-team-gender-champions-powering-spains-energy-revolution?language\\_content\\_entity=en](https://eige.europa.eu/newsroom/news/how-team-gender-champions-powering-spains-energy-revolution?language_content_entity=en)

<sup>30</sup> <https://www.fundacionnaturgy.org/en/education-and-dissemination/efigy-education/efigy-girls/>

<sup>31</sup> <https://www.inmujeres.gob.es/>

<sup>32</sup> <https://www.realinstitutoelcano.org/en/analyses/from-phasing-out-to-phasing-in-lessons-from-spains-just-transition-governance-framework/>

### 3. Specific Challenges for Marginalized Groups

Just Transition Agreements specifically address retraining needs in coal regions with attention to women's participation in economic restructuring processes. However, comprehensive data examining intersectional challenges—such as those faced by women from immigrant backgrounds, rural women with limited mobility, women with disabilities, or those experiencing multiple forms of marginalization—remains limited. This data gap suggests policy interventions may inadequately address diverse barriers affecting different women's groups within Spain's heterogeneous population and regional contexts.

## 2.3 Norway

### A. National Context Assessment

#### 1. Green Energy Sector Overview

Norway maintains global leadership in gender equality policies while pursuing ambitious renewable energy development strategies. The nation's energy system centers on established hydroelectric power infrastructure while expanding into offshore wind development, hydrogen technology advancement, and continued oil and gas production management with decarbonization objectives. Norway's approach emphasizes energy security, international climate commitments, and economic sustainability through diversified energy portfolios.

The country serves as an international model for gender-responsive energy financing, working through foreign policy and development cooperation mechanisms to empower women in energy sectors globally. Norway's development programs explicitly integrate gender equality as cross-cutting objectives in energy sector support to partner countries.

#### 2. Gender Participation Baseline

Norway demonstrates exceptional performance in gender equality metrics relevant to energy sector participation. Female labor force participation reached 61.72% in 2024, declining marginally from 61.76% in 2023 yet maintaining among the highest rates globally<sup>33</sup>. Women's employment rate stood at 60% in 2023, with female unemployment at 3.7% in 2024, reflecting strong overall labor market integration.

The landmark gender quota law introduced in 2010 mandated minimum 40% representation of each gender on boards of public limited liability companies, state-owned limited liability companies, and subsequently extended to larger private limited liability companies<sup>34</sup>. This policy achieved remarkable success, with women's corporate board representation increasing from 6% in 2002 to 9% in 2004, 12% in 2005, 18% in 2006, 25% in 2007, 36% in 2008, and 40% by 2009<sup>35</sup>. The policy's effectiveness demonstrates that binding quota legislation produces substantial, rapid increases in women's leadership representation.

Recent legislative developments extend gender representation requirements to private limited liability companies meeting size criteria, general partnerships, foundations, cooperatives, and housing associations. From January 2024, new rules affecting approximately 8,000 companies initially and expanding to approximately 20,000 companies by 2028 mandate gender balance on boards<sup>36</sup>. The

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<sup>33</sup> <https://genderdata.worldbank.org/en/economies/norway>

<sup>34</sup> <https://dev.eui.eu/genderquotas/wp-content/uploads/sites/24/2015/03/Executive-summary-Norway-Teigen.pdf>

<sup>35</sup> [https://www.regjeringen.no/globalassets/upload/europaportalen/images/1105/no\\_discussion\\_paper\\_no\\_2012.pdf#:~:text=The%20Norwegian%20quota%20law%20was%20passed%20in.attention%20has%20been%20on%20the%20public%20limited](https://www.regjeringen.no/globalassets/upload/europaportalen/images/1105/no_discussion_paper_no_2012.pdf#:~:text=The%20Norwegian%20quota%20law%20was%20passed%20in.attention%20has%20been%20on%20the%20public%20limited)

<sup>36</sup> <https://worldatwork.org/publications/workspan-daily/norway-to-mandate-40-quota-for-women-on-company-boards>

government estimates requirements will necessitate approximately 6,600 new board members by 2024, predominantly women, increasing toward 2028.

Despite Norway's overall gender equality achievements, the energy sector specifically demonstrates persistent underrepresentation of women. Women constitute only 21% of the energy industry workforce, with limited improvement in recent years despite energy sector being policy priority area<sup>37</sup>. This indicates that sectoral cultures and structural barriers require targeted interventions even within broadly gender-equal societies.

### 3. Educational Landscape Mapping (EQF 3-4 Focus)

Norway emphasizes gender equality integration throughout vocational education systems. The country implements gender and inclusion training series as global initiatives transforming energy sectors and empowering women internationally. The ICH Gender and Inclusion Training Series hosted in Oslo brings together international participants for advancing gender-diverse energy futures<sup>38</sup>.

Educational policies promote gender equality from early educational stages through higher education, contributing to Norway's achievement of female majority at universities and institutions of higher education. However, occupational segregation persists, with only 15% of Norway's working population employed in gender-balanced occupations (those with more than 40% of both sexes). Women increasingly choose occupations previously dominated by men, while men demonstrate less tendency to enter traditionally female-dominated fields.

The Norwegian government's Gender Equality Strategy for the Maritime Sector, presented in June 2023, exemplifies sectoral approaches addressing gender segregation in male-dominated industries through four focus areas including recruitment strategies.

## B. Policy and Regulatory Analysis

### 1. National Policy Framework

The Programme for Gender Equality for Development<sup>39</sup> constitutes Norway's framework integrating gender equality across all sectors including energy. Key elements include systematic gender mainstreaming into policies and actions, public responsibility positioning gender equality as government obligation at all levels, and international cooperation emphasizing technical knowledge-sharing with partner institutions globally.

Norway's Gender Equality Strategy 2025-2030<sup>40</sup> establishes goals including increasing women's representation in male-dominated occupations and men's participation in female-dominated fields. The strategy acknowledges that gendered labor market dimensions are decreasing as women increasingly enter male-dominated occupations, yet men remain less likely to choose traditionally female-dominated fields. The strategy emphasizes addressing gender pay gaps, extensive part-time working among women, and men's educational and career choice patterns.

The Norwegian Water Resources and Energy Directorate (NVE)<sup>41</sup> implements specific gender objectives including creating "critical mass" of qualified women in energy sector roles. Energy institutions maintain systematic gender balance monitoring integrated into organizational performance assessments.

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<sup>37</sup> <https://accept.aseanenergy.org/exclusive-norway-engaging-women-in-southeast-asia-energy-development-lesson-learnt-from-norway/>

<sup>38</sup> <https://ich.no/ich-gender-and-inclusion-training-series-global-movement-for-sustainable-energy-oslo-norway/>

<sup>39</sup> <https://www.bufdir.no/en/gender-equality-for-development/>

<sup>40</sup> <https://www.regjeringen.no/contentassets/7824055c55244a87a86bbb4007fe7fcf/en-gb/pdfs/strategi-for-likestilling-mellom-kvinner-og-menn-e.pdf>

<sup>41</sup> <https://www.nve.no/english/>



## 2. EU Policy Alignment and International Leadership

Although not an EU member state, Norway actively leads international gender equality efforts including the Nordic Energy Equality Network (NEEN)<sup>42</sup>, which promotes gender diversity and empowerment throughout the Nordic region. Norway contributes expertise to EU initiatives while maintaining its own advanced standards, often serving as reference model for EU policy development.

## 3. Institutional Policies

Norwegian energy companies implement gender equality policies, exemplified by entities such as Statkraft publishing annual gender equality reports detailing workforce composition, pay equity analyses, and measures addressing identified gaps. The Norwegian government's protocol with the Institute for Women establishes systematic coordination mechanisms ensuring gender perspectives inform energy policy development.

Labor organizations actively engage in just transition advocacy emphasizing gender-transformative approaches recognizing disproportionate climate change impacts on women workers and unpaid care work burdens. Trade union strategies increasingly incorporate gender equality objectives within just transition frameworks, advocating for gender-inclusive policies ensuring universal social protection.

## C. Barriers and Enablers Assessment

### 1. Access Barriers

Despite Norway's exceptional gender equality achievements, challenges persist within energy sector contexts. Traditional masculine cultures in technical sectors continue presenting barriers to women's entry and advancement. The energy sector's 21% female workforce representation, remaining stagnant despite overall progress, indicates deeply embedded structural and cultural obstacles requiring sustained attention. Regional variations in implementation of gender equality policies suggest uneven progress across geographic areas and organizational contexts.

Research indicates that occupational gender segregation generates multiple inequalities including gender pay gaps, extensive part-time employment among women disproportionately, and educational choice patterns requiring intervention. The persistence of these patterns even in highly gender-equal contexts demonstrates that achieving formal equality does not automatically translate to substantive equality in all domains.

### 2. Enablers and Success Factors

Norway's success in advancing gender equality stems from multiple mutually reinforcing factors. Comprehensive welfare systems supporting work-life balance, including generous parental leave policies and subsidized childcare, enable high female labor force participation. Legal frameworks with enforceable quotas and penalties for non-compliance create binding obligations rather than voluntary targets. Cultural commitment to gender equality, reflected in public opinion and political consensus, provides sustained political will for maintaining and strengthening measures.

International leadership positioning Norway as gender equality model creates reputational incentives and expertise-sharing opportunities reinforcing domestic commitments. Strong educational systems promoting gender equality from early ages establish foundational attitudes and aspirations supporting later labor market participation. Active civil society organizations, trade unions, and women's networks advocate for continued progress and hold institutions accountable for implementation.

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<sup>42</sup> <https://neen.network/>

### 3. Specific Challenges for Marginalized Groups

Norway addresses intersectional dimensions through anti-discrimination legislation covering multiple identity categories including gender, ethnicity, religion, disability, sexual orientation, and age. Support systems for women from diverse backgrounds include immigrant integration programs, disability accommodations, and targeted labor market initiatives. International cooperation programs specifically focus on marginalized groups in partner countries, including rural women, indigenous women, and women in informal economies, demonstrating awareness of intersectional barriers.

However, even within Norway's advanced framework, data gaps remain regarding specific experiences of women facing multiple forms of marginalization within energy sectors. Indigenous women's participation, immigrant women's experiences, and disability-related barriers in energy sector employment require more systematic research and policy attention.

## 2.4 Key Findings Summary

### 2.4.1 Gender Participation Trends

Greece demonstrates 22.3% women's representation in the energy sector workforce alongside strong STEM graduation rates exceeding 40% of female graduates, positioning it among European leaders. The pioneering WEnCoop initiative established Europe's first women-led energy cooperative in 2021, providing a replicable model for collective women's participation.

Spain achieved 31% women's representation in the energy sector in 2024, increased from 28.5% in 2018, with women occupying 38.1% of new energy transition jobs created during 2015-2021, exceeding the 34% European average. The renewable energy subsector shows lower female representation at 16.5%, indicating persistent technical field barriers.

Norway achieved 40% women's board representation through binding quota legislation by 2009, demonstrating policy effectiveness. However, the energy sector workforce remains only 21% female, indicating sector-specific cultural barriers persisting despite overall societal gender equality achievements.

Globally, IRENA data reveals women represent 32% of the renewable energy workforce in 2024, unchanged since 2019 despite substantial sector growth, with representation declining sharply in technical roles (28% in STEM positions), medium-skilled jobs (22%), and senior management (19%)<sup>43</sup>.

### 2.4.2 Policy Innovation

Greece's National Action Plan for Gender Equality 2021-2025 allocates €100 million for gender equality interventions across priority axes including labor market participation and sectoral policy gender mainstreaming. Law 4763/2020 introduced four green specializations in VET, integrating sustainability into vocational education pathways.

Spain's Just Transition Strategy allocates over €26 million specifically for green skills development with explicit gender equality measures, supported by PERTE ERHA strategic framework recognizing gender gaps in renewable energy opportunities. The strategy created over 42% female representation among new jobs in 2019-2021 through supported businesses.

Norway's 40% gender quota law for corporate boards, implemented 2010 and recently extended to broader company categories from 2024, establishes legally binding targets with enforcement mechanisms. The Programme for Gender Equality for Development systematically integrates gender equality across energy sector international cooperation.

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<sup>43</sup> <https://www.irena.org/Publications/2025/Oct/Renewable-Energy-A-Gender-Perspective>

The European Union's Gender Balance on Corporate Boards Directive, entering application December 2024, mandates 40% underrepresented sex representation among non-executive directors by June 2026 for large listed companies across member states.

### 2.4.3 VET Developments

Greece introduced four green subject areas in upper secondary VET through Law 4763/2020, covering organic farming, renewable energy installation, heating installations technology, and landscape and environmental technology. Three post-secondary institutes transformed into thematic sustainability-focused institutions in 2021. However, gender-disaggregated enrollment data for green specializations remains incomplete.

Spain achieved 45.7% female participation in intermediate-level VET by 2022/23, with total VET enrollment reaching 1,193,260 students in 2024/25. Distance learning shows notably higher female participation: 66.6% at intermediate level and 62.5% at higher level, suggesting delivery format flexibility enhances accessibility. Gender gaps persist in energy-related technical fields despite overall improvements.

Norway implements international gender and inclusion training series for energy sector transformation, hosted in Oslo with participants from multiple countries. Educational systems promote gender equality from early stages through higher education, achieving female majority in universities. However, only 15% of working population occupies gender-balanced occupations, indicating persistent sectoral segregation requiring ongoing intervention.

### 2.4.4 Main Barriers

All three countries face persistent challenges in technical field participation despite varying overall gender equality contexts. Traditional sector cultures and stereotypes continue limiting women's entry and advancement in energy industries. Educational pathways show gender segregation with women underrepresented in engineering and technical specializations directly linked to energy sector careers.

Economic barriers including gender wage gaps (Spain reports -14.7% in energy sector), concentration in lower-paying roles, and limited senior management representation affect women across contexts. Energy poverty disproportionately affects women, particularly in Greece and Spain, creating interconnected vulnerabilities impeding equitable participation.

Intersectional data gaps persist across all countries, with limited systematic evidence regarding experiences of women from ethnic minorities, rural areas, immigrant backgrounds, those with disabilities, or facing multiple marginalization forms. This evidence gap suggests policy interventions may inadequately address diverse barriers affecting different women's groups.

At present advancement rates, Spain would require several years to achieve gender parity in energy sectors, while global renewable energy workforce female representation remains stagnant at 32% since 2019 despite rapid sector expansion. These trajectories indicate that energy transition growth does not automatically translate to gender equity improvements without deliberate, sustained interventions.

## 3. Blueprint Validation Workshop

### 3.1 Blueprint Validation Workshop Methodology

The Blueprint validation process was conducted through a co-design workshop held in Athens, Greece in July 2025, as part of the project's second work package activities. The workshop brought together representatives from the GaTe consortium partners spanning four countries—Spain, Greece, Norway, and representation at the European level—to collectively validate and refine the preliminary Blueprint framework developed during the preparation phase.

The validation process employed a structured questionnaire instrument designed to assess the completeness and relevance of the Blueprint's initial five axes: Access and Participation (Axis A), Curriculum and Pedagogy Reform (Axis B), Mentoring and Career Support (Axis C), Policy and Governance (Axis D), and Community and Industry Engagement (Axis E). Axis F (Sustainability and Evaluation) was not included in the workshop validation questionnaire due to time constraints and its identification as a complete gap in the desktop survey coverage. This axis will be validated through a subsequent online survey to ensure coverage of all Blueprint dimensions.

The questionnaire, detailed in **Annex I** alongside the initial framework description, required participants to evaluate each axis across four dimensions: framework completeness, challenge assessment (rating barriers by relevance, severity, and required blueprint attention), identification of missing challenges, and prioritization of actions. This multi-dimensional approach enabled both quantitative assessment through standardized ratings and qualitative enrichment through open-ended responses capturing context-specific insights and recommendations.

Eight (8) completed questionnaires were collected from project partners representing diverse organizational perspectives, including VET education providers, energy sector regulatory authorities, research and training organizations, renewable energy networks, and women's empowerment organizations. This diversity ensured that the validation process incorporated viewpoints from multiple stakeholder categories critical to the green energy transition ecosystem. The collaborative workshop format facilitated real-time discussion, clarification, and consensus-building among partners, strengthening ownership of the Blueprint development process while enabling the identification of gaps and priorities that would inform the subsequent research and synthesis phases leading to the final deliverable.

The following sections present the validation results for each Blueprint axis, analyzing four key dimensions: framework completeness and identification of missing elements, challenge assessment examining the relevance, severity, and blueprint attention required for each barrier, additional missing challenges proposed by respondents, and priority actions for strategic intervention. This structured analysis enables a deeper understanding of stakeholder perspectives on both the adequacy of the initial framework and the strategic priorities for Blueprint development across all five validated axes.

### 3.2 Axes A - Access and Participation

#### 3.2.1 Framework completeness

Based on the questionnaire responses, four partners identified gaps in the Axis A framework. Spain's Inercia Digital highlighted the need to include early-stage outreach activities in schools and high schools, recognizing that while VET is the main target group, early educational stages play a crucial role in shaping career choices. Greece's RAE emphasized the absence of government initiatives aimed at upgrading the educational system for gender equality in both education and labour sectors, specifically

within STEM VET contexts. EULEC raised an important clarification question regarding the scope of barriers addressed—whether the framework focuses exclusively on VET pathways or also encompasses university routes to green energy careers. Finally, Norway's ECWT pointed to the missing consideration of gender-sensitive language and concepts related to work equity and care responsibilities. These gaps suggest that while half of the respondents found the framework comprehensive, there is room to strengthen Axis A by incorporating earlier educational interventions, clearer governmental policy frameworks, pathway clarification, and more nuanced gender-sensitive terminology.

### 3.2.2 Challenge Assessment

The four challenges in Axis A received differentiated assessments revealing clear consensus on priorities. **Gender stereotypes and bias** emerged as a high priority challenge, with most respondents rating it 4-5 across relevance, severity, and blueprint attention needed, indicating strong agreement that pervasive stereotyping fundamentally limits women's access to green energy education and careers. **Lack of role models and mentors** similarly received high priority ratings, consistently assessed at 4-5 levels, underscoring the critical importance of visible female representation and structured mentoring relationships in attracting and supporting women in the sector. **Socio-cultural barriers** also achieved high priority status, with particularly strong emphasis from Greek respondents who rated it at maximum levels, reflecting the significant influence of family expectations, community attitudes, and cultural norms on women's educational and career choices in technical fields.

**Limited access to information and guidance** received medium-high priority ratings with more variability across respondents (range 3-5), suggesting that while information gaps are recognized as important, they may be perceived as more addressable or less fundamental than stereotypes and cultural barriers. The assessment pattern reveals an interesting geographical dimension: Greek respondents consistently rated all barriers at the higher end of the scale, while Norwegian ratings were notably lower, potentially reflecting different baseline conditions in national VET systems and labour markets. The consensus that three of four barriers require high-priority attention indicates that addressing women's participation in green energy VET demands multi-faceted interventions rather than single-issue solutions, with particular emphasis on dismantling stereotypes, building mentoring infrastructure, and transforming socio-cultural attitudes alongside practical improvements in information access.

### 3.2.3 Missing Challenges

Most respondents identified additional challenges/barriers not covered in the original Axis A framework. The missing barriers cluster into five thematic areas: economic barriers, workplace/employment issues, support systems, awareness/communication gaps, and vulnerable groups. Economic barriers emerged as a significant concern, with multiple respondents highlighting the gender pay gap and broader issues of financial independence for women, particularly those from marginalized groups, as well as general funding constraints. Workplace and employment barriers were identified through concerns about public gender bias in hiring processes, occupational segregation that confines women to administrative rather than leadership positions, and systemic obstacles in accessing vocational education and labour markets. The inadequacy of support systems was noted through the lack of childcare facilities and insufficient female professional networks for mentoring and advocacy. Communication and awareness gaps featured prominently, with respondents pointing to insufficient information about the value women bring to the green energy and technology sector, poor career communication in STEM fields, and the need for targeted awareness campaigns. Finally, specific attention was drawn to the economic and financial independence challenges faced by vulnerable and marginalized groups of women, suggesting that intersectional barriers require explicit consideration. These additional barriers indicate that the original framework, while comprehensive in addressing stereotypes and cultural norms, may underemphasize structural economic factors, institutional support mechanisms, and the specific needs of disadvantaged populations.

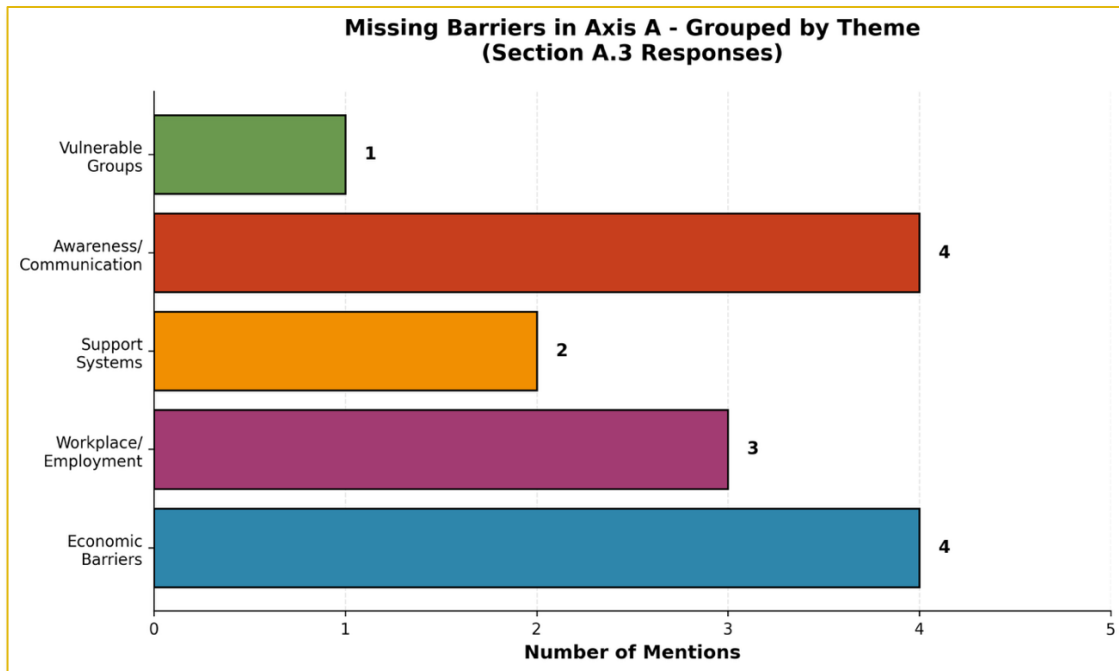


Figure 2. Missing challenges in Axis A

### 3.2.4 Revised Axis A structure

Based on the validation questionnaire responses, **Axis A: Access & Participation** should be reformulated with an expanded scope that addresses systemic and structural barriers beyond the original framework. The revised structure maintains the core focus on removing barriers to women's entry into green energy education and careers but incorporates seven enhanced components rather than the original four.

The enhanced framework should include: (1) **Economic & Financial Barriers** as a distinct category covering gender pay gap, financial independence challenges, and funding access; (2) **Workplace & Employment Barriers** addressing hiring bias, occupational segregation, and labour market obstacles; (3) **Support Systems** encompassing childcare facilities and professional networks; (4) **Communication & Awareness** strategies including career communication, awareness campaigns, and gender-sensitive language; (5) **Educational Pathway Clarification** spanning early-stage outreach through schools and high schools, VET pathways, and university routes; (6) **Policy & Governance Interface** covering government initiatives, implementation mechanisms, and STEM VET policy frameworks; and (7) an **expanded focus on marginalized groups** with intersectional analysis of barriers faced by women with disabilities, childcare responsibilities, low income, and ethnic minorities.

Additionally, the revised Axis A should integrate **community and family influences** as a new component, recognizing that family reactions, community-level barriers, and cultural norms significantly impact women's career choices. This multi-level approach—addressing individual, institutional, and systemic barriers—creates stronger connections with other Blueprint axes, particularly linking early-stage interventions to curriculum reform (Axis B), professional networks to mentoring (Axis C), governance gaps to policy frameworks (Axis D), and family/community dimensions to stakeholder engagement (Axis E). The reformulated axis requires expanded data collection on economic and support system factors, a lifecycle perspective covering the full pathway from early education through employment, and specific success indicators for each barrier cluster identified through validation.

## 3.3 Axis B - Curriculum and Pedagogy Reform

### 3.3.1 Framework Completeness

The Axis B framework received markedly different feedback compared to Axis A, with four respondents considering it comprehensive and only one identifying a gap. Among those who provided assessments, the majority found the curriculum and pedagogy framework complete as presented. One respondent highlighted the absence of explicit consideration for limited female STEM representation and role models within the curriculum framework itself—a concern that bridges both access issues and pedagogical content. Notably, three respondents did not mark this section, which may indicate either satisfaction with the framework or uncertainty about its completeness. The relatively high rate of "comprehensive" assessments suggests that the original Axis B structure adequately captures the main dimensions of curriculum and pedagogy reform, though the identified gap regarding female representation indicates that this element, while potentially implied in existing categories, may benefit from more explicit articulation within the framework.

### 3.3.2 Challenge Assessment

The five curriculum and pedagogy challenges received varied assessments across respondents, revealing both consensus areas and significant regional differences. **Unconscious bias in teaching materials and methods** emerged as the highest priority challenge, with multiple respondents rating it at the maximum level (5) for relevance, severity, and blueprint attention needed, indicating strong agreement that this requires urgent intervention. **Scarcity of female role models in materials** also received high priority ratings, particularly from Norwegian and Greek respondents who rated it at 5, suggesting this is a critical gap across diverse educational contexts. **Underrepresentation of female instructors** was rated as medium-high priority by most respondents (4-5 range), though notably one respondent rated the blueprint attention needed as 1 despite acknowledging its severity, possibly indicating a perception that this issue should be addressed elsewhere or through different mechanisms.

The assessments for **limited gender-responsive teaching methods** and **lack of inclusivity in technical curricula** showed more variation across countries. Gender-responsive teaching methods received medium-high priority ratings (mostly 3-5), with Greek respondents emphasizing higher urgency. Curriculum inclusivity showed the widest divergence: Greek respondents rated it highly (4-5) while European and Norwegian respondents rated it low (1-3), and Spanish respondents fell in the middle range (2-4). This variation may reflect different baseline conditions in national VET systems, with some countries having already made progress on curriculum inclusivity while others face more fundamental challenges. The overall pattern suggests that while material-level issues (bias and role models) generate consensus as priorities, systemic curriculum reform and pedagogical transformation show more context-dependent urgency, requiring differentiated approaches across partner countries.

### 3.3.3 Missing Challenges

Five out of eight respondents identified additional challenges not addressed in the original Axis B framework. These missing challenges organize into five thematic clusters: educational system structure, early-stage interventions, curriculum content, visibility and representation, and capacity building. Structural concerns about the educational system were prominent, with respondents noting that VET is often perceived as a second-tier educational option compared to university pathways, requiring fundamental restructuring of how STEM education and recruitment function within the system. Early-stage intervention gaps were identified through the absence of strategies for addressing VET-related issues at primary and secondary school levels, including how to work with families, and the lack of gender-sensitive career guidance before students reach VET programs. Curriculum content deficiencies centered on the limited integration of gender perspectives into green energy topics, with respondents emphasizing that curricula rarely incorporate gender analysis or explicitly link gender equality with sustainability and green energy transitions, thereby missing opportunities to make these connections

visible and meaningful. Visibility and representation challenges highlighted the need to showcase women in leadership positions within the sector, with one respondent noting that representation is better in university settings than in VET, suggesting a gap in role model visibility specific to vocational contexts. Finally, the lack of educator capacity was identified as a fundamental challenge, indicating that instructors may lack the training, resources, or expertise needed to deliver gender-responsive pedagogy effectively. These gaps suggest that while the original Axis B framework addresses teaching methods and materials, it may underemphasize systemic issues around VET positioning, the need for earlier educational interventions, explicit gender-energy curriculum integration, leadership representation, and educator training.

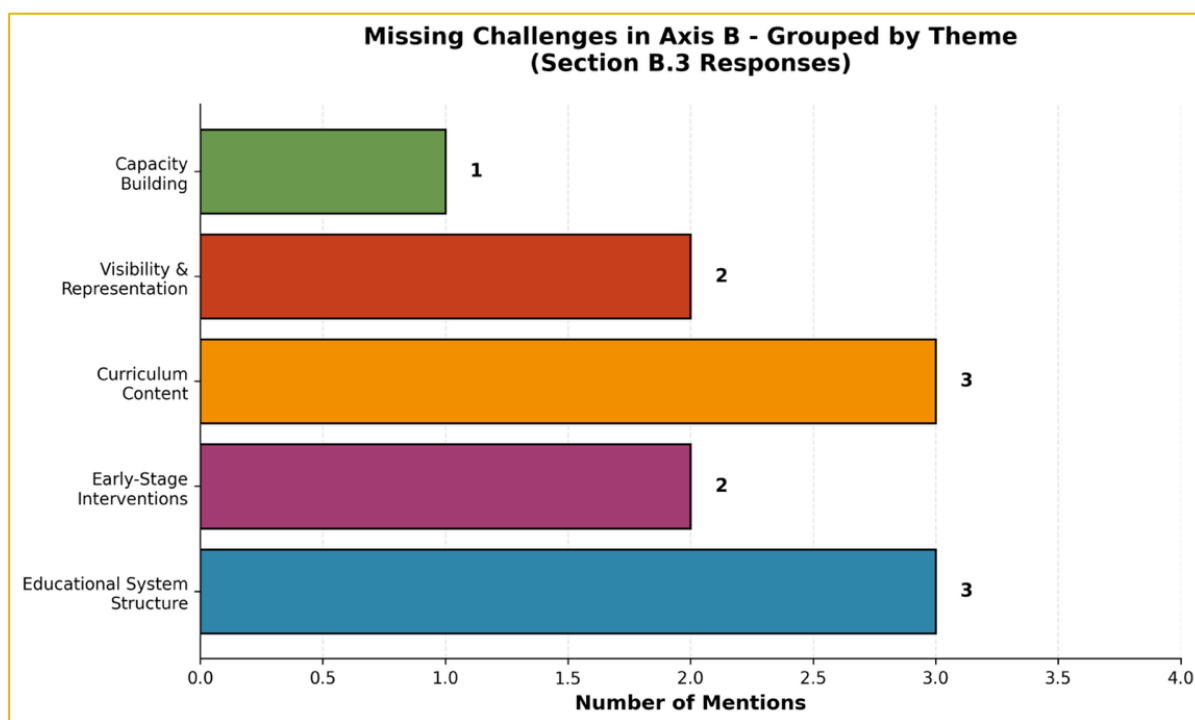


Figure 3. Missing challenges in Axis B

### 3.3.4 Revised Axis B Structure

Based on the validation questionnaire responses, **Axis B: Curriculum & Pedagogy Reform** should be reformulated with an expanded scope that addresses not only teaching methods and materials but also systemic positioning, early-stage interventions, and explicit gender-energy content integration. The revised structure maintains the core focus on creating inclusive, gender-sensitive training but incorporates five major enhancements to the original framework.

The enhanced framework should include: (1) **Gender-Responsive Curriculum Content** expanded to explicitly integrate gender analysis in green energy topics, create clear links between gender equality and sustainability transitions, and enhance female role model representation with particular attention to leadership visibility across VET and university contexts; (2) **Educational System Positioning** as a new component addressing VET's perception as a "second option" educational pathway, requiring systemic restructuring of STEM recruitment and educational frameworks to elevate VET status; (3) **Early-Stage Curriculum Interventions** introducing pre-VET engagement at primary and secondary school levels, family engagement strategies, and gender-sensitive career guidance before students enter vocational programs; (4) **Instructor and Educator Development** as a new component focusing on capacity building through training on gender-responsive pedagogy, professional development programs, and addressing the identified gap in educator preparedness; and (5) **Enhanced Pedagogical Approaches**

incorporating digital and innovative teaching methodologies alongside existing inclusive methods and bias mitigation strategies.

These additions address critical gaps identified through validation: the structural challenge that VET is undervalued compared to university pathways, the need for intervention before students reach VET age, the absence of explicit gender perspectives in green energy curriculum content, and insufficient educator capacity to deliver gender-responsive teaching. The reformulated axis creates stronger linkages with Axis A through early-stage interventions, with Axis C through role model integration, with Axis D through educational system restructuring, and with Axis E through family and community engagement—ensuring a comprehensive approach to curriculum reform that extends beyond classroom-level changes to address systemic barriers.

## 3.4 Axis C - Mentoring and Career Support

### 3.4.1 Framework Completeness

The Axis C framework received the least engagement of all axes, with six out of eight respondents not marking this section at all. Only one respondent found the framework comprehensive, while one identified a significant gap. The identified missing element focused on the need for government initiatives to promote mentoring and career support systems, with emphasis on consolidating fragmented facilities and resources into a more coordinated structure. The high rate of non-response (75%) is noteworthy and may indicate several possibilities: respondents may have been uncertain about what mentoring and career support should encompass, the framework may have appeared adequate at face value without deeper consideration, or there may have been survey fatigue by the time respondents reached Axis C. The single identified gap highlights an important structural dimension—that mentoring and career support cannot rely solely on individual or institutional initiatives but require governmental backing and systematic coordination of facilities. This suggests the need for clearer articulation of what mentoring frameworks should include, and whether the original structure adequately addresses both grassroots and policy-level support mechanisms.

### 3.4.2 Challenge Assessment

The Axis C challenge assessment section revealed a significant methodological issue that limits the interpretability of the results. Six out of seven respondents who completed this section marked all rating options (1-2-3-4-5) for all six challenges across all three dimensions (relevance, severity, and blueprint attention needed), indicating they checked all available boxes rather than selecting specific ratings. This response pattern suggests either confusion about the rating instructions, genuine perception that all challenges are equally important across the entire spectrum, or limited engagement with this particular section of the questionnaire.

Only one respondent—the validation questionnaire from Greece—provided differentiated ratings, consistently assessing all six challenges as high priority (ranging from 4-5 to 5). According to this assessment, **limited professional development pathways**, **discontinuity from education to employment**, and **underutilization of successful women mentors** received the highest ratings (5 across all dimensions), while **lack of structured mentoring frameworks** and **weak peer support networks** were rated slightly lower but still high (4-5). This single differentiated response suggests that when respondents do engage meaningfully with these challenges, they perceive all of them as critical issues requiring substantial blueprint attention. The uniform high ratings from the validation questionnaire, combined with the "all boxes checked" pattern from other respondents, may paradoxically indicate genuine consensus that mentoring and career support challenges are pervasive and interconnected, though the data collection method makes it impossible to establish clear prioritization or identify which challenges are most urgent across different national contexts.

### 2.4.3 Missing Challenges

Only two out of eight respondents (25%) identified missing challenges in the Axis C framework, representing the lowest response rate across all axes. The two challenges identified address fundamental structural issues rather than programmatic gaps. One respondent highlighted the problem of low women's labour force participation rates, particularly attributing this to childcare responsibilities—a challenge that extends beyond traditional mentoring and career support to encompass work-life balance policies, accessible childcare infrastructure, and family support systems. The second respondent identified a lack of knowledge about mentoring embedded in institutional guidelines, pointing to the absence of clear frameworks, standards, or protocols that would guide organizations in establishing and maintaining effective mentoring programs.

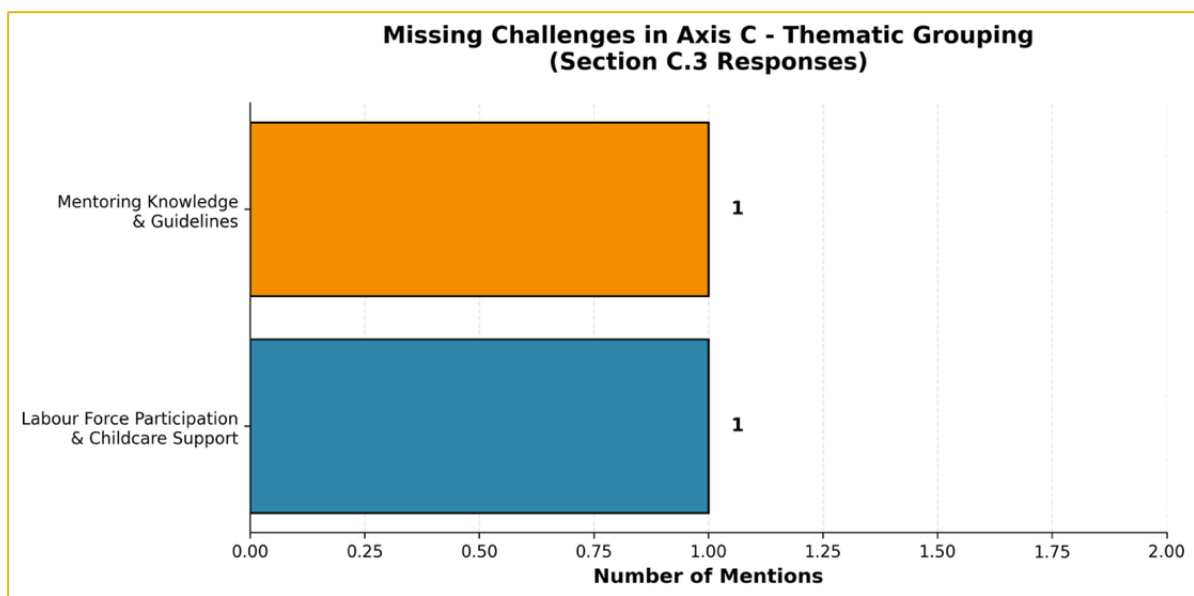


Figure 4. Missing challenges in Axis C

The minimal response to this section is significant and may indicate several possibilities: the original Axis C framework may be perceived as relatively comprehensive compared to other axes, respondents may lack familiarity with mentoring and career support best practices to identify what is missing, or there may be general uncertainty about what career support systems should encompass. The two challenges that were identified, however, reveal critical gaps at the policy and institutional levels—suggesting that while the framework may adequately address individual-level mentoring relationships and career guidance activities, it may underemphasize the structural enablers (childcare support, labour market policies) and institutional capacity (guidelines, knowledge frameworks) necessary for mentoring systems to function effectively. This points to a need for Axis C to more explicitly address the ecosystem of support required for sustainable mentoring and career development, rather than focusing solely on mentoring programs themselves.

### 3.4.4 Priority Actions

Only two out of eight respondents (25%) provided priority actions for Axis C, with six respondents (75%) leaving this section completely blank—the highest non-response rate across all priority action sections. The priority actions identified by the two respondents cluster around five themes, with mentoring knowledge and capacity building emerging as the only priority mentioned by both. These respondents emphasized the need to address fundamental gaps in mentoring capacity: lack of knowledge about how to mentor effectively, lack of confidence among potential mentors to take on mentoring roles,

and the need for counseling support for both mentors and mentees, particularly regarding leadership development and role modeling.

Additional priorities included skills building and professional development programs, creating network opportunities specifically within STEM fields to connect women with peers and professionals, and addressing motivational barriers such as lack of interest in mentoring or being mentored. The extremely low response rate to this section is particularly striking given that Axis C addresses a concrete, actionable domain where specific interventions could be readily identified. This may indicate that respondents found it difficult to translate the identified challenges into specific priority actions, lacked familiarity with effective mentoring program design, or experienced survey fatigue by this point in the questionnaire. The priorities that were identified, however, point to a clear need for capacity building at the individual level—ensuring that potential mentors have the knowledge, confidence, and motivation to engage, and that mentees have access to structured skill development and professional networks. The emphasis on addressing "lack of interest" also suggests that beyond building capacity, there may be a need to make the value proposition of mentoring more compelling for both mentors and mentees.

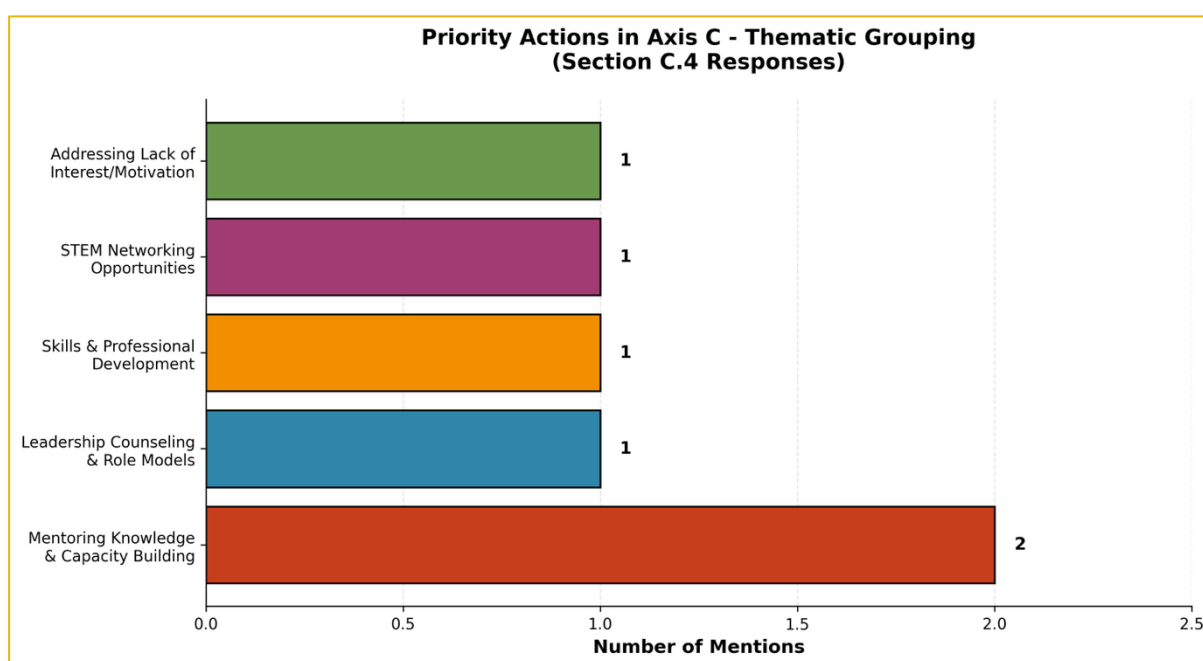


Figure 5. Priority actions in Axis C

### 3.4.5 Revised Axis C Structure

Based on the validation questionnaire responses, **Axis C: Mentoring & Career Support** requires fundamental reformulation to address systemic infrastructure gaps, capacity building needs, and work-life integration challenges that were largely absent from respondent feedback but critically identified in the limited responses received. The extremely low engagement with this axis (75% non-response rate on priority actions, minimal differentiation in challenge ratings) suggests either that the framework lacks clarity about what mentoring systems should encompass, or that respondents were uncertain about mentoring best practices and could not meaningfully assess gaps.

The revised structure should expand from individual-level mentoring relationships to an ecosystem approach including: (1) **Mentoring Knowledge and Capacity Building** as a foundational new component addressing the lack of knowledge about mentoring, confidence deficits among potential mentors, clear guidelines and protocols for mentoring programs, and training frameworks for effective mentor-mentee relationships; (2) **Work-Life Integration Support** recognizing that career support

cannot be separated from childcare responsibilities and labour force participation barriers, requiring explicit inclusion of childcare facilities, flexible work arrangements, and family-friendly policies as part of career support infrastructure; (3) **Leadership Development and Role Modeling** as an enhanced component going beyond identifying role models to include structured counseling for leadership pathways, visibility strategies for women in leadership, and succession planning initiatives; (4) **Professional Networks and STEM Connections** emphasizing the creation and facilitation of peer support networks, industry connections, and community-of-practice development specific to green energy and technology sectors; and (5) **Institutional Frameworks and Guidelines** establishing clear standards, protocols, and quality assurance mechanisms for mentoring programs, including how to consolidate fragmented facilities and coordinate government initiatives to promote systematic rather than ad-hoc mentoring support.

The reformulated axis must address the critical gap revealed by the validation responses: while the original framework identifies what mentoring programs should do (structured frameworks, career guidance, professional development, peer support, transition support, mentor utilization), it may not adequately address who will deliver these services, what knowledge and capacity they need, what structural supports (childcare, work-life balance) enable participation, and how to motivate engagement when "lack of interest" is identified as a barrier. This requires shifting from a program-centric to an ecosystem approach that ensures the infrastructure, capacity, incentives, and enabling conditions for sustainable mentoring and career support systems.

## 3.5 Axis D - Policy and Governance

### 3.5.1 Framework Completeness

Based on the validation questionnaire responses, Axis D demonstrates strong framework coverage with only one partner identifying a specific gap. Three respondents confirmed the framework was comprehensive with no missing elements, while four did not mark their assessment. The single identified gap highlighted the absence of governmental initiatives for implementing laws through specific acts for gender equality, particularly noting issues with overlapping policies, lack of implementation of foreign actions included in plans, need for monitoring and evaluation, and the politicization of gender policies. Additional concerns raised included the need for funding support, cross-sectoral collaboration between education and labour markets, lack of stakeholder collaboration, improved community and policy enforcement, lack of continuity in long-term monitoring of policy implementation, and low quality or effectiveness of existing strategies and policies. These observations suggest that while the policy and governance framework is largely comprehensive in identifying the main barriers, there is a critical need to strengthen the focus on policy enforcement mechanisms, implementation monitoring, cross-ministerial coordination, and sustained evaluation systems to ensure that policy commitments translate into tangible change.

### 3.5.2 Challenges Assessment

The challenge assessment for Axis D reveals strong consensus on the critical nature of policy and governance barriers, with most respondents assigning high relevance, severity, and blueprint attention ratings to all five challenges. The lack of inclusive VET policy reforms emerged as a particularly pressing concern, consistently receiving maximum ratings for its relevance to the project context, its severity as an obstacle to gender equality, and the urgent attention it requires in the Blueprint. Weak monitoring and accountability mechanisms also garnered substantial recognition across all three dimensions, reflecting widespread concern about the gap between policy commitments and their effective implementation. Policy gaps at multiple levels—spanning local, regional, national, and EU frameworks—were similarly identified as highly relevant and severe, with notably elevated attention ratings suggesting stakeholders view this as requiring immediate strategic intervention. Limited incentives for institutional change and insufficient gender mainstreaming strategies received



consistently high assessments, though with slightly more variation in ratings, indicating that while these barriers are universally recognized, their perceived urgency may vary across different national and organizational contexts. One notable divergence in assessment patterns appeared where a respondent rated most challenges as low in relevance and severity but assigned high blueprint attention to monitoring accountability, policy gaps, and institutional incentives, suggesting a strategic perspective that prioritizes enforcement and implementation mechanisms over policy content reforms. Overall, the assessment demonstrates remarkable alignment in recognizing that policy and governance structures represent fundamental systemic barriers requiring comprehensive Blueprint attention, with particular emphasis on strengthening implementation, monitoring, and multi-level coordination mechanisms to translate existing policy frameworks into tangible gender equality outcomes.

### 3.5.3 Missing Challenges

Respondents identified several critical gaps in the Axis D framework that extend beyond the original five challenges. The most prominent theme concerned policy implementation and enforcement, with observations highlighting that existing laws and policies are often not followed or effectively implemented, and that there is a concerning disconnect between policy commitments and actual practice. Cross-ministerial and cross-sectoral coordination emerged as another significant gap, with emphasis on the fragmented nature of efforts when education, labour, and gender equality policy bodies fail to collaborate effectively, resulting in reduced impact and missed opportunities for synergy between educational institutions and the labour market. Resource allocation issues were raised from multiple perspectives, including overall funding constraints for education and vocational orientation, budget planning that fails to assess differential impacts on women and men, and the specific absence of childcare facilities for women with young children entering technical fields. The quality and sustainability of policy frameworks also surfaced as concerns, with questions about the effectiveness of existing strategies, the need for frameworks assessment, and the lack of long-term continuity in monitoring policy implementation. Additional gaps included the politicization of gender policies which undermines their credibility and effectiveness, insufficient attention to minority groups such as low-income women and women with disabilities who face compounded barriers, and the absence of promotion mechanisms for mentorship and role models within policy structures. These missing elements collectively point to a need for the Blueprint to address not only what policies should exist, but crucially how they should be implemented, funded, monitored, and sustained across different levels and sectors to achieve meaningful gender equality outcomes in the green energy transition.

### 3.5.4 Priority Actions

The priority actions identified for Axis D reveal a strategic focus on transforming policy frameworks from aspirational documents into effective implementation mechanisms. Monitoring and accountability emerged as a central priority, with specific recommendations for regular indicator tracking at six-month intervals extending over two years to ensure continuous progress assessment and timely course corrections. Funding mechanisms received substantial emphasis, particularly the need for state funding directed toward human resources that can drive inclusive effectiveness at both institutional and individual levels, alongside gender-responsive budget planning that assesses differential impacts on women and men rather than remaining gender-blind in resource allocation. Implementation quality surfaced as a critical priority, with observations that even where gender policies exist, they frequently suffer from poor implementation, inadequate funding, or absent enforcement mechanisms that undermine their potential impact. Strategic approaches to institutional change featured prominently, including calls for top-bottom strategies that bridge gaps between policy levels and create coherent pathways from high-level commitments to ground-level practice, as well as the development of effective incentives that motivate institutions to embrace gender equality beyond mere compliance. The connection between education and labour market emerged as a priority area requiring focused policy attention, including explicit emphasis on career pathways for women in green energy and stronger cross-sectoral collaboration mechanisms.

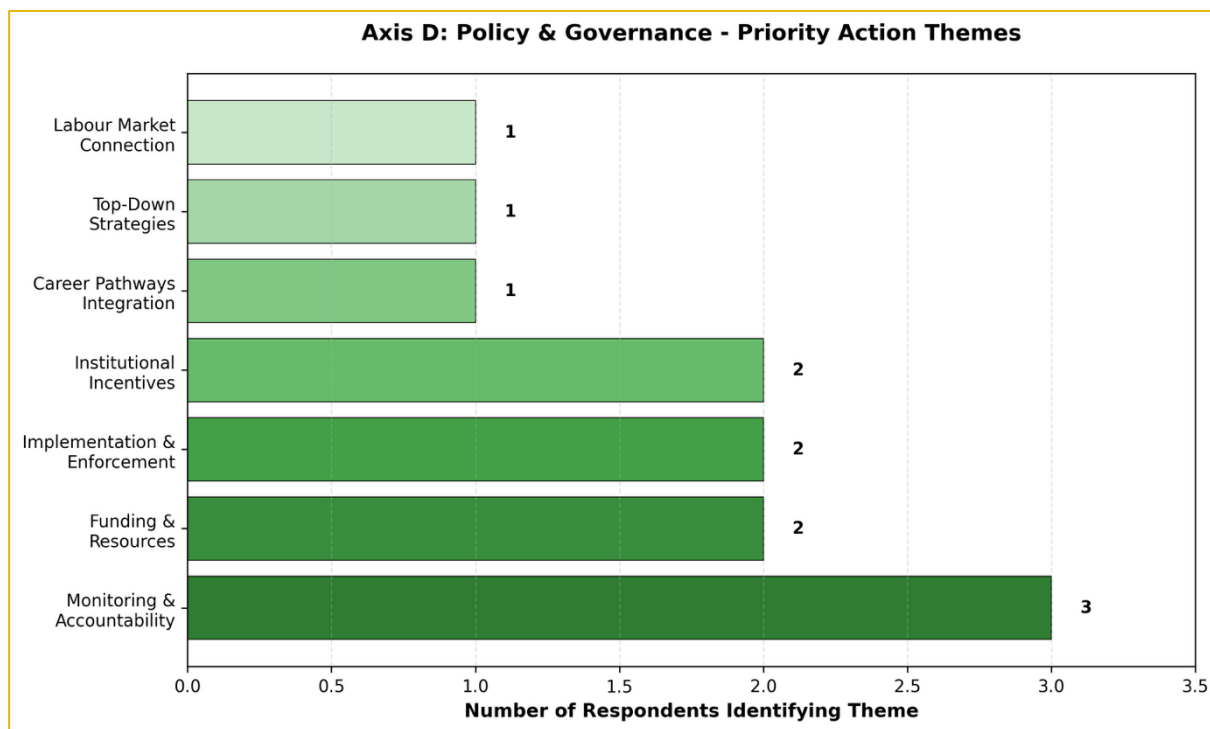


Figure 6. Priority actions in Axis D

### 3.5.5 Revised Axis D Structure

Based on the validation questionnaire responses, Axis D demonstrates strong framework coverage with most respondents finding it comprehensive or not marking specific gaps. One specific missing element was identified concerning the absence of governmental initiatives for implementing laws through concrete acts for gender equality, particularly highlighting issues with overlapping policies, lack of implementation of foreign actions included in plans, insufficient monitoring and evaluation, and the politicization of gender policies. Additional gaps raised included the need for cross-ministerial coordination between education, labour, and gender equality policy bodies to reduce fragmented efforts, funding support for education and vocational orientation, provision of childcare facilities for women with young children, attention to minority groups such as low-income women and women with disabilities, cross-sectoral collaboration between education and labour markets, budget constraints and gender-blind resource allocation, lack of stakeholder collaboration, improved community and policy enforcement mechanisms, lack of continuity in long-term monitoring of policy implementation, and concerns about the low quality and effectiveness of existing strategies and policies. These observations suggest that while the policy and governance framework adequately identifies the main systemic barriers, there is a critical need to strengthen the focus on policy enforcement mechanisms, implementation monitoring, cross-ministerial coordination, targeted support for underserved populations, and sustained evaluation systems to ensure that policy commitments translate into tangible change rather than remaining aspirational documents disconnected from practice.

## 3.6 Axis E - Community and Industry Engagement

### 3.6.1 Framework Completeness

Based on the validation questionnaire responses, Axis E demonstrates limited engagement with the completeness assessment, as most respondents did not mark their evaluation of the framework's comprehensiveness. One respondent confirmed the framework was comprehensive with no additional



challenges identified, while another identified a specific gap regarding industry engagement barriers for women with childcare responsibilities and women with disabilities. This missing element highlights the intersection of workplace inclusion with practical barriers that disproportionately affect women's ability to enter and remain in technical green energy roles, pointing to the need for the Blueprint to explicitly address how industry engagement strategies must account for diverse support needs. The absence of specific missing challenges from other respondents, coupled with the high number of unmarked assessments, suggests either that the framework adequately captures the main community and industry engagement barriers or that this axis may have received less focused attention during the validation process compared to other axes. The identified gap emphasizes that inclusive industry engagement requires going beyond general diversity initiatives to address concrete structural barriers such as childcare provision and accessibility accommodations that enable women with different life circumstances and abilities to fully participate in the green energy transition workforce.

### 3.6.2 Challenges Assessment

The challenge assessment for Axis E received limited substantive evaluation, with one respondent providing specific ratings that consistently assigned high relevance, severity, and blueprint attention scores across all eight challenges. Industry stereotypes and gender bias, limited employer engagement and inclusive workplaces, lack of networking and role models, and inadequate incentives for industry participation were all rated at maximum levels for relevance and severity, with correspondingly high blueprint attention requirements. Weak community outreach and collaboration, cultural and social norms, work-life balance challenges, and unequal access to resources and opportunities received slightly more varied but still elevated ratings across all three dimensions. This pattern of consistently high assessments across all community and industry engagement barriers suggests that respondents view this axis as addressing deeply interconnected and mutually reinforcing challenges rather than isolated issues, with industry culture, community attitudes, workplace structures, and support systems all requiring comprehensive Blueprint intervention to create an ecosystem that genuinely welcomes and sustains women's participation in green energy careers.

### 3.6.3 Missing Challenges

Respondents did not identify additional missing challenges for Axis E, suggesting that the eight barriers included in the framework—industry stereotypes and gender bias, limited employer engagement and inclusive workplaces, weak community outreach and collaboration, lack of networking and role models, cultural and social norms, work-life balance challenges, unequal access to resources and opportunities, and inadequate incentives for industry participation—adequately capture the key community and industry engagement barriers affecting women's participation in the green energy transition. The absence of proposed additions indicates that the framework successfully encompasses the multi-layered challenges spanning workplace culture, community attitudes, structural supports, and partnership mechanisms that require coordinated intervention.

### 3.6.4 Priority Actions

No more priority actions were specified by respondents for Axis E.

### 3.6.5 Revised Axis E Structure

Based on the validation questionnaire responses, Axis E demonstrates adequate framework coverage with respondents confirming the framework was comprehensive with no additional challenges identified. One specific gap was identified concerning industry engagement barriers for women with childcare responsibilities and women with disabilities, highlighting the intersection of workplace inclusion with practical barriers that disproportionately affect women's ability to enter and remain in technical green energy roles. This missing element points to the need for the Blueprint to explicitly address how industry engagement strategies must account for diverse support needs including childcare provision and accessibility accommodations. The limited identification of gaps suggests that the eight barriers included in the framework—industry stereotypes and gender bias, limited employer engagement



and inclusive workplaces, weak community outreach and collaboration, lack of networking and role models, cultural and social norms, work-life balance challenges, unequal access to resources and opportunities, and inadequate incentives for industry participation—adequately capture the key community and industry engagement challenges affecting women's participation in the green energy transition.

### 3.7 Conclusions

The validation workshop demonstrated strong consensus on the critical nature of barriers to women's participation in the green energy transition, with respondents consistently assigning high relevance and severity ratings across most challenges. Axes A (Access and Participation) and D (Policy and Governance) received the most robust validation, with framework completeness largely confirmed and only targeted gaps identified concerning early educational interventions, cross-ministerial coordination, and policy implementation mechanisms. In contrast, Axes B (Curriculum and Pedagogy Reform) and C (Mentoring and Career Support) revealed more substantial framework gaps, particularly regarding the absence of gender-responsive curriculum content analysis, pedagogical approaches, mentoring program structures, and long-term career support mechanisms, indicating these areas require deeper development in the Blueprint.

A critical pattern emerged across all axes: **while respondents effectively identified barriers and assessed their severity, the translation of these challenges into concrete priority actions proved more difficult, with many priority action sections left incomplete.**

This suggested that the Blueprint development process must invest substantial effort in moving from problem identification to actionable intervention design. Additionally, recurring themes transcended individual axes, including the need for cross-sectoral collaboration between education and labour markets, attention to underserved populations such as women with disabilities and childcare responsibilities, strengthened monitoring and accountability mechanisms to bridge the gap between policy commitments and implementation, and sustained funding structures to ensure long-term continuity of gender equality initiatives beyond project-based interventions.

The validation process also highlighted the practical constraints of workshop-based data collection, with response quality and completeness varying across axes and questionnaire sections, reflecting both time limitations and the cognitive demands of comprehensive framework assessment. Axis E (Community and Industry Engagement) received minimal detailed evaluation despite its strategic importance. These limitations underscored the need for complementary validation methods: the on line survey and the structured interviews.

The following table summarises the changes that were identified by the validation workshop.



Blueprint Axis	Initial Framework Assessment	Validation Workshop Findings	Required Blueprint Refinements
<b>Axis A: Access &amp; Participation</b>	<ul style="list-style-type: none"> <li>• Four initial barriers identified</li> <li>• Focus on educational access</li> </ul>	<ul style="list-style-type: none"> <li>• Early-stage outreach missing</li> <li>• Government initiatives absent</li> <li>• Economic &amp; financial barriers</li> <li>• Family/community influences</li> <li>• Support systems inadequate</li> </ul>	<ul style="list-style-type: none"> <li>• Seven enhanced components needed</li> <li>• Intersectional analysis for marginalized groups</li> <li>• Multi-level approach (individual, institutional, systemic)</li> </ul>
<b>Axis B: Curriculum &amp; Pedagogy Reform</b>	<ul style="list-style-type: none"> <li>• Four respondents confirmed adequacy</li> <li>• Core structure validated</li> </ul>	<ul style="list-style-type: none"> <li>• Gender-responsive content analysis missing</li> <li>• Pedagogical approaches need expansion</li> </ul>	<ul style="list-style-type: none"> <li>• Moderate Refinement</li> <li>• Strengthen curriculum content analysis</li> <li>• Expand teaching methodology assessment</li> <li>• Review learning materials</li> </ul>
<b>Axis C: Mentoring &amp; Career Support</b>	<ul style="list-style-type: none"> <li>• Basic structure present</li> <li>• Support programs identified</li> </ul>	<ul style="list-style-type: none"> <li>• Mentoring program structures undefined</li> <li>• Long-term career support mechanisms missing</li> <li>• Career guidance effectiveness unclear</li> </ul>	<ul style="list-style-type: none"> <li>• Design comprehensive mentoring frameworks</li> <li>• Establish long-term support pathways</li> <li>• Define career progression mechanisms</li> </ul>
<b>Axis D: Policy &amp; Governance</b>	<ul style="list-style-type: none"> <li>• Framework largely confirmed</li> <li>• Core elements recognized</li> </ul>	<ul style="list-style-type: none"> <li>• Cross-ministerial coordination absent</li> <li>• Policy implementation mechanisms weak</li> <li>• Budget allocations undefined</li> </ul>	<ul style="list-style-type: none"> <li>• Robust Treatment Needed</li> <li>• Expand regulatory frameworks</li> <li>• Strengthen implementation mechanisms</li> <li>• Enhance enforcement capacity</li> </ul>
<b>Axis E: Community &amp; Industry Engagement</b>	<ul style="list-style-type: none"> <li>• Eight barriers identified</li> <li>• Framework appeared adequate</li> </ul>	<ul style="list-style-type: none"> <li>• Civil society partnerships missing</li> <li>• Multi-stakeholder coordination weak</li> </ul>	<ul style="list-style-type: none"> <li>• Complementary methods needed</li> <li>• Deeper stakeholder consultation</li> <li>• Enhanced collaboration frameworks</li> </ul>

Table 2. Validation Workshop impact on the Blueprint

## 4. On line Survey analysis

### 4.1 On line survey methodology

The online survey was conducted using the European Commission's EU Survey platform, a secure online questionnaire tool designed for cross-border data collection (survey identifier: 418de382-abb1-97f6-d303-230d6fd6f862). While the validation workshop focused on identifying in-depth needs and assessing the completeness of the preliminary Blueprint framework through intensive co-design dialogue, the online survey served a complementary methodological purpose: to identify concrete change priorities, actionable goals, and specific implementation pathways necessary to transform the validated framework into an operational strategy.

Where the validation workshop effectively identified barriers and assessed their severity but struggled to translate challenges into concrete priority actions, the online survey complemented this by providing quantitative prioritization of change strategies and specific implementation pathways. The broader stakeholder base (49 respondents across diverse organizational types versus 8 workshop participants) enabled the survey to move beyond problem identification toward actionable intervention design, generating concrete recommendations for multi-stakeholder partnerships, budget allocation frameworks, accountability mechanisms, and game-changing innovations such as family engagement programs and industry sponsorship models.

The survey targeted a broader stakeholder base across the GaTE project partner countries, including VET institutions, green energy companies, government agencies, civil society organizations, and individual professionals engaged with gender equality and green energy transition. The questionnaire structure was designed to gather both quantitative data through Likert-scale ratings and qualitative insights through open-ended responses, covering six key dimensions: demographic and professional profile of respondents, change priorities for achieving gender equality in green energy VET, success indicators and needed educational interventions, barriers to change implementation, resource allocation and accountability mechanisms, and innovative collaborative approaches.

The initial data collection revealed significant geographic concentration, with disproportionate response rates from certain partner countries that could potentially skew the findings and limit the generalizability of results across the diverse European contexts that the Blueprint aims to address. To mitigate this geographic bias and ensure more balanced representation across partner countries, a stratified sampling approach was applied to the final analytical dataset. This methodological adjustment allowed for more equitable weighting of perspectives from different national contexts, regulatory frameworks, and VET systems, thereby strengthening the validity of cross-country comparisons and ensuring that the Blueprint development process incorporates diverse European perspectives rather than being dominated by a single national context. The complete survey questionnaire is provided in **Annex II**.

The following analysis presents the survey findings in a structured sequence that moves from respondent characteristics through strategic priorities to implementation mechanisms. The presentation begins with the demographic and professional profile of participants to establish the stakeholder composition and representativeness of the sample. It then examines stakeholders' prioritization of transformative changes, their assessment of success metrics and educational interventions, and their identification of primary obstacles to implementation. The analysis concludes with an examination of accountability frameworks and resource allocation preferences, before synthesizing the key findings and their implications for Blueprint refinement.

## 4.2 Demographics

The online survey achieved strong participation across the GatE project partner countries. Greece emerged as the leading contributor with 40% of respondents, followed closely by Spain with 35%, reflecting robust engagement from these two core partner nations. Belgium contributed 15% of the sample, demonstrating solid participation from the Western European context. An additional 10% of responses came from "Other" countries, indicating some reach beyond the primary project partners and suggesting broader

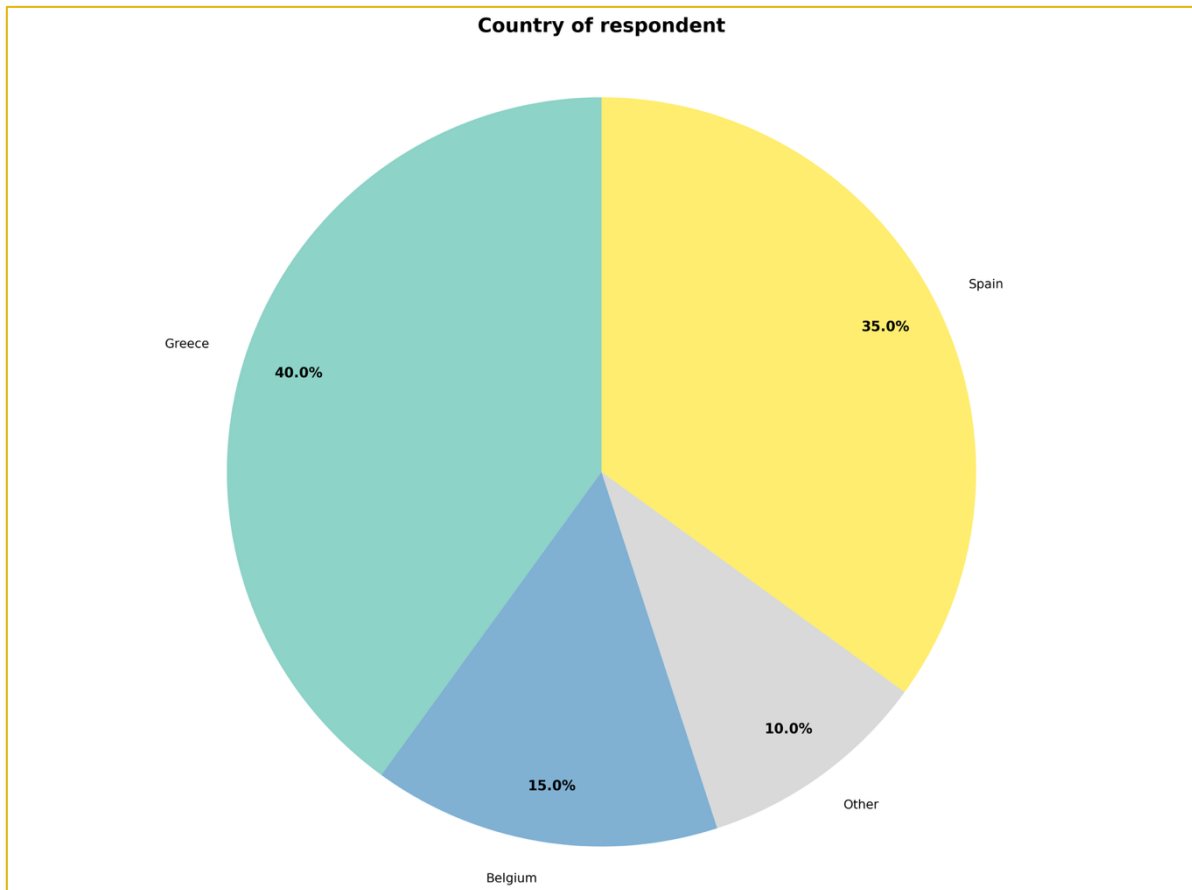


Figure 7. On line survey: country of respondents

European interest in gender equality issues within the green energy transition. This geographic distribution aligns well with the project's multi-country approach and provides valuable comparative insights across different national contexts, regulatory frameworks, and VET systems. However, the concentration of responses in Greece and Spain (collectively representing 75% of the sample) suggests that findings may be particularly reflective of Southern European perspectives and contexts, which should be considered when generalizing results across the broader European landscape.

The **gender distribution** of survey respondents reveals a significant female majority, with women comprising 71.1% of the sample compared to 28.9% male respondents. This pronounced gender imbalance, while seemingly counterintuitive for a sector traditionally dominated by men, is actually highly relevant and valuable for the GatE project's objectives. The strong female representation likely

reflects several factors: the survey's targeted outreach to women already engaged or interested in green energy careers, the self-selection of respondents who are particularly concerned with gender equality issues in the sector, and potentially the composition of stakeholder groups (such as VET educators, gender equality advocates, and policy professionals) who are more actively engaged with the project's themes. This gender distribution ensures that women's voices, perspectives, and lived experiences—which are central to understanding barriers and designing effective interventions—are well-represented in the data. However, the relatively lower male participation (approximately 1 in 4 respondents) suggests that future outreach efforts might benefit from strategies to engage more male stakeholders, as their perspectives on organizational culture, recruitment practices, and systemic barriers are equally valuable for developing comprehensive gender equality strategies in the green energy transition.

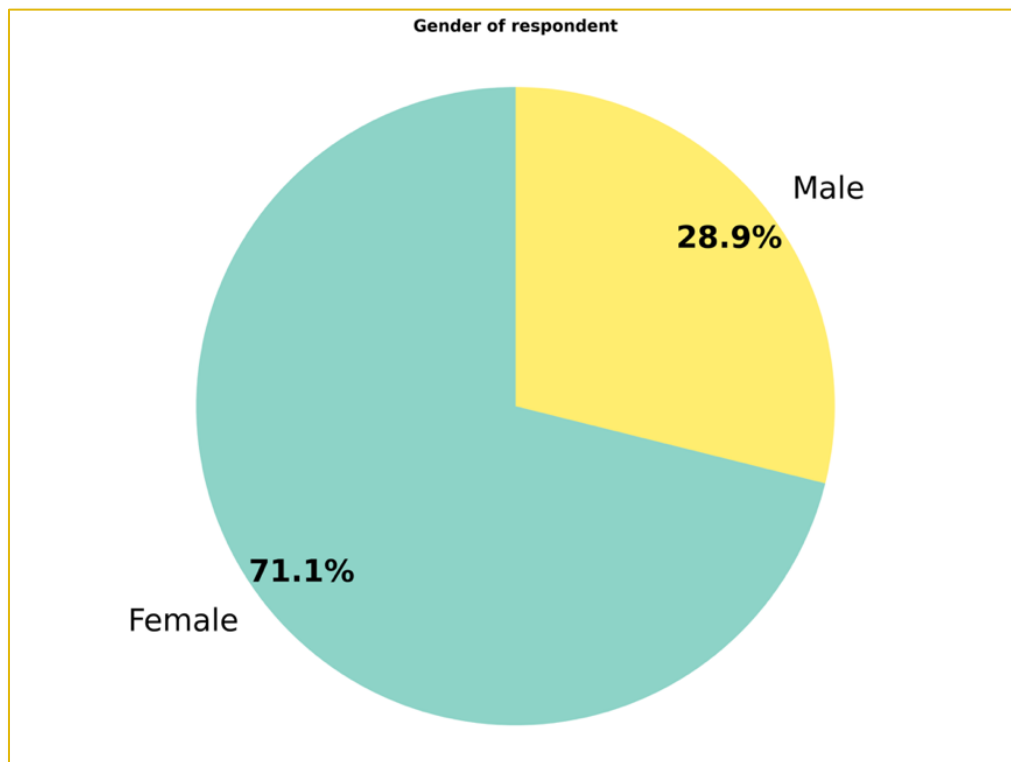


Figure 8. On line survey: gender of respondents

The survey successfully captured a diverse and well-balanced representation of **stakeholder types**, reflecting the multi-sectoral nature of the green energy transition ecosystem. Industry representatives constitute the largest segment, with Energy Companies from the non-green sector (24.4%) and Green Energy Companies (22.2%) collectively accounting for nearly half of all respondents (46.6%), providing crucial employer perspectives on workforce needs and gender dynamics. The civil society sector is strongly represented through Associations (15.6%) and Non-Profit Organizations (13.3%), totaling 28.9% of respondents, ensuring that advocacy and support organization viewpoints are well-integrated. Educational institutions, which are central to the project's VET focus, contributed 15.6% of responses through both Public VET Institutions (8.9%) and Private VET Institutions (6.7%). Government stakeholders, including Government Agencies (6.7%) and Policy Actors (2.2%), represent 8.9% of the sample, providing policy and regulatory perspectives. This organizational diversity is particularly valuable for developing the Gender-Responsive Blueprint, as it captures insights across the entire value chain—from policy development and education delivery to industry implementation—ensuring that recommended interventions are grounded in the realities and constraints of all key stakeholder groups within the green energy transition landscape.

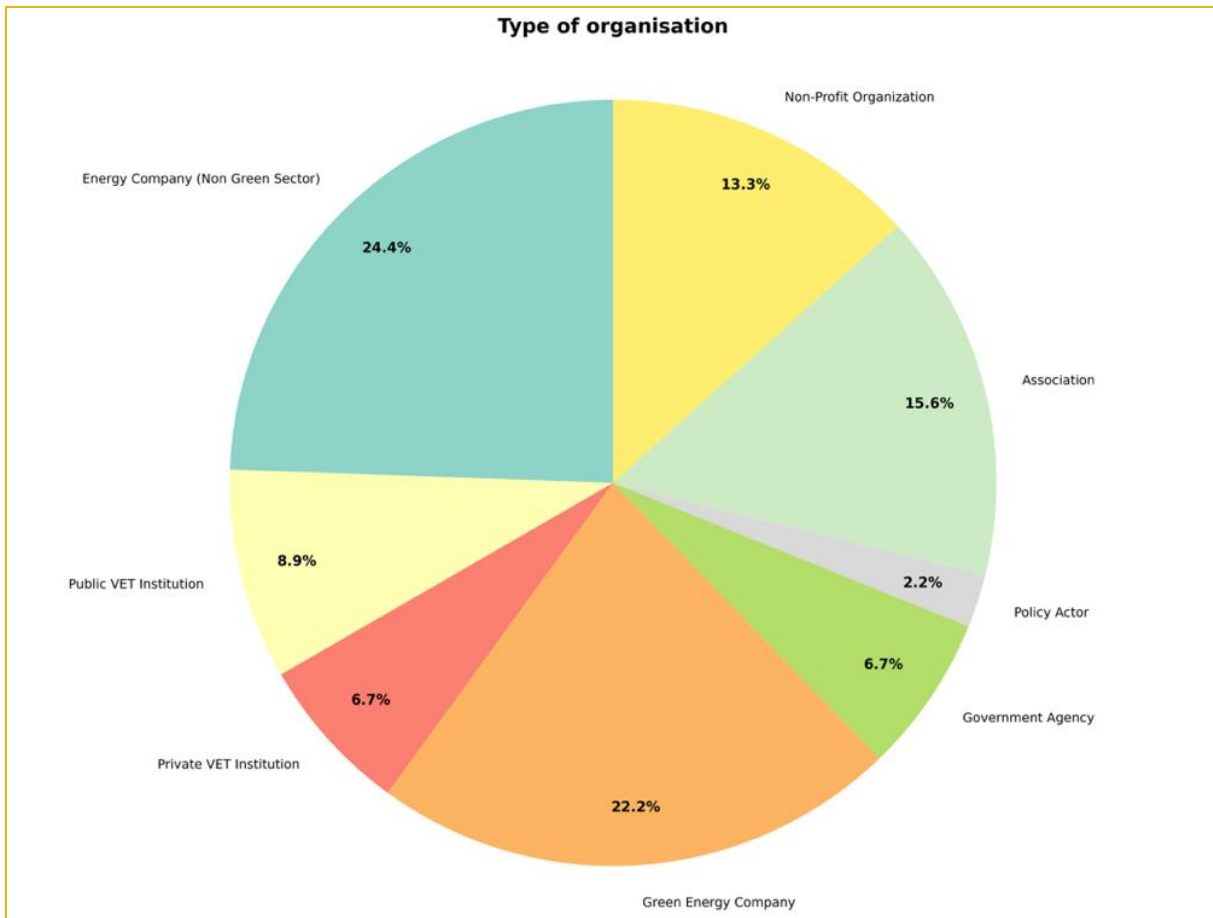


Figure 9. On line survey: type of organisation of the respondents

The **organizational size** distribution reveals a balanced and comprehensive representation across the enterprise spectrum, with Small and Medium Enterprises (SMEs) forming a slight majority at 47.6%, followed closely by Large Companies at 42.9%, and Very Small SMEs contributing 9.5% of the sample. This near-equal split between SMEs (collectively 57.1%) and large organizations (42.9%) is particularly valuable for the GaTE project, as it captures the distinct operational realities, resource constraints, and gender equality challenges faced by organizations of different scales. Large companies typically have more formalized HR policies, dedicated diversity and inclusion resources, and structured training programs, but may face challenges related to organizational inertia and established cultural norms. In contrast, SMEs—which represent the backbone of Europe's economy and a significant portion of the green energy sector's innovation ecosystem—often exhibit greater flexibility and adaptability but may lack dedicated resources for gender equality initiatives, formal mentorship programs, or structured career development pathways. The substantial representation of very small SMEs (9.5%) ensures that micro-enterprise perspectives are also captured, which is crucial given their prevalence in emerging green technology subsectors. This size diversity enables the Blueprint to propose scalable and contextually appropriate interventions that can be adapted to organizations with vastly different capacities, structures, and resource availabilities.

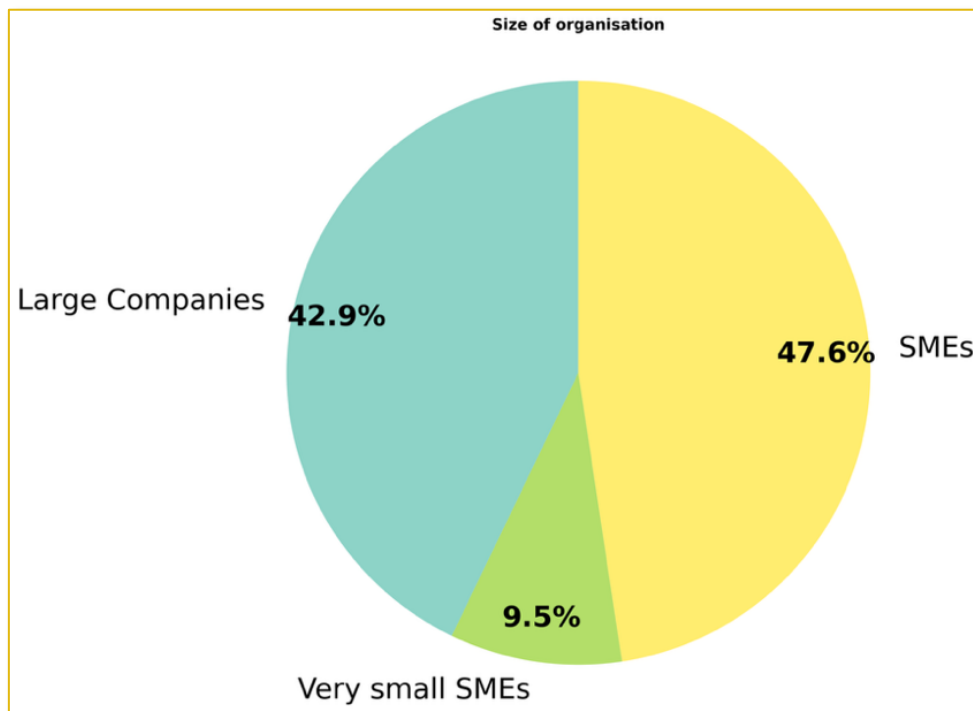


Figure 10. On line survey: size of the organisation of the respondents

The **professional role** distribution demonstrates strong engagement from key decision-makers and practitioners across the gender equality and green energy ecosystem. Industry Representatives/Employers constitute the largest defined category at 34.1%, providing critical insights from those directly responsible for recruitment, training, and workplace culture in energy sector organizations. Notably, an equal proportion (34.1%) selected "Other," suggesting the presence of hybrid roles, emerging professional categories, or specialized positions not captured by predefined options—a finding that may reflect the evolving and interdisciplinary nature of the green energy transition workforce. NGO and Women's Organization Representatives contribute 11.4% of responses, bringing specialized gender equality expertise and advocacy perspectives. VET Institution Administrators/Directors represent 9.1% of respondents, offering leadership perspectives from educational institutions that are central to pipeline development. Policy Makers and Government Officials account for 4.5%, providing regulatory and strategic planning viewpoints. Career Counselors/Advisors (2.3%) and Current VET Students (2.3%) offer frontline guidance and lived experience perspectives, respectively. The relatively low representation of current VET students (2.3%) suggests an opportunity for enhanced engagement with beneficiaries themselves in future research phases. The high "Other" category warrants further investigation to better understand emerging professional roles at the intersection of gender equality, VET, and green energy, which could inform future stakeholder mapping and engagement strategies.

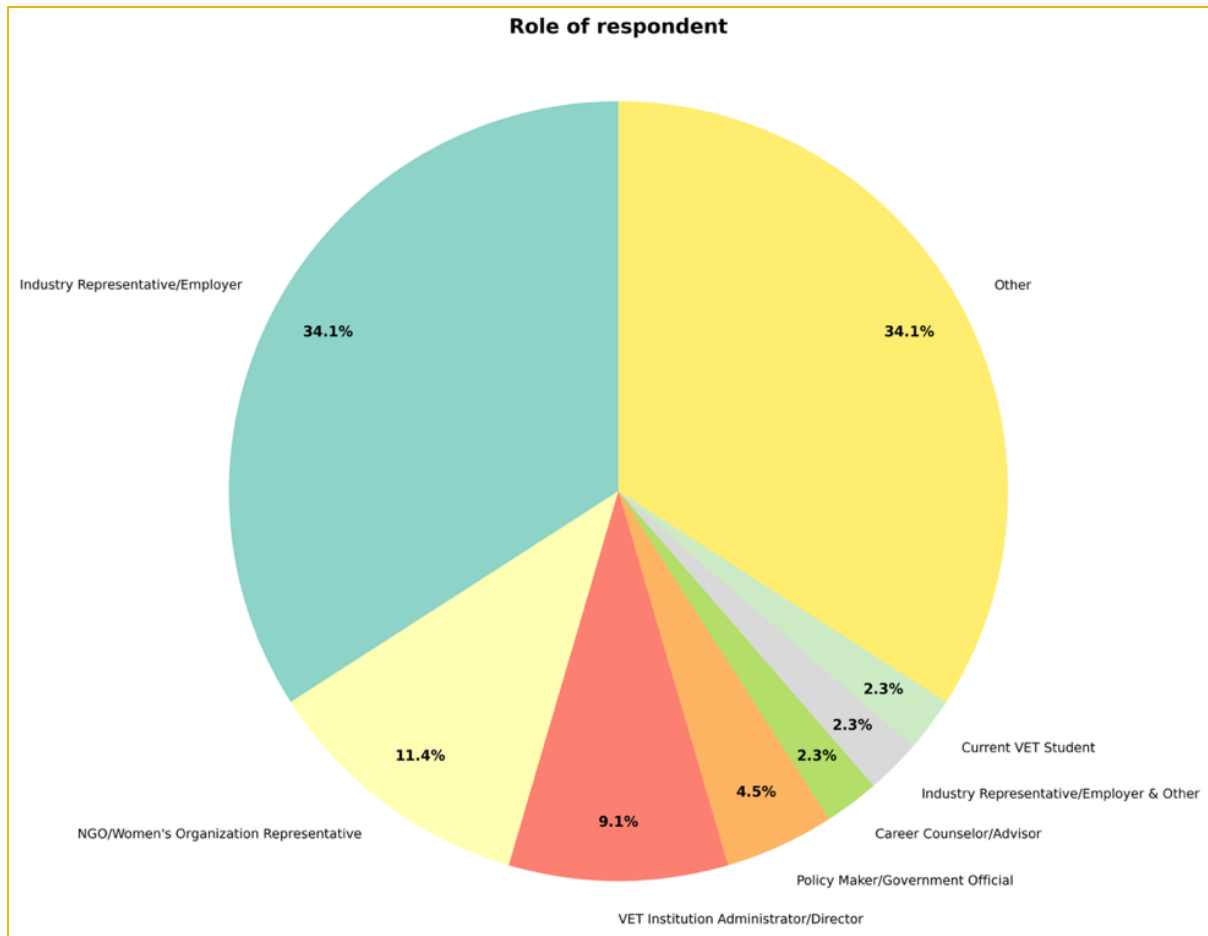


Figure 11. On line survey: role of the respondents withing their organisation

### 4.3 Change Priorities

Respondents identified a diverse yet interconnected set of priorities for achieving gender equality in green energy, with strong consensus emerging around three dominant themes. The most frequently emphasized change involves **early educational intervention and cultural transformation**, with numerous respondents advocating for challenging gender stereotypes and promoting STEM engagement from childhood through adolescence, recognizing that "if we don't change how girls are taught what they can become, then who they ultimately become will not change." A second major theme centers on **embedding gender equality into institutional structures**, including gender-sensitive VET curriculum design, mandatory policy frameworks rather than voluntary initiatives, and integrating inclusivity across all stages of education and training—from recruitment through career guidance. The third significant cluster focuses on **workplace equity and representation**, encompassing equal pay, leadership opportunities, unbiased meritocratic hiring practices, and women's participation in decision-making roles, with several respondents emphasizing the need to "shape the male minds of the industry towards equality and diversity." Additional priorities include increasing visibility of female role models, providing targeted support mechanisms such as mentorship and women-specific training programs, and linking traditionally female-dominated fields like care work to green energy careers. Notably, several respondents advocated for comprehensive, multi-layered approaches that address both structural barriers and cultural mindsets, reflecting an understanding that sustainable gender equality requires simultaneous intervention at educational, organizational, policy, and societal levels rather than single-point solutions.

## 4.4 Success indicators and needed interventions

Based on the survey data, stakeholders rated **equal starting salaries** as the most critical success indicator (4.53), followed closely by **equal representation in leadership roles** (4.42) and **equal job placement rates** (4.33), suggesting that economic parity and career advancement outcomes are perceived as paramount measures of gender equality in green energy transition. The moderately high rating for **inclusive learning environment scores** (4.22) indicates recognition of the foundational role that educational culture plays in supporting women's participation. However, the relatively lower ratings for **equal completion/graduation rates** (4.02) and **gender-balanced teaching staff** (4.07), despite their importance in the educational pipeline, may reflect either stakeholder assumptions that these are secondary outcomes or that they are more challenging to achieve in practice. This ranking pattern reveals a stakeholder emphasis on **outcome-oriented indicators** (salaries, placement, leadership) over **process-oriented indicators** (enrollment, completion, staff composition), which has important implications for prioritizing interventions within the D2.1 Blueprint—particularly suggesting that while the early-stage interventions (Axis A: Access & Participation and Axis B: Curriculum Reform) remain essential, stakeholders place highest value on measurable career and economic outcomes that would be addressed through Axis C (Mentoring & Career Support) and Axis E (Community & Industry Engagement).

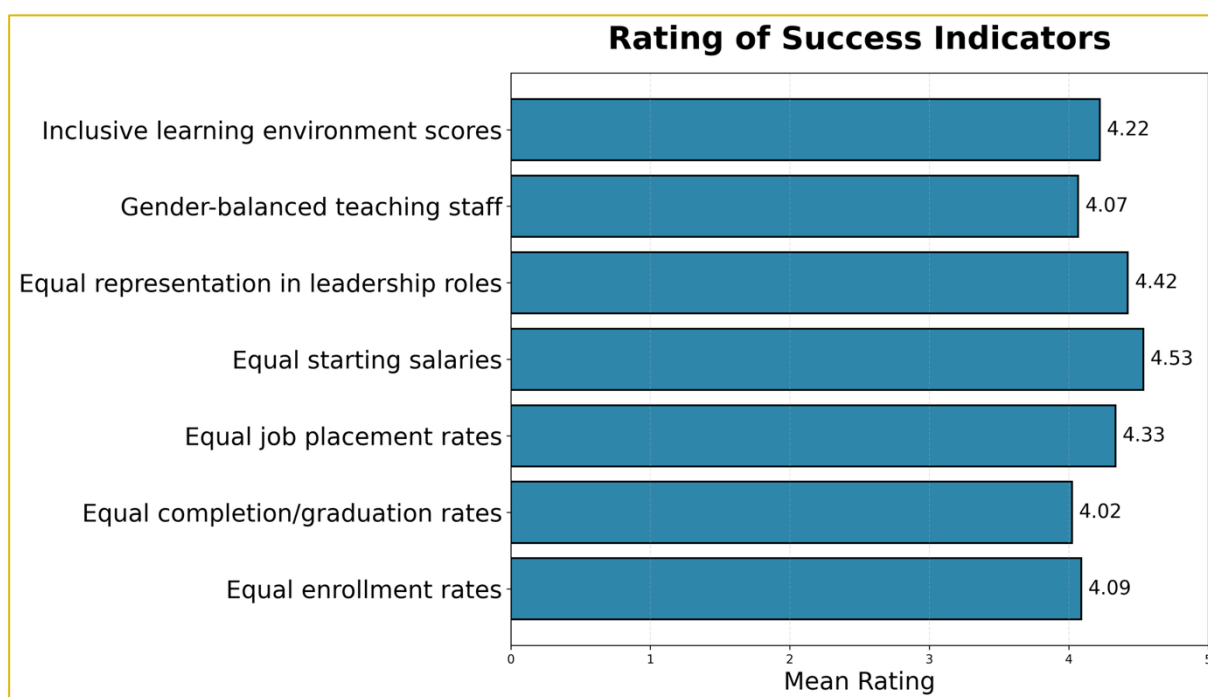


Figure 12. Rating of success indicators

The survey data reveals a clear stakeholder preference for **inclusive structural accommodations and systemic pedagogical reforms** over gender-segregated interventions, with flexible learning schedules emerging as the highest-rated educational intervention (4.41), underscoring the critical importance of addressing practical barriers that disproportionately affect women balancing multiple responsibilities. The clustering of ratings around 3.93-4.00 for gender-sensitive teaching methodologies, mandatory unconscious bias training, and curriculum redesign with female role models indicates strong consensus on the need for comprehensive cultural and pedagogical transformation within existing educational structures. Most notably, the significantly lower rating for women-only preparatory/foundation courses (2.84) suggests stakeholder skepticism toward separatist approaches, potentially reflecting concerns about stigmatization, reduced networking opportunities, or perceptions that such interventions address symptoms rather than root causes. This pattern has important implications for the Blueprint's **Axis B**

**(Curriculum & Pedagogy Reform)**, indicating that interventions should prioritize mainstreaming gender sensitivity across all learning environments and building institutional flexibility rather than creating parallel pathways, while simultaneously investing in educator training to address both explicit curriculum content and implicit bias that shapes classroom dynamics.

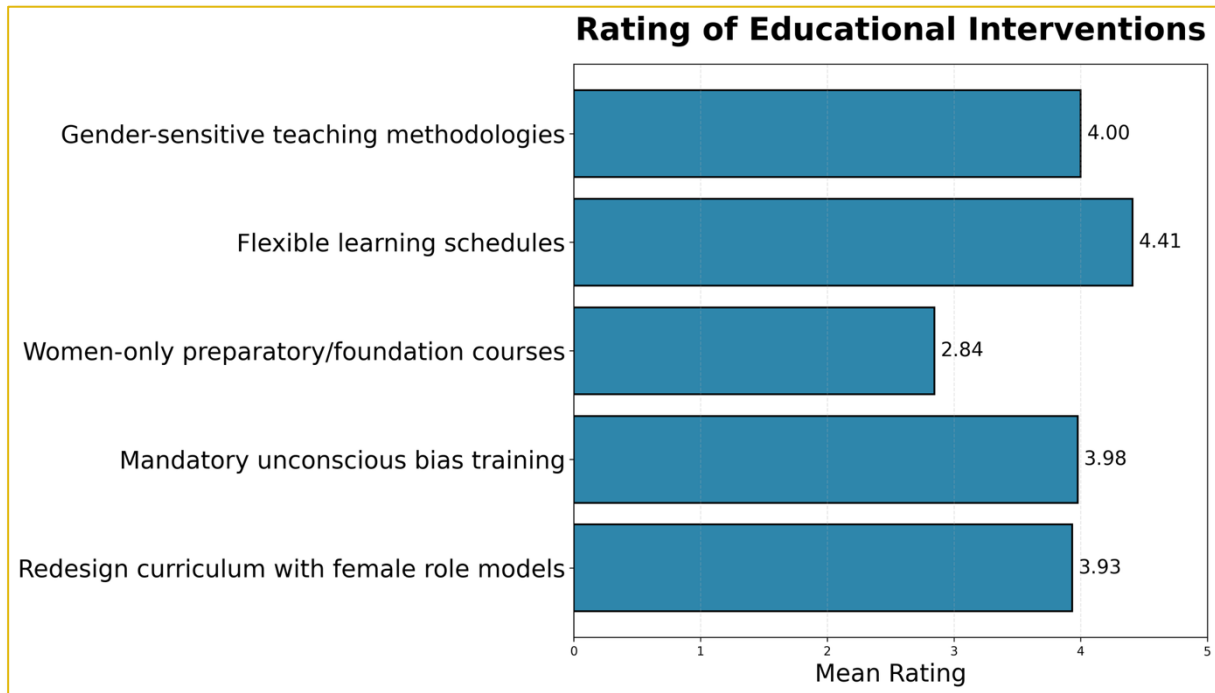


Figure 13. Rating of educational interventions

The tight clustering of ratings (4.04-4.44) across all support systems indicates stakeholder recognition that **effective gender equality interventions require comprehensive, multi-layered support ecosystems** rather than singular solutions. The primacy of childcare support during training (4.44) directly addresses the material reality that caregiving responsibilities remain the most significant practical barrier to women's participation in VET programs, while the strong rating for structured mentorship programs with industry connections (4.33) reflects understanding that sustained career success requires both access and ongoing professional guidance within male-dominated sectors. The high valuation of re-entry programs for career changers (4.20) is particularly significant for the green energy transition context, where many existing workers need reskilling, and suggests that **pathways must accommodate non-linear career trajectories** typical of women's professional lives. The relatively uniform importance assigned to peer networks (4.09) and dedicated career counseling (4.04) alongside more intensive interventions signals that stakeholders view these supports as complementary rather than substitutable. For the Blueprint's **Axis C (Mentoring & Career Support)**, this pattern suggests that interventions must simultaneously address practical barriers (childcare, flexible scheduling), professional development (mentorship, counseling), and community building (peer networks), with particular attention to designing programs that accommodate adult learners transitioning from other sectors—a demographic critical to achieving gender balance in the rapidly expanding green energy workforce.

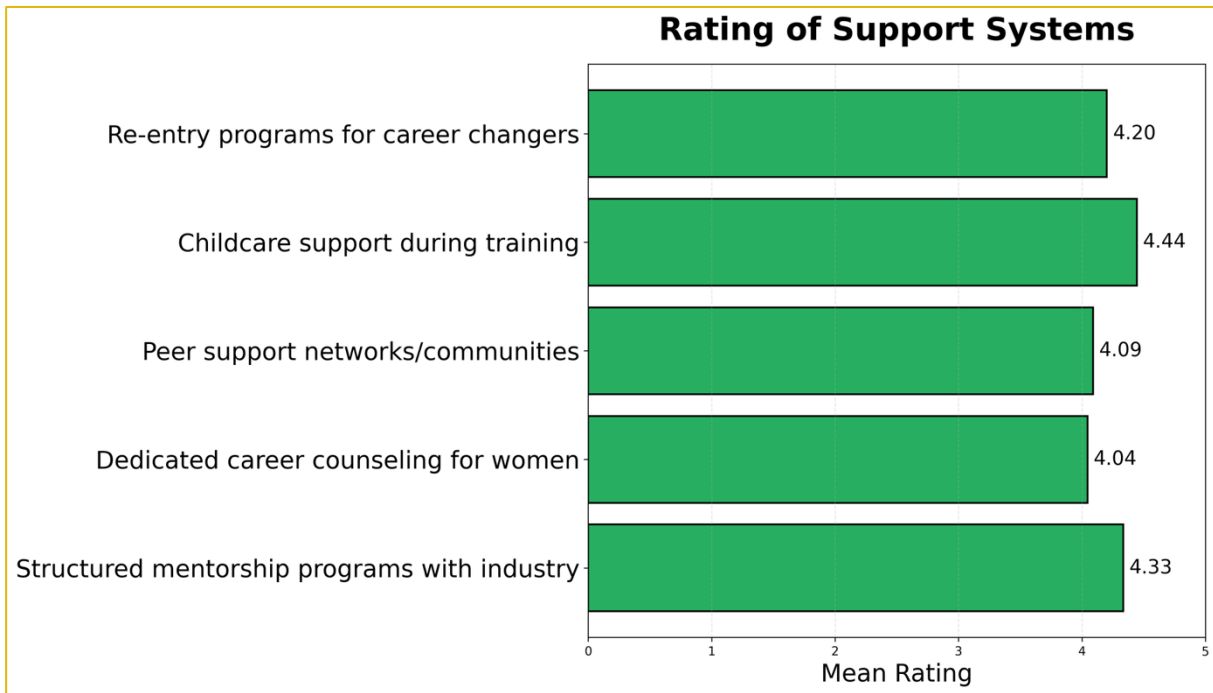


Figure 14. Rating of support systems

The financial incentives data reveals a striking stakeholder preference for **employment-bridging mechanisms over gender-targeted subsidies**, with paid internships with partner companies receiving the highest rating (4.20) and guaranteed job placement upon completion following closely (4.02), while scholarships specifically for women (3.82) and tax incentives for companies hiring female graduates (3.86) garnered notably lower support. This pattern suggests that stakeholders prioritize interventions that simultaneously reduce financial barriers AND create direct pathways to employment through industry partnerships, recognizing that the value proposition extends beyond tuition cost reduction to include practical work experience, professional networking, and employer validation of skills. The relative skepticism toward gender-specific financial instruments may reflect concerns about potential stigmatization, employer perceptions that subsidized hires are "charity cases" rather than competitive talent, or recognition that such incentives do nothing to address workplace culture issues that affect retention. Most significantly, the strong emphasis on paid internships and placement guarantees indicates that **financial security during and immediately after training is paramount**, suggesting that successful interventions must address the opportunity cost of foregone income and the risk of credential investment without employment outcomes. These findings have critical implications for industry engagement and policy advocacy strategies, indicating that multi-stakeholder partnerships should focus on co-creating work-integrated learning opportunities rather than lobbying primarily for financial aid expansion, while simultaneously building employer capacity to support women through the education-to-employment transition.

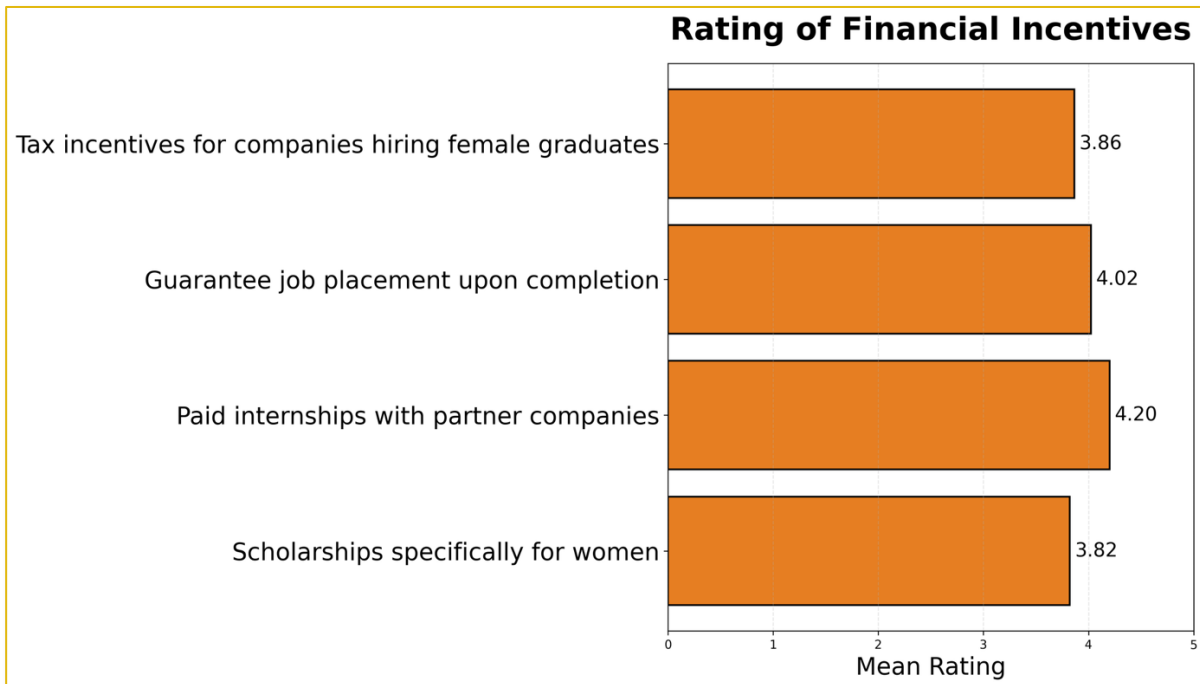


Figure 15. Rating of financial incentives

The implementation likelihood data reveals a concerning **intention-action gap**, with all interventions receiving only moderate likelihood ratings (3.09-3.61) despite their strong endorsement in previous survey sections, and notably, the highest-rated action—creating a gender equality action plan (3.61)—represents the least resource-intensive, most symbolic commitment. The descending likelihood for progressively more concrete actions indicates that **institutional readiness decreases as interventions move from planning to resource allocation and measurable accountability**: establishing partnerships with women's organizations (3.30), allocating dedicated budgets (3.18), and curriculum revision (3.18) all require multi-stakeholder coordination and sustained investment, while setting specific enrollment targets (3.09) represents the most transparent accountability mechanism and receives the lowest implementation confidence. This pattern suggests that while stakeholders intellectually endorse gender equality interventions, they perceive significant institutional barriers—likely including competing budget priorities, organizational inertia, lack of leadership commitment, or concerns about meeting specific targets—that impede translation of aspirations into action. The relatively compressed range of scores (0.52 spread) compared to earlier questions indicates this skepticism is **systemic rather than intervention-specific**, pointing to broader capacity constraints within VET institutions and industry partners. These findings carry critical strategic implications for project implementation: interventions must incorporate explicit change management strategies, secure advance budget commitments, build incremental implementation pathways that demonstrate early wins, and establish external accountability mechanisms to counteract institutional resistance, while advocacy efforts should focus on securing policy mandates that move gender equality from voluntary to required institutional practice.

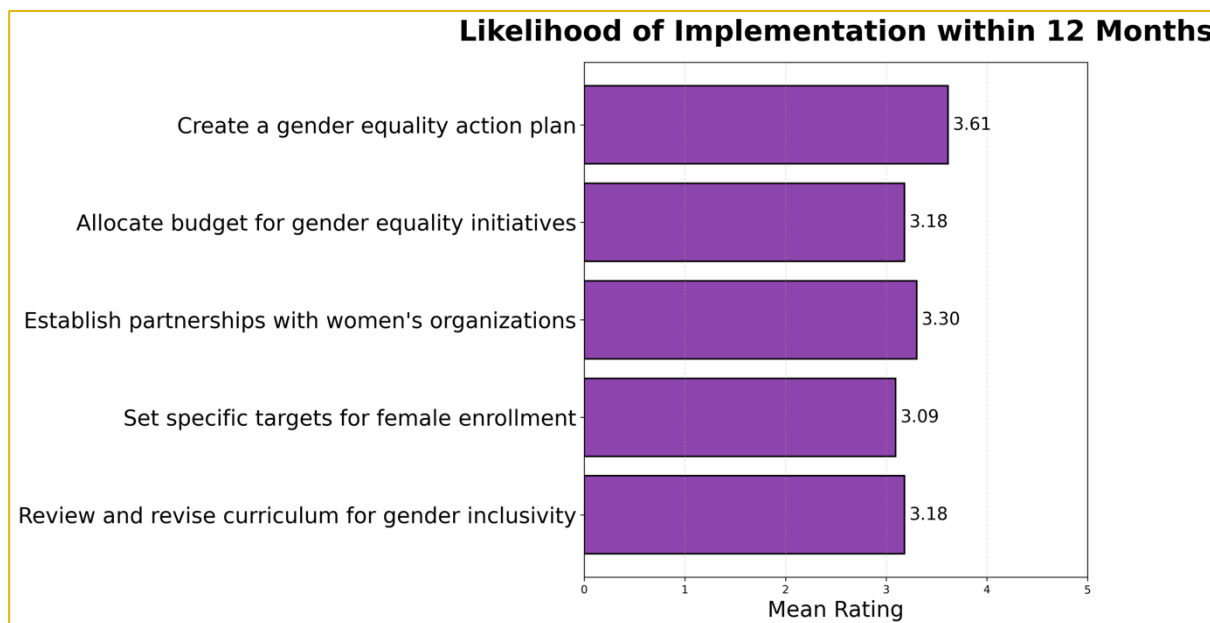


Figure 16. Likelihood of implementation of changes withing 12 months

Analysis of the implementation likelihood within 12 months reveals significant variations across both organization types and sizes. NGO/Women's Organizations demonstrated the highest commitment (4.00 average), particularly strong in curriculum review (4.60) and establishing partnerships (4.40), while VET Institution Administrators showed the lowest likelihood (2.00 average) with particularly weak commitment to curriculum review (1.25), suggesting surprising resistance from traditional educational institutions. "Other" organizations displayed moderate-to-high likelihood (3.51 average) with the most balanced profile across all implementation actions, while Industry Representatives fell below average (2.87) with lower commitment to targets and partnerships. Regarding organization size, large organizations (500+ employees) showed the highest implementation likelihood (3.77 average), especially for creating action plans (4.29) and establishing partnerships (4.14), reflecting greater resources and infrastructure capacity. Small organizations (1-50 employees) demonstrated moderate likelihood (3.35 average) with relatively balanced scores, while medium-sized organizations (51-500 employees) surprisingly showed the lowest likelihood (3.02 average), potentially facing the challenge of lacking both the agility of smaller entities and the resources of larger ones. Overall, **organization type appears to be a stronger predictor of implementation likelihood than size, with organizations already focused on gender equality showing significantly higher commitment, and diverse organizations outside traditional categories potentially being more innovative in adopting gender equality measures.**

Responses regarding realistic annual investment levels for gender equality initiatives revealed substantial variation across organizations, ranging from no investment to dedicated budgets of €100,000 or more. Several respondents suggested allocating 5-10% of HR or training budgets, with one detailed response recommending 0.5-1% of overall operating budgets for ESG-driven organizations. Many participants indicated uncertainty about budget allocation, with some stating their organizations currently have no specific provisions for gender equality initiatives, though they are exploring future dedicated resources.

A notable tension emerged in the comments following the financial incentives section, where some respondents expressed skepticism about women-only programs and company-level financial incentives, arguing these could create perceptions of unfair competition or be subject to abuse. Instead, several

emphasized the need for meritocracy, genuine mindset change, and individual-level support rather than enforced policies.

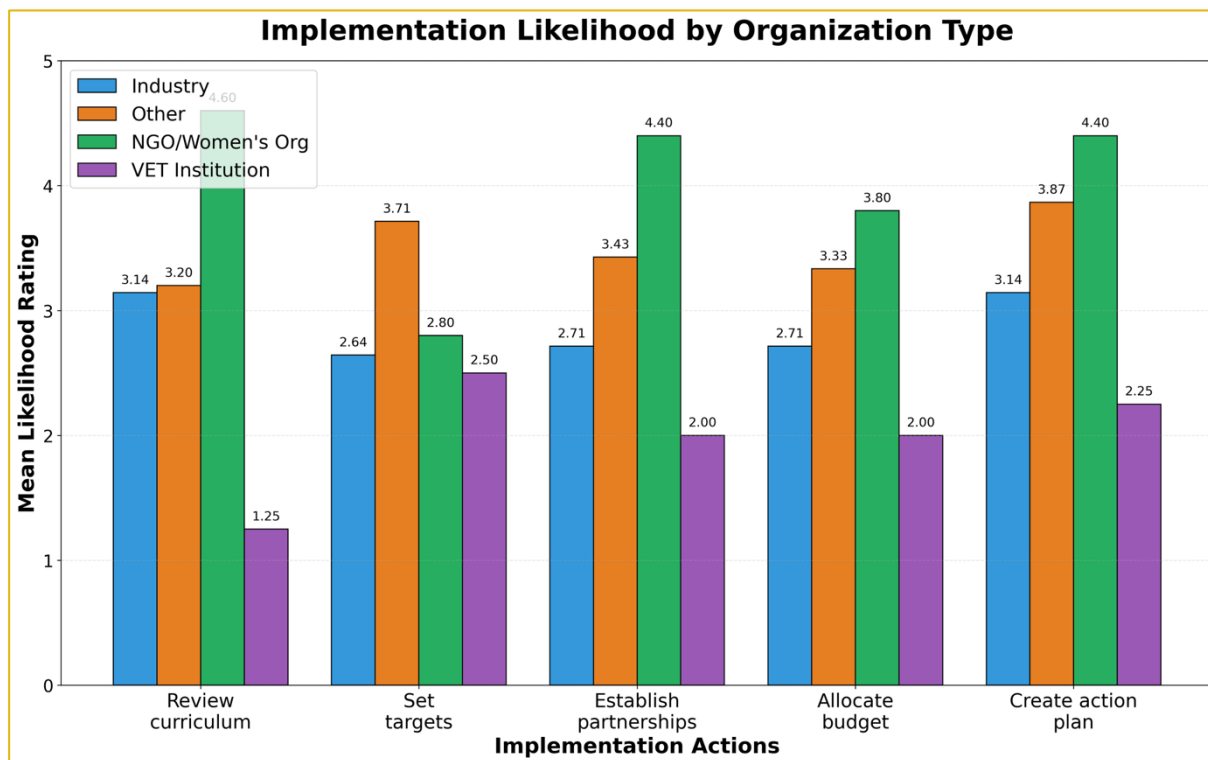


Figure 17. Link of implementation likelihood to organisation type

Others highlighted that simply hiring more women does not guarantee meaningful change if organizational mindsets remain unchanged, particularly when women are assigned lower-skilled tasks despite their qualifications. The strongest recommendations called for combining policy-level strategies with concrete classroom actions, genuine industry partnerships that provide tangible employment opportunities beyond symbolic commitments, and treating women's participation as a natural and essential part of the sector rather than as a special case requiring separate treatment. Overall, respondents acknowledged the importance of both financial and non-financial resources—including dedicated staff time, partnerships with women's organizations, and systematic monitoring—while emphasizing that true progress requires cultural transformation alongside resource allocation.

## 4.5 Barriers to change

The online survey results reveal a prioritization of **structural and systemic barriers** over cultural factors. Policy/regulatory constraints emerge as the most significant barrier, followed by lack of female role models and limited evidence of what works. Notably, cultural/social attitudes rank lowest, suggesting respondents view institutional mechanisms rather than societal prejudices as the primary impediment to gender equality in green energy transition. This contrasts somewhat with the theoretical framework outlined in the project documentation, which emphasizes discriminatory social norms and gender stereotypes as fundamental barriers. The high ranking of "limited evidence of what works" validates the project's emphasis on evidence-based policy experimentation.

For the Blueprint development, these findings indicate that **Axis D (Policy & Governance)** requires particularly robust treatment, with detailed analysis of regulatory frameworks and their gender-responsive implementation mechanisms. The prominence of "lack of female role models" reinforces the

importance of **Axis C (Mentoring & Career Support)** and the project's planned ambassador program. The relatively low concern about cultural attitudes suggests the Blueprint should focus less on changing hearts and minds and more on creating institutional structures—clear policies, visible role models, proven intervention strategies, and adequate funding mechanisms—that enable women's participation regardless of prevailing cultural norms. The survey data strongly supports prioritizing concrete, measurable policy interventions over awareness-raising activities.

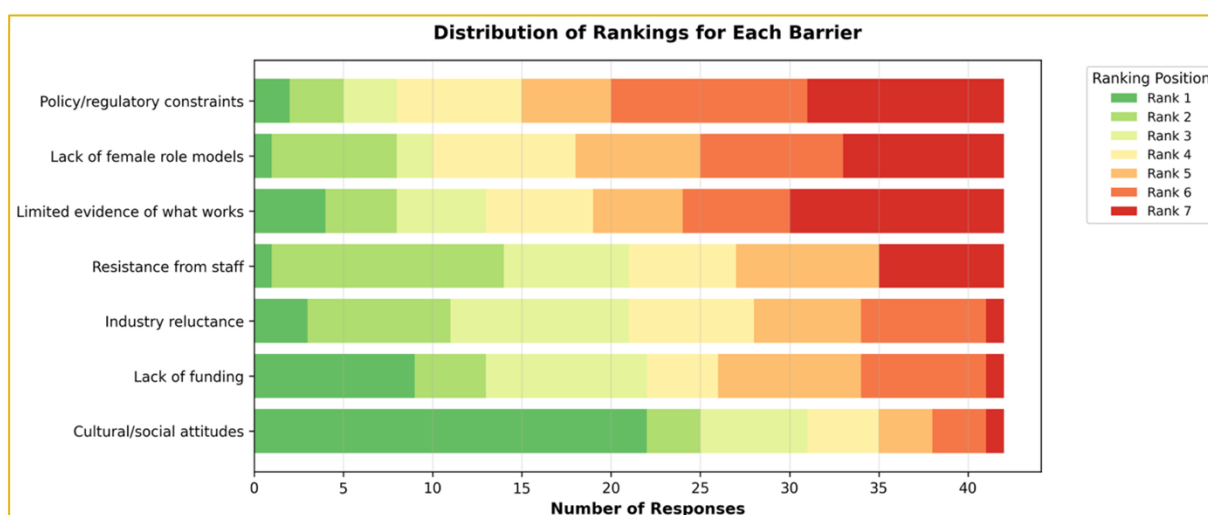


Figure 18. Severity of barriers to implementing change (from less important:1 to most severe:7)

Context-specific challenges assessment reveals that **cultural inertia and deeply embedded gender stereotypes** constitute the most pervasive challenge, with respondents consistently identifying early socialization patterns where girls internalize caregiving roles and avoid technical fields from childhood. This cultural barrier manifests at multiple levels: persistent bias in recruitment and promotion, resistance from male leadership in top management, workplace isolation for women, and entrenched mindsets among male colleagues who dismiss female competence. Several respondents emphasize that overcoming this requires **systemic, early intervention** starting in primary schools with STEM engagement, family involvement programs, and visible female role models throughout the educational pipeline. The responses also highlight a **structural feedback loop**: cultural attitudes reduce female participation, which creates a shallow applicant pool (making recruitment targets difficult even for willing organizations), which in turn reinforces stereotypes about women's absence from the sector. Notably, while funding constraints are mentioned, respondents view financial barriers as secondary to attitudinal change. Solutions proposed cluster around three strategies: sustained awareness campaigns challenging stereotypes, mandatory accountability mechanisms (quotas, transparent policies, financial incentives for companies), and comprehensive support systems addressing work-life balance through childcare provision and flexible arrangements—suggesting that cultural transformation requires both normative change and material infrastructure to enable women's participation.

## 4.6 Change tactics

The change tactics focus on a clear stakeholder preference for **incentive-based, voluntary mechanisms over regulatory enforcement**. Financial incentives for institutions receiving the highest rating (4.05) and industry-led initiatives close behind (4.02), while government mandates/quotas (3.80) and peer pressure/competition between institutions (3.70) received notably lower support despite their proven effectiveness in other gender equality contexts. This pattern suggests stakeholders favor approaches that align institutional self-interest with gender equality goals through positive reinforcement rather than compliance pressure. Potentially this reflects concerns that mandates generate resistance or superficial

compliance without cultural transformation. The strong endorsement of industry-led initiatives alongside financial incentives indicates that **market-driven solutions with employer buy-in are perceived as more sustainable and legitimate** than top-down policy directives, though this preference may underestimate the catalytic role that regulatory frameworks play in creating the conditions for voluntary action. The moderate ratings for public awareness campaigns (3.89) and success stories/case studies (3.81) suggest stakeholders recognize the value of normative influence and social proof, but view them as insufficient without accompanying structural incentives. Most critically, the relative skepticism toward peer competition mechanisms challenges assumptions that benchmarking and institutional rankings will drive change, instead suggesting that **collaborative rather than competitive inter-institutional dynamics** may be more effective in this context. These findings have important implications for policy advocacy and stakeholder engagement strategies: while the project should pursue multi-level policy influence, the emphasis should be on co-designing industry partnership models and identifying funding mechanisms that make gender equality interventions financially advantageous for institutions, rather than primarily lobbying for mandatory quotas that may face implementation resistance even if legislatively successful.

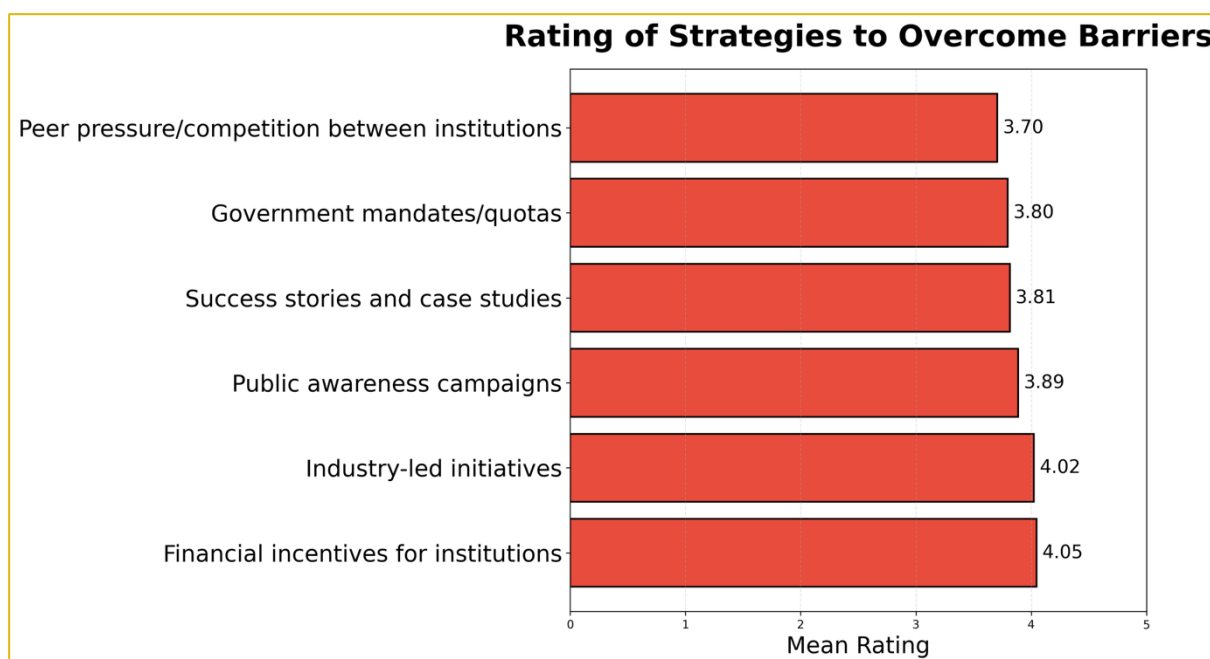


Figure 19. Rating of strategies to overcome barriers

The respondents were asked to propose their own game changing idea (the most important one). The "game-changing" ideas cluster around three transformative paradigms: **comprehensive guarantee programs, structural workplace redesign, and mandatory accountability mechanisms**. The most ambitious proposals envision Europe-wide guarantee programs providing women with free training, paid apprenticeships, guaranteed job placement, and crucially, comprehensive support infrastructure (childcare, housing, relocation assistance) that addresses material barriers preventing participation—essentially reframing green energy access as a fundamental right rather than a competitive opportunity. Several respondents propose **radical workplace restructuring**, including universal 24/7 childcare for all green energy sector employees, extended school hours until 18:00, and flexible arrangements that would "give employers access to twice the talent pool," recognizing that work-life balance constraints disproportionately exclude women. A third strand advocates **binding policy levers**: mandatory 50/50 gender balance in technical apprenticeships tied to public contract eligibility, incentive-based targets rewarding companies achieving 40-50% female representation, or even temporary reverse quotas (60% female executives for 10 years). Underlying these proposals is recognition that incremental change is

insufficient—respondents consistently advocate for **systemic, multi-component interventions** combining early STEM engagement starting in primary school, visible female role models across all promotional materials, mentorship ecosystems ("[Green Sisters Network](#)") following women throughout their careers, and quantitative evidence demonstrating women's measurable impact on sector performance. Notably, several respondents express caution about "positive discrimination," suggesting tension between ambitious equality goals and concerns about meritocracy, yet the dominant thrust emphasizes that transformational change requires removing structural barriers rather than simply encouraging individual women to "lean in" to existing systems.

When respondents were given a specific list of game changing ideas, they prioritized **family engagement programs to shift cultural attitudes** (average rank 2.65) as the most impactful innovative approach, reinforcing the earlier finding that deep-rooted socialization patterns constitute the fundamental barrier—and that families, not just educational institutions or industries, are the critical intervention point. This is followed closely by **industry sponsors assigned to each female student** (2.97) and **green energy career exposure starting in primary schools** (3.11), suggesting a preference for interventions combining early pipeline development with concrete industry connections that provide tangible career pathways. The moderate ranking of **virtual reality training to reduce gender bias** (3.43) indicates cautious optimism about technological solutions, while **all-female cohorts for first year, then integration** (4.14) receives notably lower support, perhaps reflecting concerns about segregation reinforcing rather than dismantling gender barriers. **Gamification of technical subjects** (4.70) ranks lowest, suggesting stakeholders view pedagogical innovation as insufficient without addressing underlying cultural and structural issues. The tight clustering of the top three approaches—all falling within a half-point range—indicates consensus that transformational change requires **simultaneous multi-generational intervention**: reshaping family attitudes at the source, building authentic industry partnerships providing material support and career certainty, and introducing girls to green energy careers before adolescent gender identity crystallizes, thereby attacking the problem at its cultural roots, educational pipeline, and professional entry points concurrently rather than relying on any single lever.

## 4.7 Accountability

The accountability measures data demonstrates a decisive stakeholder preference for positive reinforcement and transparency over punitive compliance mechanisms, with rewards/recognition for achieving goals receiving the highest rating (4.37) and financial penalties for missing targets receiving the lowest (3.61)—a gap of 0.76 points representing the widest differential in this survey section. The strong endorsement of public reporting of gender statistics (4.18) indicates stakeholders recognize that sunlight serves as a powerful disinfectant and motivator, creating reputational incentives for institutional action without requiring formal sanctions, while the moderate support for peer institution comparisons (3.82) suggests competitive dynamics work best when coupled with transparency rather than as standalone mechanisms. The middling rating for student satisfaction surveys (3.73) reveals interesting ambivalence: while stakeholders acknowledge the importance of experiential data, they may question whether satisfaction metrics adequately capture systemic gender equality or fear that satisfaction surveys become compliance exercises rather than genuine feedback loops. Most notably, the relatively low enthusiasm for financial penalties contradicts conventional accountability theory but aligns with earlier findings favoring voluntary, incentive-based approaches—suggesting stakeholders believe punitive measures generate defensive, minimalist compliance while recognition systems motivate ambitious, authentic commitment. These findings have critical implications for monitoring and evaluation frameworks: the project should prioritize developing public-facing dashboards with disaggregated gender data, creating visible recognition mechanisms (awards, certifications, best practice showcases) for institutions demonstrating progress, and designing peer learning networks where comparison serves developmental rather than judgmental purposes, while avoiding accountability architectures that rely

primarily on sanctions—an approach that builds on stakeholder preferences for collaborative improvement over competitive ranking and institutional self-motivation over external enforcement.



Figure 20. Rating of accountability measures

Respondents establish a clear hierarchical accountability structure with **Government/Policy makers** decisively positioned as the primary drivers (average rank 1.98, ranked first by 45% of respondents), followed by **EU/International bodies** (2.75, 28% first-place votes) and **Industry/Employers** (2.98, 22% first-place votes), creating a tripartite top tier that collectively accounts for 95% of all first-place rankings. This concentration of accountability expectations on legislative and economic actors—while completely excluding **VET institutions** and **Civil society/NGOs** from any first-place votes—signals stakeholder consensus that gender equality transformation requires binding regulatory frameworks and market-based enforcement mechanisms rather than voluntary institutional initiatives or advocacy pressure. The relegation of **Students/Learners** to last place (5.15, only 5% first-place votes) emphatically rejects any notion that women themselves bear responsibility for overcoming systemic barriers. This accountability structure directly reinforces the earlier finding that policy/regulatory constraints constitute the highest-ranked barrier: respondents view gender inequality as fundamentally a governance failure requiring state intervention through legislation, funding mandates, and compliance mechanisms, with EU bodies setting supranational standards, national governments implementing them through law and budget allocation, and industry compelled to comply through financial incentives or contractual requirements—positioning VET providers as policy executors rather than autonomous change agents and firmly rejecting market-driven or grassroots solutions as insufficient levers for transformational change.

Respondents favored moderate review cycles, with most preferring annual or bi-annual formal progress reviews, suggesting a preference for accountability frameworks that balance oversight rigor with implementation feasibility—frequent enough to maintain momentum and detect early deviations from targets, yet not so frequent as to burden organizations with excessive reporting or prevent meaningful progress accumulation between assessment points.

When asked to identify the single most impactful change they could guarantee in the next year to improve women's participation in green energy, survey respondents identified a diverse range of priority interventions, reflecting different strategic approaches to the challenge.

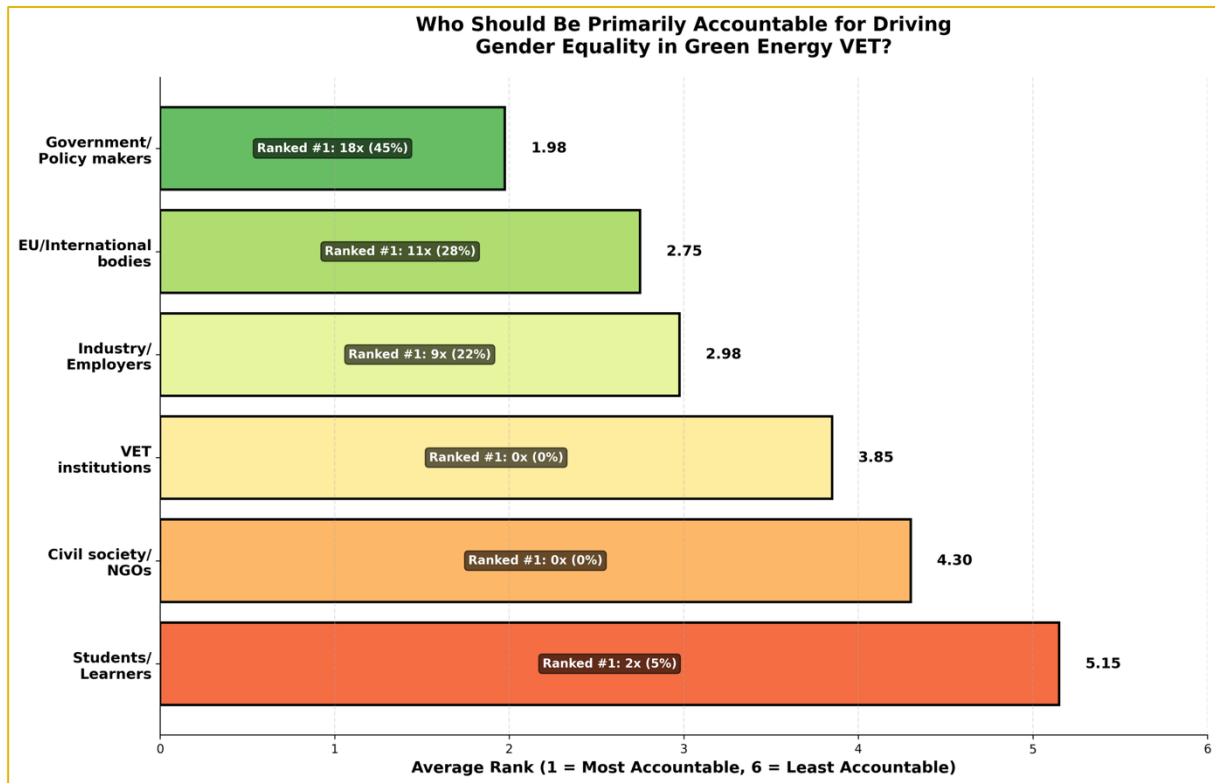


Figure 21. Accountability responsibility

Three key themes emerged with equal emphasis: **mandatory policy measures, financial support mechanisms, and early educational interventions.** Several respondents advocated for structural accountability measures such as gender quotas in training programs, mandatory gender diversity criteria in renewable energy project tenders and EU-funded programs, or mandatory gender sensitivity training across all green energy organizations, arguing that intentional action is necessary to shift structural underrepresentation and ensure public funds drive real equity rather than just good intentions. An equal number emphasized the critical importance of scholarships exclusively for women in technical and energy-related fields to provide both financial and motivational support for entering the sector. Others focused on engaging younger generations through early education, with suggestions ranging from introducing lessons at elementary schools to having educational institutions actively inspire and aspire young women toward green careers. Additional priority changes included establishing universal mentorship programs pairing every female student with an industry mentor, increasing women's representation in leadership and higher positions to serve as visible role models, redesigning curriculum to be gender-inclusive, and launching public awareness campaigns. Some respondents also mentioned practical support measures such as extending school hours to accommodate working parents. While the specific approaches varied, the responses collectively emphasize that achieving meaningful change requires interventions across multiple levels—from policy and funding to education and cultural shifts—with respondents prioritizing the area where they believe impact can be most immediately realized.

## 4.8 Change through collaboration

Survey respondents overwhelmingly emphasized the need for multi-stakeholder partnerships that bridge education, industry, and social support systems. The most frequently proposed model involves a three-way collaboration between VET institutions, green energy companies, and women's organizations or NGOs. These partnerships would focus on creating comprehensive pathways from training to employment, combining gender-responsive curriculum development, targeted internships, and mentoring programs. Several respondents highlighted the importance of government or ministerial involvement to provide policy support, co-funding, and regulatory frameworks. Specific partnership models mentioned include "Women in Green Skills Alliances" that integrate outreach services such as childcare support and confidence-building workshops, as well as collaborations with chambers of commerce and business associations to facilitate industry connections. Some respondents also emphasized engaging schools, particularly secondary schools, through "shadow your future" programs that expose young girls to green energy careers early on. A few responses identified specific organizations such as Associations for Energy Economics, UN Women, and national grid operators as potential strategic partners. Overall, the responses converge on the idea that effective partnerships must connect educational institutions directly with employers while simultaneously addressing social and cultural barriers through dedicated women's support organizations, thereby creating an integrated ecosystem that supports women from initial training through to leadership positions in the green energy sector.

## 4.9 Conclusions

The online survey results revealed a decisive stakeholder prioritization of **structural and systemic barriers** over cultural factors, with policy and regulatory constraints emerging as the most significant impediment to gender equality in the green energy transition, followed by the lack of female role models and limited evidence of effective interventions. Respondents strongly endorsed **outcome-oriented success indicators**—particularly equal starting salaries, leadership representation, and job placement rates—over process-oriented measures, while expressing clear preference for inclusive structural accommodations (flexible learning schedules, gender-sensitive teaching methodologies) rather than gender-segregated interventions. The survey identified three dominant change priorities: early educational intervention and cultural transformation starting from primary education, embedding gender equality into institutional structures through mandatory policy frameworks and curriculum reform, and achieving workplace equity through equal pay and leadership opportunities.

These findings necessitate significant refinements to the initial Blueprint structure. **Axis D (Policy & Governance)** requires particularly robust treatment given its identification as the primary barrier, with expanded focus on regulatory frameworks, implementation mechanisms, and cross-ministerial coordination. The prominence of role model deficits reinforces **Axis C (Mentoring & Career Support)** as a strategic priority, while **Axis B (Curriculum & Pedagogy Reform)** must emphasize mainstreaming gender sensitivity across all learning environments rather than creating parallel pathways. The survey validated the need for enhanced **multi-stakeholder collaboration frameworks** spanning education, industry, government, and civil society, alongside stronger emphasis on early-stage interventions, family engagement, and sustained monitoring mechanisms that bridge the gap between policy commitments and measurable outcomes.

The following table summarises the impact of the online survey results to the initial Blueprint.

Blueprint Axis	Survey Findings	Identified Priorities	Required Blueprint Refinements
<b>Axis A: Access &amp; Participation</b>	<ul style="list-style-type: none"> <li>Outcome-oriented indicators favored</li> <li>Flexible learning schedules endorsed</li> <li>Early intervention emphasized</li> </ul>	<ul style="list-style-type: none"> <li>Early educational intervention from primary education</li> <li>Cultural transformation at education roots</li> <li>Inclusive structural accommodations</li> </ul>	<ul style="list-style-type: none"> <li>Early-stage interventions strengthened</li> <li>Family engagement programs developed</li> <li>Structural accommodations over segregated pathways</li> </ul>
<b>Axis B: Curriculum &amp; Pedagogy Reform</b>	<ul style="list-style-type: none"> <li>Gender-sensitive teaching methodologies valued</li> <li>Mainstream inclusion preferred</li> <li>Mandatory frameworks supported</li> </ul>	<ul style="list-style-type: none"> <li>Embedding gender equality into institutional structures</li> <li>Mandatory policy frameworks</li> <li>Curriculum reform implementation</li> </ul>	<ul style="list-style-type: none"> <li>Gender sensitivity across all learning environments</li> <li>Avoid parallel pathways</li> <li>Integrate across curriculum rather than separate modules</li> </ul>
<b>Axis C: Mentoring &amp; Career Support</b>	<ul style="list-style-type: none"> <li>Second-ranked barrier overall</li> <li>Leadership representation critical</li> <li>Career pathway visibility needed</li> </ul>	<ul style="list-style-type: none"> <li>Female role models throughout pipeline</li> <li>Visible women leaders</li> <li>Ambassador programs</li> </ul>	<ul style="list-style-type: none"> <li>Comprehensive mentoring frameworks</li> <li>Role model visibility programs</li> <li>Career pathway facilitation strengthened</li> </ul>
<b>Axis D: Policy &amp; Governance</b>	<ul style="list-style-type: none"> <li>Policy/regulatory constraints ranked #1</li> <li>Institutional mechanisms prioritized</li> <li>Enforcement gaps highlighted</li> </ul>	<ul style="list-style-type: none"> <li>Mandatory policy frameworks</li> <li>Regulatory implementation</li> <li>Cross-ministerial coordination</li> </ul>	<ul style="list-style-type: none"> <li>Expanded regulatory frameworks</li> <li>Detailed implementation mechanisms</li> <li>Cross-ministerial coordination enhanced</li> <li>Policy enforcement strengthened</li> </ul>
<b>Axis E: Community &amp; Industry Engagement</b>	<ul style="list-style-type: none"> <li>Partnership models proposed</li> <li>Education-industry links critical</li> </ul>	<ul style="list-style-type: none"> <li>VET-industry-NGO partnerships</li> <li>Government co-funding</li> <li>Business association involvement</li> </ul>	<ul style="list-style-type: none"> <li>Multi-stakeholder collaboration frameworks spanning education, industry, government, civil society</li> <li>Integrated ecosystem approach</li> </ul>



	<ul style="list-style-type: none"> <li>Three-way collaborations favored</li> </ul>		
<b>Axis F: Sustainability &amp; Evaluation</b>	<ul style="list-style-type: none"> <li>"Limited evidence of what works" ranked high</li> <li>Measurable outcomes preferred</li> <li>Accountability mechanisms essential</li> </ul>	<ul style="list-style-type: none"> <li>Equal starting salaries tracked</li> <li>Leadership representation monitored</li> <li>Job placement rates measured</li> </ul>	<ul style="list-style-type: none"> <li>Bridge gap between policy commitments and measurable outcomes</li> <li>Evidence-based intervention strategies</li> <li>Concrete accountability mechanisms</li> </ul>

Table 3. On line survey impact on the Blueprint

## 5. Structured Interviews analysis

### 5.1 Research Design

At the core of the project are structured interviews with the goal to collect primary data through a standardized discussion guide. The decision to organize and conduct structured interviews in WP2 was driven by the need to collect insights from five stakeholder groups including Educational Institutions, Industry Representatives/Leaders, Current Female VET Students, Policymakers, and Women's Organizations. While desktop research and quantitative surveys can provide valuable baseline information, interviews allow us to identify and explore experiences that are not visible in statistical data, identify barriers, and collect proposals from stakeholders for the design of the Blueprint for Gender Equality in the Green Energy Transition and ensure that the project deliverables reflect both empirical evidence and experiences.

The structured interview process involved a total of 37 interviews across the four partner countries where fieldwork was conducted (Greece, Spain, Belgium, and Norway), covering all five stakeholder groups (Educational Institutions, Industry Representatives, Female VET Students, Policymakers, and Women's Organizations). The distribution of interviews across countries and stakeholder groups enabled both cross-country comparison and identification of context-specific patterns requiring tailored Blueprint responses..

To ensure consistency across countries and partners, a structured interview questionnaire was developed (Annex III). The key design steps were the selection of both quantitative and open-ended questions, focused around six Blueprint axes (Axis A: Access & Participation, Axis B: Curriculum & Pedagogy Reform, Axis C: Mentoring & Career Support, Axis D: Policy & Governance, Axis E: Community & Industry Engagement, Axis F: Sustainability & Evaluation). In addition, in order to align with each partner's expertise, stakeholder group interviews were divided among partners within each country. The questionnaire also suggested various follow-up questions to support less experienced interviewers with collecting more details from the interviewees. In addition to the above, in order to ensure compliance with EU ethics and data protection requirements, an interview consent form was included within the questionnaire.

Data collection started with the identification of stakeholders for each group, followed by outreach and scheduling. The same approach was applied by all participating partners, with adjustments made for each stakeholder group and country. All partners utilized their own resources such as communities, and other groups they participate, in order to gain access to potential interviewees. Interview sessions lasted approximately 60 minutes, with partners taking notes and, if granted necessary, recording the discussion for further accuracy. After the interviews were completed, each partner prepared reports of 2–3 pages each, one per stakeholder group, presenting key findings and quantitative data, based on the draft report described above.

All participants provided informed consent prior to participation.

Interviewers guaranteed the anonymity of the interviewees and their participation was entirely voluntary, and they were able to withdraw at any stage of the process

### 5.2 Cross-Cutting Findings by Blueprint Axis

#### 5.2.1 Axis A: Access & Participation

Women's participation in green energy technical and leadership roles remains significantly limited across all partner countries. Industry representatives reported that women hold between 10-20% of technical positions, with one organization stating that women's participation "has remained the same"

in recent years. In Belgium, women make up only 32% of the renewable energy workforce, indicating a significant gap. Educational institutions confirmed that female enrollment in green energy VET programs remains low, with one institution reporting only 2 of 13 students being women.

Key barriers identified across stakeholder groups include structural exclusion, deeply rooted gender stereotypes, and masculinized learning environments that discourage women. Female VET students reported that women often hesitate to pursue technical studies due to fear of technical complexity. Stakeholders emphasized that the absence of internal measures for work-life balance, such as remote working options and flexible schedules, disproportionately affects women. Women's organizations highlighted additional obstacles for marginalized groups, including limited transportation options, lack of childcare, and inflexible schedules. Industry representatives noted a persistent insufficiency of female candidates in technical roles and a limited pool of qualified applicants. Stakeholders also pointed to a fundamental "pipeline problem" where gendered educational choices beginning in lower secondary education systematically limit the pool of women entering technical green energy pathways, reinforcing the cycle of underrepresentation across all career stages.

Despite these barriers, female students expressed strong motivation based on personal interest in sustainability and green energy, environmental values, and available job opportunities. Family support was consistently identified as strong, although social awareness of green energy careers remains limited. Women's organizations were identified as critical facilitators for improving access through mentoring and awareness campaigns.

### **5.2.2 Axis B: Curriculum & Pedagogy Reform**

Educational materials predominantly feature male examples and role models. Female VET students noted the predominance of male scientists in educational materials, although some teachers made efforts toward inclusive language and providing female role models despite the sector's male-dominated history. One educational institution stated they have not yet reviewed their learning materials to integrate gender-sensitive or inclusive content.

Students reported practical challenges during field visits, specifically with equipment sizes such as jackets, shoes, and helmets, which were not adapted for women, affecting both safety and comfort. Gender bias from peers was also reported, including comments suggesting that women are not capable of enduring demanding studies. One student shared that although she generally feels supported, sometimes higher expectations on technical skills are demanded from male students.

Stakeholders recommended developing gender-sensitive curricula with flexible schedules and content inclusive of women's realities. Specific suggestions included more female case studies, interactive and digital resources, and attention to work-life balance in curriculum design. There is a clear need for practical and technical training to be adapted to ensure accessibility and relevance for women in GET programs. Stakeholders further emphasized that vocational teacher education itself must incorporate foundational knowledge about gender stereotypes and exclusionary norms, equipping educators with tools to counteract limiting patterns rather than inadvertently reproducing them through their pedagogical choices.

### **5.2.3 Axis C: Mentoring & Career Support**

Neither industry representatives nor most educational institutions currently offer structured mentoring programs for women entering or advancing in technical roles. Female VET students confirmed that none had been assigned a specific mentor, although both recognized the importance of mentoring from women in the sector for career support and networking. One student shared that there is structured guidance from program tutors during internships, but no formal mentoring program exists.

Industry participants agreed that the lack of official mentoring restrains women's visibility, networking, and preparation for leadership roles. Companies reported that opportunities for professional growth usually result from individual initiative, and while they organize conferences and networking events,

these do not have a gender-related focus. Career progress paths were described as gender-neutral but not gender equity-oriented.

Women's organizations emphasized effective support models including one-to-one mentoring with experienced women and networks of female professionals. Continuous guidance and mentoring are critical for retention and for preparing women to take on leadership roles. Stakeholders highlighted that mentoring programs should pair female students with experienced women professionals and provide career workshops for job-seeking and professional development. Women leave technical roles at rates of 10-30% after ten years due to factors such as aggression/abuse, lack of growth opportunities, work-life balance challenges, and glass ceiling effects.

#### **5.2.4 Axis D: Policy & Governance**

Policy awareness and implementation effectiveness varied significantly across stakeholder groups and countries. Among educational institutions, one participant was aware of several EU policies including the Gender Equality Strategy 2020-2025, the European Green Deal, and the Council Communication on VET 2020, while another reported no awareness of any national or EU policies promoting gender equality in the energy sector. None of the educational participants reported having internal policies or quotas specifically aimed at promoting gender equality in green energy roles.

Industry representatives presented differentiated levels of policy engagement. One company showcased awareness of national and EU gender equality frameworks and has developed an Equality Plan aligned with these policies, though its impact was rated low (2/5) as implementation remains largely symbolic, focused mostly on visibility events rather than substantial change. The other industry participant was not aware of national or EU gender equality policies and their company does not apply any internal quotas or gender-related governance mechanisms.

Policymakers identified critical barriers including absence of dedicated gender policies in many institutions, low practical prioritization despite declarative political support, and limited institutional capacity and resources to implement and monitor gender measures. They highlighted the lack of gender-disaggregated data and baseline indicators as a significant challenge. Enforcement of gender equality policies in the energy sector is weak, and inclusion of women in decision-making, monitoring, and implementation remains limited, leaving policy intentions unfulfilled in practice.

Evidence from the interviews also highlighted the value of binding regulatory frameworks in advancing governance-level gender equality. Norway's pioneering 40% gender quota for corporate boards, first introduced in 2003 for state-owned companies and extended in 2008 to listed companies — with further legislation through 2028 expanding requirements to private limited liability companies — was cited as demonstrating that mandatory quotas can produce measurable change at board level within relatively short timeframes. However, stakeholders emphasized that such quotas alone do not resolve sectoral workforce imbalances, where women remain significantly underrepresented in technical and operational roles despite governance-level progress.

Stakeholders emphasized that governments must lead through policy, legislation, and funding, while educational institutions implement inclusive teaching, curricula, and outreach. Embedding gender across all stages of the policy cycle, with clear objectives, indicators, and budgets, was identified as essential.

#### **5.2.5 Axis E: Community & Industry Engagement**

Industry representatives reported minimum external engagement and no collaboration with women's organizations, communities, or educational institutions for initiatives focused on gender equality. Companies do not evaluate their workplace culture or actively promote inclusivity in technical roles. Engagement with schools and communities was described as neutral, interacting equally with male and female members without targeted initiatives.

Neither industry nor most educational institutions currently engage with local communities to promote women's participation in green energy careers. Educational institutions primarily involve general

outreach activities rather than targeted initiatives specifically designed to engage women in green energy programs. Stakeholders recognized this as a missed opportunity to inspire younger generations and enhance the talent pipeline.

Women's organizations described extensive engagement efforts, including conferences on environment and energy, initiatives on circular economy, and collaborations with professional chambers. While gender issues were not always the main focus, equal representation of women and men among speakers was a deliberate priority. Organizations emphasized that awareness campaigns, visible role models, and safe spaces strengthen female participation. Collaboration between women's organizations, industry, and educational institutions is critical to facilitate access, skills development, and career progression.

Stakeholders emphasized that effective engagement relies on both structured programs and targeted communication to shift perceptions and build supportive professional networks. Companies should adjust communication strategies, including language and imagery, to better attract women.

### 5.2.6 Axis F: Sustainability & Evaluation

Industry representatives confirmed they do not have systems to measure the return on investment (ROI) of gender equality initiatives or to monitor progress on a long-term scale. One company has developed an Equality Plan but no 5-year strategy or monitoring mechanism to evaluate outcomes, suggesting compliance is not considered an integral part of corporate strategy. Both companies lack gender-related evaluation methods or long-term plans, leading to an absence of internal sustainability mechanisms for gender equality.

Educational institutions and policymakers also highlighted insufficient evaluation culture and under-production of gender-disaggregated statistics. Policymakers noted resistance from stakeholders and emphasized that robust monitoring, clear accountability, and business cases are needed to motivate compliance. Challenges in quantifying barriers exist due to limited disaggregated data, especially for marginalized groups.

Women's organizations expressed desire to develop structured evaluation tools such as pre/post questionnaires and long-term monitoring to assess behavioral and career outcomes among participants. However, limited financial and human resources restrict their ability to measure impact and scale initiatives. One organization reported that their GEP will be reevaluated and updated every five years, noting positive impacts on productivity, recruitment success, and gender balance.

Long-term funding, monitoring systems, and adaptive strategies informed by local realities are needed to sustain gender equality initiatives. Stakeholders emphasized the necessity of explicit gender objectives, budgets, and ongoing advocacy to ensure that policies deliver tangible outcomes. A recurring theme across consultations was that even in contexts with relatively strong statistical infrastructure, detailed continuously-updated data on gender gaps within specific renewable energy sub-sectors remains difficult to locate, positioning systematic gender-disaggregated data collection as a precondition rather than a by-product of effective policy.

## 5.3 Synthesis and Key Priorities

### 5.3.1 Main Barriers and Challenges

The structured interviews revealed persistent cross-cutting barriers affecting women's participation in the green energy transition. Persistent gender stereotypes in technical sectors remain a fundamental challenge, with deeply rooted cultural norms and masculinized learning environments discouraging women's participation. Women remain significantly underrepresented in technical and leadership roles, with reported participation rates of only 10-20% in technical positions and 32% in the renewable energy workforce overall.

Lack of tailored vocational education and training opportunities for women continues to limit access. Educational materials predominantly feature male examples and role models, while practical training often fails to accommodate women's needs, including equipment adapted for women and gender-sensitive curricula. Insufficient mentoring and career support was identified across all stakeholder groups, with neither industry nor most educational institutions offering structured mentoring programs for women entering or advancing in technical roles.

Weak enforcement of inclusive policies and limited decision-making power for women characterize the policy landscape. Policy awareness and implementation effectiveness vary significantly, with many organizations lacking internal gender equality policies or quotas. Where policies exist, implementation remains largely symbolic rather than substantial. Scarcity of disaggregated data on women's participation and advancement severely limits the ability to monitor progress and evaluate effectiveness.

Obstacles are particularly pronounced for marginalized women, including rural, immigrant, and low-income groups. These groups face additional barriers including limited transportation options, lack of childcare, inflexible schedules, and structural exclusion. Limited institutional capacity and resources to implement and monitor gender measures affect both public and private organizations. Absence of long-term sustainability mechanisms, dedicated budgets, and monitoring frameworks undermines continuity of gender equality initiatives.

### 5.3.2 Strategic Recommendations

Stakeholders across all groups emphasized the need for intersectoral collaboration among women's organizations, VET institutions, industry partners, and policymakers. Developing gender-sensitive and flexible VET curricula with inclusive teaching methodologies, female role models, and practical adaptations is essential. Educational initiatives must begin at primary and secondary levels, showcasing diverse female role models and career pathways to challenge stereotypes early.

Establishing mentoring programs and professional networks to support women throughout their careers emerged as a critical priority. These programs should provide one-to-one mentoring with experienced women, career workshops, and networking opportunities. Ambassador programs and peer support networks can reinforce confidence and belonging in STEM and green energy careers.

Policies must be intersectional, enforceable, and adequately resourced, with clear accountability mechanisms and dedicated funding. Embedding gender across all stages of the policy cycle, with explicit objectives, indicators, and budgets, was identified as essential. This includes developing monitoring frameworks integrating mapping exercises with SDG 5 indicators to track gender parity in leadership and technical roles.

Providing practical support services such as childcare, flexible working arrangements, transportation, and work-life balance policies is critical for enabling women's participation. Companies should adjust communication strategies, including language and imagery, to better attract women. Workplace inclusion requires family-friendly policies, safe environments, and access to leadership and technical roles.

Including women in decision-making, planning, and monitoring processes ensures their perspectives shape policies and programs. Integration of gender equality indicators within all GET policies and national strategies, supported by gender-disaggregated data collection and baseline diagnostics, enables evidence-based policymaking. Establishing observatories or monitoring mechanisms to evaluate policy impact and ensure long-term sustainability through multi-annual planning and permanent structures is essential.

### 5.3.3 Priorities for Blueprint Implementation

For the Blueprint's next stage, developing cross-sector partnerships between government, industry, and women's organizations to co-design gender-inclusive policies is paramount. This includes strengthening

coordination between women's organizations, schools, VET providers, industry, and government to avoid fragmented efforts.

Targeted funding mechanisms and support for women's organizations to implement mentoring programs and evaluation tools must be established. This includes allocating dedicated budgets, ensuring access to EU funding, and introducing policy incentives such as tax breaks, grants, and certifications to promote female participation. Corporate incentives for gender-balanced leadership and recognition awards for organizations promoting equality efficiently can drive institutional change.

Supporting structured evaluation mechanisms to monitor women's participation and progression in green energy requires developing clear gender-related indicators for employment, training, leadership, and access to resources. Creating permanent equality units within energy agencies and regulatory frameworks ensures sustainability beyond project-based initiatives.

Targeted interventions for marginalized groups must provide multi-language, culturally adapted resources and address specific barriers faced by rural, immigrant, and socially excluded women. Investment in public awareness campaigns and educational programs to challenge internalized and cultural gender stereotypes, with visible role models and success stories, can inspire cultural change.

Highlighting best practices and success stories from women-led enterprises, including case studies of companies that have thrived under women's leadership, can influence public opinion and corporate decision-makers. Ensuring gender mainstreaming with monitoring and accountability mechanisms, including enforcement of gender equality laws and sanctions for non-compliance, provides the structural support necessary for sustained progress.

The Blueprint must evolve from treating gender equality as a transversal principle to positioning it as a central axis in energy transition strategies. This requires political commitment, ministerial leadership, allocation of resources, and recognition that investing in women's participation is not only a matter of equality but also a driver of social and economic development in the green energy transition.

## 5.4 Conclusions

The structured interviews provided critical empirical validation and refinement of the initial Blueprint framework, revealing both the persistent barriers to women's participation in the green energy transition and the concrete interventions needed to overcome them. Through in-depth consultations with five stakeholder groups across four partner countries (Greece, Spain, Belgium, Norway)—Educational Institutions, Industry Representatives, Female VET Students, Policymakers, and Women's Organizations—the interviews moved beyond the framework validation achieved through the workshop and survey to capture lived experiences, context-specific challenges, and actionable recommendations from diverse perspectives.

The interview findings necessitate significant adjustments to the initial Blueprint structure across all six axes. While the validation workshop and online survey effectively identified barriers and assessed their severity, the structured interviews provided the granular, stakeholder-specific insights needed to transform the Blueprint from a problem identification framework into an operational strategy. Most critically, the interviews revealed that persistent gender stereotypes, weak policy enforcement, insufficient mentoring infrastructure, and limited institutional capacity represent not merely isolated challenges but interconnected systemic barriers requiring coordinated, multi-level interventions.

The structured interview results confirm that the Blueprint must prioritize three cross-cutting strategic imperatives. First, strengthening policy enforcement mechanisms and monitoring frameworks to bridge the gap between policy commitments and implementation. Second, developing comprehensive mentoring and career support systems with structured programs, dedicated resources, and long-term sustainability mechanisms. Third, establishing intersectoral collaboration frameworks that connect educational institutions, industry partners, policymakers, and women's organizations in coordinated



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action. These priorities reflect the stakeholders' consistent emphasis on moving from aspirational policies to concrete implementation pathways supported by adequate funding, clear accountability, and sustained institutional commitment.

The table below synthesizes how the structured interview findings affect each axis of the initial Blueprint, detailing the key insights from stakeholder consultations, the required refinements to the framework, and the priority actions identified for implementation.

Blueprint Axis	Key Interview Findings	Required Blueprint Refinements	Priority Actions
<b>Axis A: Access &amp; Participation</b>	<ul style="list-style-type: none"> <li>• Women hold only 10-20% of technical positions</li> <li>• Female enrollment critically low (e.g., 2 of 13 students)</li> <li>• Structural exclusion and masculinized learning environments</li> <li>• Marginalized women face compounded barriers</li> </ul>	<ul style="list-style-type: none"> <li>• Address intersectional barriers for marginalized groups</li> <li>• Strengthen work-life balance support mechanisms</li> <li>• Integrate family engagement strategies</li> <li>• Develop targeted recruitment strategies</li> </ul>	<ul style="list-style-type: none"> <li>• Implement comprehensive support services (childcare, transportation, flexible working)</li> <li>• Create scholarships and financial support for marginalized women</li> <li>• Establish baseline diagnostics with gender-disaggregated data</li> </ul>
<b>Axis B: Curriculum &amp; Pedagogy Reform</b>	<ul style="list-style-type: none"> <li>• Materials predominantly feature male examples</li> <li>• Training fails to accommodate women's needs</li> <li>• Curricula lack gender-sensitive content</li> <li>• Students report fear of technical complexity</li> </ul>	<ul style="list-style-type: none"> <li>• Integrate gender-sensitive curriculum content analysis</li> <li>• Develop inclusive pedagogical approaches</li> <li>• Feature balanced female professional representation</li> <li>• Adapt practical training equipment for all students</li> </ul>	<ul style="list-style-type: none"> <li>• Conduct systematic review of all curriculum materials</li> <li>• Train educators in gender-sensitive pedagogy</li> <li>• Create supplementary materials showcasing women's contributions</li> </ul>
<b>Axis C: Mentoring &amp; Career Support</b>	<ul style="list-style-type: none"> <li>• No structured mentoring programs offered</li> <li>• Female students report isolation and lack of guidance</li> <li>• Absence of professional networks for women</li> <li>• No long-term career support mechanisms</li> </ul>	<ul style="list-style-type: none"> <li>• Design structured mentoring program frameworks</li> <li>• Establish mentor-mentee matching mechanisms</li> <li>• Create sustainable funding models</li> <li>• Develop evaluation frameworks</li> </ul>	<ul style="list-style-type: none"> <li>• Establish one-to-one mentoring programs with experienced women</li> <li>• Create peer support networks and ambassador programs</li> <li>• Implement tracking systems for mentoring outcomes</li> </ul>
<b>Axis D: Policy &amp; Governance</b>	<ul style="list-style-type: none"> <li>• Policy implementation varies significantly</li> </ul>	<ul style="list-style-type: none"> <li>• Strengthen policy enforcement with accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Implement mandatory frameworks with sanctions for non-compliance</li> </ul>



Blueprint Axis	Key Interview Findings	Required Blueprint Refinements	Priority Actions
	<ul style="list-style-type: none"> <li>• Many organizations lack gender equality policies</li> <li>• Implementation remains largely symbolic</li> <li>• Weak enforcement and accountability structures</li> </ul>	<ul style="list-style-type: none"> <li>• Develop cross-ministerial coordination frameworks</li> <li>• Establish monitoring systems with indicator tracking</li> <li>• Create gender-responsive budget planning guidelines</li> </ul>	<ul style="list-style-type: none"> <li>• Establish six-month indicator tracking over two years</li> <li>• Create incentive structures (tax breaks, grants, certifications)</li> </ul>
<p><b>Axis E: Community &amp; Industry Engagement</b></p>	<ul style="list-style-type: none"> <li>• Persistent bias in recruitment and promotion</li> <li>• Workplace isolation and resistance from leadership</li> <li>• Limited industry-education collaboration</li> <li>• Non-inclusive workplace cultures</li> </ul>	<ul style="list-style-type: none"> <li>• Develop employer engagement strategies with partnership models</li> <li>• Create workplace culture assessment tools</li> <li>• Strengthen industry-education collaboration mechanisms</li> </ul>	<ul style="list-style-type: none"> <li>• Launch industry partnerships with gender balance commitments</li> <li>• Create industry sponsorship models for female students</li> <li>• Establish multi-stakeholder coordination platforms</li> </ul>
<p><b>Axis F: Sustainability &amp; Evaluation</b></p>	<ul style="list-style-type: none"> <li>• Limited resources restrict impact measurement</li> <li>• Absence of long-term sustainability mechanisms</li> <li>• Scarcity of disaggregated data limits monitoring</li> <li>• Organizations lack evaluation frameworks</li> </ul>	<ul style="list-style-type: none"> <li>• Develop impact measurement frameworks with SDG 5 indicators</li> <li>• Create sustainability planning with multi-annual funding</li> <li>• Establish data collection protocols</li> </ul>	<ul style="list-style-type: none"> <li>• Establish observatories or monitoring mechanisms</li> <li>• Develop gender-disaggregated data collection systems</li> <li>• Create dedicated budget lines with multi-year commitments</li> </ul>

Table 4. Structured Interviews impact on the Blueprint



The structured interviews fundamentally transformed the Blueprint from a diagnostic framework identifying barriers into a strategic implementation roadmap grounded in stakeholder wisdom and lived experience. The interviews revealed that effective gender equality intervention requires moving beyond awareness-raising to address three critical implementation gaps: the enforcement gap (translating policy commitments into accountability mechanisms), the capacity gap (building institutional resources and expertise to deliver gender-sensitive programs), and the sustainability gap (ensuring long-term funding and permanence beyond project cycles).

Stakeholder recommendations consistently emphasized that the Blueprint must position gender equality as a central rather than transversal principle in green energy transition strategies. This requires treating gender not as an add-on consideration but as a fundamental design element shaping policies, programs, curricula, workplace practices, and monitoring systems. The interviews validated the six-axis framework structure while demanding significantly more robust attention to implementation mechanisms, resource allocation, and accountability—shifting from "what should happen" to "how to make it happen" with concrete timelines, responsible actors, and measurable outcomes.

Most significantly, the structured interviews identified the strategic priority of intersectoral collaboration as essential for Blueprint success. Stakeholders across all five groups—educational institutions, industry, female students, policymakers, and women's organizations—emphasized that fragmented, sector-specific interventions cannot address the systemic nature of gender inequality in the green energy transition. The Blueprint must therefore establish formal coordination frameworks, joint planning mechanisms, shared accountability structures, and collaborative funding models that enable education systems, labour markets, government agencies, and civil society to work in concert toward gender parity in the green energy sector.

## 6. The Gender-responsive Framework

### 6.1 Purpose and Scope

The **Gender-Responsive Blueprint for the Green Energy Transition** provides a strategic framework for advancing gender equality across the green energy education and employment pipeline in European Vocational Education and Training (VET) systems at qualification levels 3 and 4. Its purpose is to guide VET institutions, employers, policymakers, and civil society organizations in implementing evidence-based interventions that address persistent barriers to women's participation, retention, and advancement in green energy technical roles.

The Blueprint encompasses the full spectrum of gender equality challenges from initial access and recruitment through curriculum design, mentorship systems, career advancement, policy frameworks, stakeholder collaboration, and sustainability mechanisms.

Structured around **six interconnected strategic axes**, it functions as a living framework designed for ongoing adaptation and refinement based on implementation experience. Users across diverse institutional, regional, and national contexts can apply this Blueprint to diagnose current gaps, prioritize interventions, establish accountability mechanisms, and contribute to systemic transformation positioning gender equality as a central rather than transversal principle in the green energy transition.

The Blueprint positions gender equality as a central rather than transversal principle in green energy transition strategies. Research findings consistently demonstrated that treating gender as an add-on consideration produces symbolic commitments disconnected from implementation. Instead, this framework treats gender equality as a foundational design element shaping policies, programs, curricula, workplace practices, and monitoring systems across all levels.

The Blueprint provides actionable guidance for VET institutions, employers, policymakers, and civil society organizations seeking evidence-based strategies adaptable to their specific contexts while maintaining coherence with broader European sustainability and gender equality objectives. Each axis includes strategic interventions, implementation frameworks specifying responsible actors and timelines, and key performance indicators enabling progress monitoring and accountability.

This Blueprint functions as a **living framework** designed for ongoing adaptation and refinement based on implementation experience and evolving contexts. It provides actionable guidance for VET institutions, employers, policymakers, and civil society organizations seeking evidence-based strategies adaptable to their specific regional, cultural, and institutional contexts while maintaining coherence with broader European sustainability and gender equality objectives. Users are encouraged to contextualize recommendations to their unique circumstances, pilot innovations, document lessons learned, and contribute to the collective knowledge base advancing gender equality in the green energy transition.

While the Blueprint was intentionally developed in detail to ensure completeness and internal consistency, this depth inevitably expands its length and may appear to reduce immediate practicality. However, the accompanying implementation guidelines, embedded within the evaluation and monitoring sections, are designed precisely to translate this complexity into actionable steps. Users are encouraged to adapt and apply selected elements according to their institutional context and operational capacity, rather than deploying the entire framework at once. The indicative timelines provided aim only to convey the relative scope of effort and progression toward objectives, offering flexibility for adaptation within different implementation realities.

## 6.2 Structure of the Blueprint

The Blueprint comprises six interconnected strategic axes that collectively address the full spectrum of gender equality challenges across the green energy education-to-employment pipeline. This six-axis structure emerged from the recognition that sustainable gender equality requires simultaneous action at multiple levels and cannot be achieved through fragmented, single-sector interventions. The framework positions gender equality as a central organizing principle rather than a supplementary consideration, with each axis addressing specific barriers while contributing to systemic transformation.

Gender equality in green energy requires interventions spanning individual, institutional, and systemic levels. Three cross-cutting strategic imperatives unite the six axes: strengthening policy enforcement mechanisms that translate commitments into action, developing comprehensive mentoring and career support systems providing sustained scaffolding for women's advancement, and establishing intersectoral collaboration frameworks connecting education, industry, government, and civil society in coordinated effort. These imperatives cannot be addressed by any single axis—they require the integrated approach this structure provides.



Figure 22. The Gender-responsive Blueprint

The six axes function as an interdependent ecosystem. Increasing women's access to training (Axis A) achieves little if curricula and teaching methods alienate them (Axis B). Women who complete training require mentoring and career support (Axis C) to navigate workplace transitions. Individual institutional efforts remain fragile without policy frameworks (Axis D) mandating action and creating accountability. Progress stalls when education, industry, and community actors work in isolation rather than partnership (Axis E). All interventions risk impermanence without sustainability mechanisms and evaluation systems (Axis F) ensuring impact endures and scales.

This interconnected structure enables diverse actors to engage at points relevant to their roles while understanding how their actions contribute to broader systemic change. The framework is intentionally non-linear—users may enter through any axis based on their organizational mandate, capacity, or strategic opportunities, then expand engagement across complementary axes as implementation advances.



## Axis A: Access & Participation

**Strategic Focus:** Eliminating barriers preventing women from entering green energy education and careers.

This axis addresses the foundational challenge of ensuring women can access training opportunities and make informed career decisions. It recognizes that access barriers operate at multiple levels—from early educational experiences shaping occupational aspirations, through family and community attitudes discouraging non-traditional choices, to economic constraints making training financially unviable, to institutional recruitment and admissions practices that inadvertently exclude women.

The axis encompasses interventions spanning the pre-enrollment pipeline: early educational engagement challenging gender stereotypes before career decisions solidify, targeted recruitment campaigns providing visibility into accessible pathways, financial support mechanisms addressing training costs and hidden expenses, inclusive admissions policies recognizing diverse educational backgrounds, community and family engagement programs addressing cultural resistance, and specialized approaches for marginalized groups facing compounded barriers including rural women, immigrants, women with disabilities, and those with caregiving responsibilities.

## Axis B: Curriculum & Pedagogy Reform

**Strategic Focus:** Transforming educational content and delivery to create equitable, inclusive learning environments.

This axis addresses the critical recognition that gender-neutral approaches to curriculum and teaching perpetuate inequality by failing to acknowledge how content selection, examples used, teaching methodologies, assessment approaches, and classroom dynamics differentially affect women's learning experiences and outcomes. It provides comprehensive guidance for transforming what is taught and how it is taught to ensure women encounter educational environments where they are visible, valued, and set up for success.

The axis encompasses systematic curriculum content review and redesign integrating gender dimensions of energy systems, development of learning materials featuring diverse representation and contexts, pedagogical transformation emphasizing collaborative and inclusive teaching methods, comprehensive faculty development equipping educators with gender-responsive competencies, industry-aligned competency frameworks balancing technical skills with essential interpersonal capabilities, and strategies for achieving gender balance among teaching faculty who serve as crucial role models.

## Axis C: Mentoring & Career Support

**Strategic Focus:** Building comprehensive support systems spanning exploration through leadership advancement.

This axis addresses the substantial infrastructure gap in structured support systems enabling women to navigate male-dominated educational and workplace environments successfully. It recognizes that women face distinct challenges at each career stage—from building confidence to pursue non-traditional careers, through navigating educational environments as minorities, to establishing credibility in workplaces, advancing to leadership positions, and sustaining careers over decades. Generic support systems designed for majority populations prove insufficient; women require tailored mentoring, sponsorship, professional networks, and career guidance addressing gender-specific barriers.

The axis provides frameworks for comprehensive career support spanning the entire continuum: pre-enrollment mentorship connecting prospective students with current students and graduates who can provide authentic insights and reduce uncertainty, structured student mentorship programs pairing

learners with professionals who guide educational navigation and workplace preparation, industry-education partnership mechanisms facilitating smooth career transitions with designated support, workplace mentorship and sponsorship programs where mentorship provides guidance and sponsorship actively advocates for advancement opportunities, leadership development pathways preparing women for management and executive roles, and long-term career support mechanisms including professional networks, re-entry programs, and ongoing development opportunities.

#### Axis D: Policy & Governance

**Strategic Focus:** Establishing mandatory frameworks with robust enforcement creating systemic accountability for gender equality.

This axis addresses the fundamental challenge that aspirational policy commitments without implementation mechanisms, adequate resources, enforcement capacity, and accountability systems produce symbolic gestures rather than substantive change. It recognizes that voluntary approaches depending on institutional goodwill and champion leadership prove insufficient for systemic transformation. Sustainable gender equality requires policy frameworks making action mandatory, providing implementation guidance, allocating budgets, establishing monitoring systems, and creating consequences for non-compliance alongside recognition for leadership.

The axis provides guidance for policy development and implementation across institutional, regional, national, and European levels: conducting policy audits identifying gaps, contradictions, and implementation failures, developing mandatory gender equality frameworks establishing minimum requirements with specific compliance standards, creating cross-ministerial coordination mechanisms ensuring coherence across education, labor, energy, and gender equality policy domains, implementing gender-responsive budgeting requiring resource allocation aligned with stated commitments, establishing enforcement and accountability systems with both sanctions for non-compliance and incentives rewarding exemplary performance, developing comprehensive monitoring and evaluation frameworks with transparent public reporting, and institutionalizing stakeholder engagement in policy design and oversight.

#### Axis E: Community & Industry Engagement

**Strategic Focus:** Creating multi-stakeholder collaboration ecosystems addressing gender inequality holistically.

This axis addresses the fundamental limitation of fragmented, sector-specific interventions attempting to solve systemic problems. Gender inequality in green energy stems from interconnected barriers spanning education systems, labor markets, workplace cultures, family attitudes, community norms, and policy frameworks. Sustainable change requires coordinated action among educational institutions, employers, government agencies, community organizations, women's advocacy groups, and professional associations working toward shared objectives through formal partnership structures.

The axis provides frameworks for building and sustaining effective collaboration: establishing multi-stakeholder partnership structures with clear governance, shared objectives, resource commitments, and joint accountability, developing industry partnership models for inclusive recruitment and workplace culture transformation, implementing community outreach and awareness-building strategies engaging families and diverse populations, leveraging civil society and women's organizations' specialized expertise in addressing barriers women face, creating professional networks increasing role model visibility and peer support, and designing incentive structures motivating industry participation through procurement preferences, tax benefits, certification programs, and public recognition.

## Axis F: Sustainability & Evaluation

**Strategic Focus:** Ensuring interventions endure, scale, demonstrate impact, and continuously improve.

This axis addresses the critical challenge of making gender equality initiatives permanent rather than temporary, scalable rather than localized, evidence-based rather than assumption-driven, and continuously improving rather than static. It recognizes that short-term projects produce short-term results unless deliberately designed for sustainability. Gender equality requires long-term commitment transcending funding cycles, champion leadership changes, and political shifts. This axis provides the mechanisms transforming initiatives into institutional culture, embedded practices, and permanent infrastructure.

The axis encompasses approaches to sustainability and evidence generation: developing theory of change-based evaluation frameworks establishing clear causal pathways from interventions to outcomes, implementing systematic gender-disaggregated data collection and monitoring systems enabling transparency and accountability, creating learning and knowledge management systems capturing effective practices and implementation lessons, designing institutionalization strategies embedding gender equality into organizational policies, budgets, and structures, developing scaling and replication mechanisms enabling geographic and sectoral expansion, establishing financial sustainability through diversified funding beyond project grants, implementing accountability and quality assurance with independent oversight, and creating continuous improvement processes using evidence to inform adaptations.

## 6.3 Axes A – Access & Participation

### 6.3.1 Strategic Focus and Objectives

Axis A addresses the foundational challenge of ensuring equitable access to green energy education and career pathways for women. This axis recognizes that women's underrepresentation in the green energy sector stems from interconnected barriers operating across multiple levels: individual decision-making shaped by limited information and pervasive stereotypes, institutional practices in recruitment and admissions that inadvertently perpetuate exclusion, and systemic factors including socio-cultural norms, economic constraints, and inadequate support infrastructures. The **strategic objective** is to dismantle these barriers through coordinated interventions that span the entire pathway from early educational engagement through entry into vocational training and transition to employment.

The **scope** encompasses both direct access obstacles and enabling conditions necessary for women's meaningful participation. Direct obstacles include gender stereotypes that shape occupational aspirations from an early age, insufficient career guidance and information about opportunities in green energy, financial barriers that make training economically unviable for many women, and institutional recruitment practices that fail to reach or attract diverse female candidates. Enabling conditions require deliberate cultivation through financial support mechanisms, inclusive admissions policies, community and family engagement strategies, and targeted approaches for marginalized groups facing compounded barriers including rural women, migrants, women with disabilities, and those with caregiving responsibilities.

**Success** in this axis demands a multi-level implementation approach addressing individual empowerment through improved information and financial access, institutional transformation through reformed recruitment and admissions practices, and systemic change through policy frameworks, stakeholder coordination, and cultural shifts in how green energy careers are perceived and communicated. The ultimate objective is not simply to increase the number of women entering green energy education programmes, but to ensure that access pathways are sustainable, equitable, and capable of supporting diverse women's successful transition from education to meaningful careers in the sector.

### 6.3.2 Key intervention areas

Access interventions are organized into **three strategic tiers** reflecting their relationship to the underlying barriers and their interdependencies in implementation. Tier 1 interventions address the foundational cultural and attitudinal barriers that shape occupational aspirations and career choices from an early age. Without addressing these root causes, subsequent interventions face limited effectiveness as they operate within systems where gender stereotypes remain unchallenged. Tier 2 interventions create the enabling conditions for access by removing practical information and economic barriers that prevent women from acting on their interest in green energy careers. Tier 3 interventions establish the institutional mechanisms through which access is operationalized. This tiered approach recognizes that sustainable change requires simultaneous action across all levels while acknowledging that foundational interventions create the conditions necessary for institutional mechanisms to function effectively.

Tier	Strategic Focus	Intervention Areas	Primary Target	Implementation Timeline
<b>Tier 1: Foundational</b>	Addressing root causes of exclusion	<ul style="list-style-type: none"> <li>Early-stage educational engagement</li> <li>Community and family engagement</li> </ul>	Cultural norms, gender stereotypes, family attitudes	<ul style="list-style-type: none"> <li>Long-term, sustained effort; begin immediately</li> </ul>
<b>Tier 2: Critical Enablers</b>	Removing practical barriers to access	<ul style="list-style-type: none"> <li>Financial support mechanisms</li> <li>Information provision and career guidance</li> </ul>	Economic constraints, information gaps	<ul style="list-style-type: none"> <li>Medium-term; requires resource allocation</li> </ul>
<b>Tier 3: Institutional Mechanisms</b>	Operationalizing access pathways	<ul style="list-style-type: none"> <li>Targeted recruitment strategies</li> <li>Inclusive admissions practices</li> <li>Targeted approaches for marginalized groups</li> </ul>	Institutional practices, systemic structures	<ul style="list-style-type: none"> <li>Short to medium-term; requires policy frameworks</li> </ul>

Table 5. Foundation tiers of Axis A

### Tier 1: Foundational Interventions

- Early-stage educational engagement** challenges gender stereotypes before occupational aspirations solidify, typically during primary and lower secondary education. This requires systematic integration of green energy content into science curricula featuring diverse role models, hands-on activities demonstrating the environmental and social dimensions of energy systems, and explicit counter-stereotypical messaging about technical careers. Educational institutions should establish partnerships with VET providers and industry to facilitate school visits, job shadowing opportunities, and interactive demonstrations that make green energy careers tangible and accessible. Success indicators include increased female student interest in STEM subjects at lower secondary level and diversification of career aspirations expressed in career guidance sessions.
- Community and family engagement** recognizes that family attitudes and community norms fundamentally shape educational and career choices, particularly in contexts where traditional



gender roles remain influential. Interventions must engage parents and guardians through information sessions explaining green energy career opportunities, economic prospects, and the compatibility of technical careers with diverse life paths. Community-based awareness campaigns should feature local female role models, highlight success stories of women in the sector, and address specific cultural concerns through culturally adapted materials and messengers. Faith-based organizations, community centers, and local media outlets serve as critical channels for reaching families. Success indicators include measurable shifts in parental attitudes toward daughters pursuing technical education and increased family support reported by female applicants.

## Tier 2: Critical Enablers

- **Financial support mechanisms** address the economic barriers preventing women from accessing training, including both direct costs and opportunity costs of foregone income. Comprehensive financial support includes scholarships covering tuition and materials, stipends or paid internships providing income during training, subsidized or free childcare services for women with caregiving responsibilities, and transportation allowances where geographic distance creates barriers. Financial mechanisms should prioritize women from marginalized groups facing compounded economic disadvantages. Critically, financial support must be designed to avoid stigmatization, with support integrated into standard pathways rather than positioned as special assistance. Success indicators include increased application rates from economically disadvantaged women and reduced dropout rates due to financial constraints.
- **Information provision and career guidance** ensures that women have access to accurate, comprehensive, and inspiring information about green energy education and career pathways. This requires developing accessible information materials showcasing diverse career trajectories, salary ranges, advancement opportunities, and work-life integration possibilities. Career guidance counselors in schools and employment services must receive training on green energy sector opportunities and gender-responsive counseling approaches that actively challenge stereotypes rather than reinforcing them. Digital platforms, social media campaigns, and peer-to-peer information networks extend reach beyond formal guidance services. Success indicators include measurable increases in female inquiries about green energy programs and improved knowledge of career pathways among target populations.

## Tier 3: Institutional Mechanisms

- **Targeted recruitment strategies** transform how VET institutions and employers identify, reach, and attract female candidates. This includes advertising programs and positions through channels that reach diverse female audiences, using inclusive imagery and language emphasizing belonging rather than exceptional achievement, and establishing partnerships with women's organizations and community groups serving as trusted intermediaries. Recruitment materials must feature diverse female role models in technical roles and explicitly address concerns about workplace culture and career progression. Open days, taster sessions, and trial periods reduce the risk of commitment and allow women to assess fit. Success indicators include diversification of recruitment channels, increased female application rates, and improved conversion from inquiry to enrollment.
- **Inclusive admissions practices** recognize diverse educational backgrounds and lived experiences as assets rather than deficits. This requires reviewing admissions criteria to identify and remove requirements that disproportionately exclude women without serving valid educational purposes, establishing recognition of prior learning mechanisms that credit informal skills and experiences, and creating bridge programs or foundation courses enabling women with non-traditional backgrounds to access VET programs. Admissions processes should employ structured evaluation reducing scope for unconscious bias and provide clear, transparent



information about requirements and pathways. Success indicators include increased enrollment of women from diverse educational backgrounds and reduced disparities in admission rates.

### 6.3.3 Implementation Pathways

Access interventions require coordinated action across individual, institutional, and systemic levels. Individual-level pathways focus on reaching and influencing women's career decision-making directly through information, inspiration, and financial enablement. Institutional-level pathways transform how VET providers and employers operate their access mechanisms, including recruitment, admissions, and targeted support. Systemic-level pathways establish the policy frameworks, multi-stakeholder coordination structures, and resource allocation mechanisms enabling sustained implementation. Each level requires distinct actors, timelines, and success metrics, yet all three must advance simultaneously for comprehensive access transformation.

#### Individual-Level Implementation

- **Early-stage educational engagement** requires coordinated action by primary and secondary schools, VET providers, and industry partners. Schools should integrate green energy content into existing science curricula at ages 10-14, featuring diverse role models and emphasizing sustainability dimensions that resonate with young women's values. VET providers and green energy companies must establish structured school partnership programs offering annual school visits, hands-on workshops demonstrating solar panel installation or energy auditing, and job shadowing opportunities where students observe female professionals in technical roles. The **Ambassador Program** model developed by the GaTE project provides a replicable framework: successful women in green energy sectors conduct webinars and outreach events to inspire potential candidates, equipped with training and materials to effectively communicate career pathways. Schools should designate a STEM coordinator responsible for organizing these activities annually, with success measured through pre- and post-intervention surveys tracking shifts in career interest among female students.
- **Community and family engagement** requires multi-channel strategies addressing parents, guardians, and community influencers who shape career decisions. VET providers should organize annual information evenings specifically for families, featuring female graduates and current students who address common concerns about technical careers, workplace culture, and work-life integration. Materials must be culturally adapted and translated where linguistic minorities are present. Community-based organizations, particularly women's organizations and faith-based groups serving as trusted messengers, should receive partnership grants to conduct awareness sessions within their networks. The **Awareness Campaign Strategy and Recruiting Campaign Toolkit** developed by the GaTE project provide templates for messaging, branding materials, and multimedia content including professionally produced videos showcasing women's success stories. Local authorities and public services identified through stakeholder mapping should collaborate in disseminating information through community centers, libraries, and social service touchpoints. Success indicators include measurable increases in positive family attitudes documented through surveys administered during VET application processes.
- **Financial support mechanisms and information provision** require institutional commitment backed by policy frameworks. VET providers and government education authorities must establish comprehensive scholarship programs covering not only tuition but also materials, tools, and examination fees, with dedicated allocations for women in technical green energy programs. Paid internship programs co-funded by industry partners address the opportunity cost of foregone income, with companies committing to structured placements of minimum three-month duration providing mentorship alongside compensation. The **AI-driven career pathing tool** developed by the GaTE project supports personalized career guidance, enabling counselors



to provide data-informed advice about educational pathways, salary ranges, and progression opportunities in green energy careers. Career guidance officers should receive mandatory training through specialized courses (such as the lifelong learning course for career guidance officers developed by GaTE) ensuring they possess updated knowledge of green energy sector opportunities and gender-responsive counseling techniques. VET providers should establish digital information hubs with modular content accessible via mobile devices, featuring video testimonials, interactive career exploration tools, and direct communication channels with current students and recent graduates. Success metrics include conversion rates from inquiry to application and documented improvements in female applicants' knowledge of career pathways.

### Institutional-Level Implementation

- **Targeted recruitment strategies** require VET providers and employers to systematically audit and transform their outreach approaches. Institutions should conduct annual recruitment audits examining where advertisements are placed, what imagery and language is used, and which channels reach diverse female audiences. Partnerships with women's organizations, community groups serving marginalized populations, and secondary schools in underserved areas expand reach beyond traditional channels. The Recruiting Campaign Toolkit developed by the GaTE project provides customizable materials including brochures, posters, social media templates, and video content specifically designed to attract female candidates. Recruitment materials must feature diverse women in technical roles, emphasize team collaboration alongside individual achievement, and explicitly address workplace culture and support systems. VET providers should organize quarterly open days with taster sessions allowing women to experience practical activities without commitment, staffed by female students and educators who can address concerns authentically. Employers should establish formal partnerships with VET providers including structured work-integrated learning agreements specifying female participant targets, mentorship requirements, and pathways to employment. The Community of Practice platform developed by the GaTE project facilitates ongoing coordination between VET providers and industry partners. Success indicators include diversification of application sources and measurable increases in female application rates year-over-year.
- **Inclusive admissions practices** require policy reform at institutional and system levels. VET providers must review admissions criteria with a gender equity lens, identifying requirements (such as specific prior courses, examination scores, or physical benchmarks) that disproportionately exclude women without valid educational justification. Recognition of prior learning mechanisms should be established enabling women with non-traditional educational backgrounds or work experience in adjacent fields (such as environmental science, community development, or administrative roles in energy companies) to receive credit toward admission requirements. Bridge programs or foundation courses of 4-12 weeks duration should be offered in advance of standard program start dates, building confidence and competencies for women whose educational backgrounds differ from typical technical pathways. Admissions decisions should employ structured evaluation rubrics reducing subjective assessment and documenting how each criterion relates to program success. Admissions staff require training on unconscious bias and gender-responsive evaluation. VET institutions should publicly report admissions data disaggregated by gender, educational background, and demographic characteristics, creating transparency and accountability. Success metrics include increased enrollment of women from diverse educational pathways and elimination of gender disparities in admission rates.
- **Targeted approaches for marginalized groups** require intersectional analysis and specialized interventions addressing compounded barriers. VET providers should conduct participatory assessment with representatives from marginalized groups (rural women, migrants, ethnic minorities, women with disabilities, women with caregiving responsibilities) identifying specific access obstacles and co-designing solutions. For rural women facing geographic



isolation, distance learning options, intensive block delivery (compressed schedules enabling travel), and accommodation support for residential periods may be necessary. For migrant and ethnic minority women, multilingual materials, cultural liaison support, and bridging courses addressing language alongside technical content are essential. For women with disabilities, comprehensive accessibility audits of facilities, learning materials, and practical training equipment must be conducted with accommodations integrated as standard rather than exceptional arrangements. For women with caregiving responsibilities, on-site childcare facilities, flexible scheduling options enabling part-time study, and evening or weekend class alternatives address practical constraints. Partnerships with specialized organizations serving these populations provide expertise, trust relationships, and outreach channels. Dedicated support staff positions or designated coordinators ensure sustained attention to marginalized groups' needs. Success indicators include proportional representation of marginalized groups among enrollees and retention rates comparable to other students.

### Systemic-Level Implementation

- Policy frameworks and resource allocation require government action at national, regional, and local levels. Education ministries should establish mandatory gender equality targets for VET institutions receiving public funding, with annual reporting requirements and consequences for persistent underperformance alongside recognition and additional resources for institutions exceeding targets. Gender-responsive budgeting should be implemented requiring explicit allocation of resources to access interventions, with line items for scholarships, childcare services, awareness campaigns, and staff training visible in institutional budgets. National qualification frameworks should integrate gender equality competencies into VET educator requirements, ensuring all staff possess foundational knowledge of gender-responsive education. Local and regional authorities should establish coordination mechanisms bringing together education departments, economic development agencies, social services, and community organizations in joint planning for women's access to green energy careers. The Policy Influence Toolkit and stakeholder engagement frameworks developed through the GaTE project provide guidance for advocacy, policy dialogue, and collaborative policy development processes. Success indicators include policy adoption rates, budget allocations as percentage of total VET expenditure, and institutional compliance rates.
- Multi-stakeholder coordination structures must be formalized through partnership agreements, coordination bodies, and shared accountability mechanisms. Regional or national platforms should be established convening VET providers, green energy industry representatives, policymakers, women's organizations, and community groups in quarterly coordination meetings with rotating chair responsibilities ensuring shared ownership. Partnership agreements should specify mutual commitments including industry provision of internships, VET integration of industry-current content, policy support from government, and community organization involvement in outreach. The GaTE project's Community Building Events model—including regional workshops focused on specific access dimensions (enrollment strategies, career development, policy frameworks) and an international conference enabling cross-country learning—demonstrates effective stakeholder engagement approaches. Memoranda of Understanding should formalize partnerships with clear specifications of resources contributed, activities delivered, and outcomes monitored. Joint funding applications for regional or national initiatives leveraging multiple partners' resources and expertise create sustainability beyond individual organizational budgets. Success metrics include number of active partnership agreements, frequency of coordination activities, and documented examples of coordinated initiatives addressing access barriers.

### 6.3.4 Success Indicators and Monitoring

Effective monitoring requires clear, measurable indicators aligned with intervention objectives. Indicators should be disaggregated by gender, age, geographic location, and marginalized group status where relevant, enabling identification of differential impacts and targeted improvement. Data collection must be integrated into existing administrative systems rather than creating parallel processes, ensuring sustainability and reducing burden. Monitoring should occur at three temporal scales: immediate output indicators measured within 6 months, intermediate outcome indicators measured annually, and long-term impact indicators measured over 3-5 years.

Intervention Area	Immediate Outputs (0-6 months)	Intermediate Outcomes (1-2 years)	Long-term Impact (3-5 years)
<b>Early-stage educational engagement</b>	<ul style="list-style-type: none"> <li>Number of school partnerships established</li> <li>Students reached through activities</li> <li>Female student participation rates</li> </ul>	<ul style="list-style-type: none"> <li>Shift in STEM interest among female students (pre/post survey)</li> <li>Secondary school subject choices in technical areas</li> </ul>	<ul style="list-style-type: none"> <li>Female enrollment rates in VET green energy programs</li> <li>Career choices of program alumni</li> </ul>
<b>Community and family engagement</b>	<ul style="list-style-type: none"> <li>Information events conducted</li> <li>Families reached</li> <li>Community organization partnerships</li> </ul>	<ul style="list-style-type: none"> <li>Measurable shift in family attitudes (survey data)</li> <li>Parental support reported by female applicants</li> </ul>	<ul style="list-style-type: none"> <li>Sustained female application rates</li> <li>Retention and completion rates</li> </ul>
<b>Financial support mechanisms</b>	<ul style="list-style-type: none"> <li>Scholarships awarded</li> <li>Paid internships provided</li> <li>Financial support amounts</li> </ul>	<ul style="list-style-type: none"> <li>Application rates from economically disadvantaged women</li> <li>Dropout rates due to financial constraints</li> </ul>	<ul style="list-style-type: none"> <li>Completion rates by socioeconomic status</li> <li>Employment outcomes post-training</li> </ul>
<b>Information and career guidance</b>	<ul style="list-style-type: none"> <li>Materials distributed</li> <li>Guidance sessions delivered</li> <li>Website/platform engagement</li> </ul>	<ul style="list-style-type: none"> <li>Inquiries from female candidates</li> <li>Knowledge of pathways (assessment scores)</li> </ul>	<ul style="list-style-type: none"> <li>Quality of career decisions (satisfaction surveys)</li> <li>Career progression trajectories</li> </ul>
<b>Targeted recruitment</b>	<ul style="list-style-type: none"> <li>Recruitment channels diversified</li> <li>Materials produced and distributed</li> <li>Open days and taster sessions held</li> </ul>	<ul style="list-style-type: none"> <li>Female application rates</li> <li>Diversity of applicant sources</li> <li>Conversion from inquiry to application</li> </ul>	<ul style="list-style-type: none"> <li>Sustained increase in female enrollments</li> <li>Reputation as inclusive institution</li> </ul>
<b>Inclusive admissions</b>	<ul style="list-style-type: none"> <li>Admissions criteria reviewed</li> <li>Bridge programs launched</li> <li>Staff trained</li> </ul>	<ul style="list-style-type: none"> <li>Enrollment of women from non-traditional backgrounds</li> <li>Admission rate disparities by gender</li> </ul>	<ul style="list-style-type: none"> <li>Completion rates by entry pathway</li> <li>Employment outcomes by background</li> </ul>
<b>Marginalized group approaches</b>	<ul style="list-style-type: none"> <li>Specialized interventions implemented</li> </ul>	<ul style="list-style-type: none"> <li>Proportional representation in applicant pool</li> <li>Enrollment rates by marginalized status</li> </ul>	<ul style="list-style-type: none"> <li>Retention and completion parity</li> <li>Employment outcomes by intersectional identity</li> </ul>

Table 6. Core indicators for Axis A

VET institutions should establish baseline measurements before intervention implementation, enabling measurement of change over time. Monitoring systems should integrate gender and intersectional data

fields into standard admissions, enrollment, and completion databases, with automated dashboards enabling real-time tracking. Annual reporting to stakeholders including funders, policymakers, and community partners creates accountability and enables course correction. Institutions should designate a monitoring focal point responsible for coordinating data collection, analysis, and reporting, with time allocated within existing staff roles rather than creating new positions. The Observatory for Gender Equality in Green Energy established through the GaTE project provides a model for systematic monitoring across multiple institutions and countries, enabling benchmarking and identification of effective practices.

Qualitative monitoring through annual focus groups with female students, exit interviews with program completers and non-completers, and periodic surveys of families and community partners provides contextual understanding of quantitative trends. Monitoring data should be disaggregated and analyzed for differential outcomes, with specific attention to whether interventions are reaching and benefiting marginalized groups proportionally. Where disparities persist or widen, immediate investigation and intervention adjustment is required rather than waiting for long-term impact data.

### 6.3.5 Implementation Guidelines

Successful implementation of Axis A interventions requires strategic sequencing, clear role allocation, and adequate resource commitment. The following guidelines support actors at all levels in translating the Blueprint into action.

Actor	Primary Responsibilities	Required Capacities
VET Institutions	Implement recruitment reforms, admissions policy changes, and student support systems; collect monitoring data	Gender equality expertise, data management, partnership coordination
Industry Partners	Provide paid internships, participate in Ambassador Programs, co-fund financial support	Commitment to diversity targets, mentorship capacity, structured learning environments
Government Authorities	Establish policy frameworks, allocate resources, mandate targets, convene stakeholder coordination	Policy development expertise, budget authority, enforcement mechanisms
Community Organizations	Conduct community-based awareness, provide trusted messenger networks, support marginalized groups	Community relationships, cultural competence, grassroots mobilization capacity
Schools	Integrate early-stage interventions, facilitate partnerships with VET providers, engage families	STEM teaching capacity, career guidance resources, family engagement experience

Table 7. Implementation guidelines for Axis A

Implementation should be adapted to national and regional contexts while maintaining fidelity to core principles. In contexts with strong VET systems and moderate gender gaps, emphasis should be on institutional mechanisms and marginalized group approaches. In contexts with weak VET infrastructure and severe gender gaps, priority should be on foundational cultural change and financial enablers. In contexts with restrictive gender norms, community and family engagement becomes critical, potentially requiring extended timelines and culturally adapted messaging.

## 6.4 Axis B: Curriculum & Pedagogy Reform

### 6.4.1 Strategic Focus and Objectives

Axis B addresses the fundamental challenge that ostensibly gender-neutral curricula and teaching practices systematically disadvantage women by perpetuating masculine norms, prioritizing male-dominated histories, and employing pedagogical approaches that fail to recognize and accommodate diverse learning contexts. This axis recognizes that women's underrepresentation and attrition in green energy vocational education stems not simply from individual capability deficits but from educational environments where content selection, role model visibility, teaching methodologies, assessment approaches, practical equipment design, and classroom dynamics reflect and reinforce male dominance in the sector. The **strategic objective** is to transform both educational content and pedagogical delivery to create learning environments where women encounter curricula that acknowledge their presence and contributions, teaching methods that recognize diverse learning needs, materials that feature representative role models, and practical training contexts designed for their full participation.

The **scope** encompasses multiple interdependent dimensions of educational transformation. Content dimensions require systematic integration of gender analysis into green energy technical subjects, explicit connections between sustainability transitions and gender equality, enhanced representation of women as knowledge producers and technical innovators throughout educational materials, and recognition of diverse social contexts in examples and case studies. Pedagogical dimensions demand transformation beyond inclusion of diverse examples to fundamentally reconceive teaching approaches, emphasizing collaborative learning over competitive dynamics, practical application alongside theoretical mastery, and teaching methods accommodating diverse educational backgrounds rather than assuming uniform preparation. Material and infrastructure dimensions address the physical realities of training environments, ensuring safety equipment fits diverse bodies, practical exercises accommodate varying physical capabilities, and learning spaces foster belonging rather than exclusion. Systemic positioning dimensions recognize that curriculum reform must extend beyond individual courses to address how green energy education is valued relative to other educational pathways, how early educational experiences shape later trajectories, and how educator capacity fundamentally enables or constrains all other reforms.

**Success** in this axis requires transformation across individual learning experiences, institutional curricula and pedagogical practices, and systemic educational frameworks. Individual-level success manifests through women's enhanced engagement with educational content, increased confidence in technical competencies, sustained motivation despite minority status, and successful knowledge acquisition leading to qualification completion. Institutional-level success requires comprehensive curriculum review processes integrating gender perspectives systematically rather than superficially, robust faculty development ensuring educators possess competencies for gender-responsive teaching, reformed assessment practices recognizing diverse demonstrations of competency, and physical learning environments designed for universal accessibility. Systemic-level success demands restructuring educational hierarchies that devalue vocational pathways, establishing early educational interventions shaping aspirations before gender stereotypes solidify, coordinating curriculum standards across institutions to embed gender equality as foundational rather than optional, and creating accountability mechanisms ensuring reforms are sustained rather than dependent on individual champions. The ultimate objective is comprehensive educational transformation where gender-responsive curriculum and pedagogy become normalized practice rather than exceptional innovation.

### 6.4.2 Key Intervention Areas

Curriculum and pedagogy interventions are organized into **three strategic tiers** reflecting foundational to operational interventions. Tier 1 interventions address the systemic positioning and early-stage foundations that shape who pursues green energy education and how the field is perceived. Without

addressing educational hierarchies that devalue vocational pathways and early experiences that channel students away from technical fields, subsequent curriculum reforms reach only those who overcome systemic barriers to arrive at VET programs. Tier 2 interventions transform core educational content and delivery, addressing what is taught and how teaching occurs within existing institutional structures. Tier 3 interventions create enabling conditions through educator capacity development, material resources, and institutional support systems necessary for sustained implementation. This tiered approach recognizes that curriculum reform requires simultaneous action across systemic positioning, content transformation, and implementation capacity while acknowledging that foundational interventions expand access to benefits of reformed curricula.

Tier	Strategic Focus	Intervention Areas	Primary Target	Implementation Timeline
<b>Tier 1: Systemic Positioning</b>	Expanding access to and value of reformed education	<ul style="list-style-type: none"> <li>Educational system positioning and status elevation</li> <li>Early-stage curriculum interventions</li> </ul>	<ul style="list-style-type: none"> <li>VET perception as "second option"</li> <li>Pre-VET career formation in primary/secondary education</li> </ul>	Long-term institutional and policy transformation; begin immediately
<b>Tier 2: Content and Delivery Transformation</b>	Transforming educational content and teaching practice	<ul style="list-style-type: none"> <li>• Gender-responsive curriculum content development</li> <li>Pedagogical transformation and inclusive teaching methods</li> </ul>	<ul style="list-style-type: none"> <li>Content bias and gaps</li> <li>Teaching methods and classroom dynamics</li> <li>Evaluation practices and standards</li> </ul>	Medium-term; requires curriculum development cycles and faculty engagement
<b>Tier 3: Implementation Capacity Building</b>	Building capacity and infrastructure for sustained reform	<ul style="list-style-type: none"> <li>Instructor and educator development</li> <li>Material and infrastructure adaptation</li> <li>Institutional support systems and resources</li> </ul>	<ul style="list-style-type: none"> <li>• Educator competencies and preparedness</li> <li>Physical learning environments and equipment</li> <li>Support structures and accountability</li> </ul>	Short to medium-term; requires resource allocation and systematic implementation

Table 8. Foundation tiers of Axis B

### Tier 1: Systemic Positioning Interventions

- **Educational system positioning and status elevation** addresses the structural challenge that vocational education is perceived and institutionalized as a "second option" pathway for students deemed unsuitable for academic tracks, with this devaluation particularly affecting women who face compounded stigma when pursuing technical vocational fields. Interventions require coordinated action across secondary and tertiary education systems to restructure pathways emphasizing equivalence rather than hierarchy. Educational authorities must reform tracking systems that channel students into vocational or academic paths based on early performance assessments, instead establishing flexible pathways enabling movement between educational types throughout learning trajectories. Policy frameworks should establish parity in public investment per student across vocational and academic pathways, resource allocation for modern facilities and equipment, and educator qualifications and compensation. Marketing and communication campaigns at national and regional levels must reposition vocational green



energy education as prestigious career preparation offering competitive salaries, advancement opportunities, and meaningful contributions to sustainability transitions. Educational institutions should establish formal articulation agreements enabling vocational graduates to access university programs through recognition of prior learning, creating visible pathways from VET to advanced qualifications. Success indicators include shifts in societal perceptions measured through surveys, increased applications from high-achieving students, and improved retention reflecting reduced stigma.

- **Early-stage curriculum interventions** recognize that gender stereotypes about technical careers and occupational aspirations form during primary and lower secondary education, before students enter vocational programs. Interventions must systematically integrate green energy sustainability content into standard science curricula at ages 8-14, presenting energy systems not primarily as engineering challenges but as interconnected social, environmental, and technical systems where diverse competencies contribute to solutions. Curriculum materials should feature equal representation of women and men as scientists, engineers, policymakers, and community leaders driving energy transitions, with explicit attention to contemporary rather than exclusively historical figures. Teaching units should emphasize collaborative problem-solving, community impact, and environmental justice dimensions of energy systems, framing technical skills as means to social and environmental goals rather than endpoints. Primary and secondary schools should establish partnerships with vocational institutions enabling regular student visits to modern green energy training facilities, dispelling outdated perceptions of vocational education as fallback option occurring in inferior settings. Career guidance delivered at ages 11-15 must explicitly address and counter gender stereotypes about technical careers, using structured activities where students explore career options without gender markers before revealing occupational titles. Family engagement strategies should inform parents and guardians about green energy career pathways and economic opportunities through information sessions, digital resources, and student-parent joint activities. Success indicators include diversification of career interests expressed by girls in lower secondary education, reduced gender gaps in STEM subject selections at upper secondary level, and measurable shifts in parental attitudes.

## Tier 2: Content and Delivery Transformation

- **Gender-responsive curriculum content development** transforms what is taught, integrating gender perspectives as fundamental analytical dimensions rather than supplementary additions. Technical curriculum units on renewable energy systems should explicitly analyze how energy infrastructure decisions affect women and men differentially, examining access to energy services, participation in energy sector employment, leadership in energy governance, and representation in energy policy-making. Curriculum content must feature diverse female role models not as exceptional outliers but as representative of women's contributions across all technical functions, from installation and maintenance to systems design and energy planning. Case studies and practical examples should reflect diverse social contexts where women work in green energy, including rural electrification projects, community energy cooperatives, and social enterprise models alongside conventional corporate settings. Learning materials should use inclusive language avoiding masculine defaults and gender-stereotyped role assignments, employ diverse examples ensuring both women and men appear equally across technical, leadership, and support roles, and feature imagery showing women as active technical agents rather than passive recipients or supportive observers. Curriculum should integrate work-life balance competencies including time management, boundary-setting, and workplace negotiation skills, recognizing these as professional competencies rather than personal management issues. Institutions should establish curriculum review processes examining existing content through gender lens, identifying masculinized assumptions, male-dominated examples, and gender-blind analyses that obscure how energy systems affect diverse populations. Success indicators include quantifiable increases in female representation in



examples and images, integration of gender analysis into technical units, and student assessments demonstrating understanding of gender dimensions in energy systems.

- **Pedagogical transformation and inclusive teaching methods** fundamentally reconceive how teaching occurs, moving beyond lecture-based knowledge transmission toward collaborative, participatory, and practice-integrated approaches that recognize diverse learning styles and educational backgrounds. Teaching should emphasize team-based learning where students work in gender-balanced groups on complex problems requiring diverse competencies, explicitly valuing planning, communication, and coordination skills alongside technical execution. Problem-based learning approaches should present realistic scenarios requiring analysis of social contexts, stakeholder needs, and systemic constraints rather than purely technical optimization exercises. Practical training should integrate iterative experimentation and guided reflection rather than demonstrating single correct procedures, normalizing trial-and-error learning and reducing pressure for immediate mastery that disproportionately discourages women in minority situations. Classroom dynamics require active management to ensure equitable participation, with instructors employing structured protocols for discussions, group work, and practical activities that prevent domination by individuals or demographics. Teaching should explicitly name and address gender dynamics including stereotype threat, imposter syndrome, and social identity threat affecting women's learning in male-dominated contexts, normalizing these as expected responses to minority status rather than individual pathologies. Digital and innovative pedagogies including simulations, virtual laboratories, and multimedia resources should supplement hands-on training, providing additional learning modalities particularly valuable for students with caregiving responsibilities or geographic constraints limiting facility access. Institutions should establish teaching quality frameworks incorporating gender-responsive pedagogy as evaluation criteria, recognize excellence in inclusive teaching through awards and promotion processes, and provide peer observation and feedback mechanisms focused on pedagogical equity. Success indicators include student engagement metrics disaggregated by gender, classroom observation data on participation patterns, and qualitative feedback from female students on learning environment.
- **Assessment reform and competency recognition** transforms how learning is evaluated, recognizing that assessment practices significantly influence who persists in technical education. Assessment methods should diversify beyond timed individual examinations to include portfolio-based assessment demonstrating competency development over time, group projects assessing collaborative skills alongside technical knowledge, practical demonstrations in authentic work contexts, and reflective assignments requiring students to articulate learning and application strategies. Assessment criteria should explicitly value multiple dimensions of competency including problem identification and framing, research and information gathering, planning and project management, team coordination, and communication of technical concepts to diverse audiences, rather than exclusively emphasizing speed of technical execution. Recognition of prior learning mechanisms should enable students with non-traditional educational backgrounds, particularly women entering green energy fields after careers in other sectors or following caregiving periods, to receive credit for relevant competencies acquired through work experience, informal learning, or adjacent formal education. Grading practices should employ criterion-referenced assessment with transparent rubrics rather than norm-referenced grading creating competitive dynamics, and provide formative feedback emphasizing growth and development rather than exclusively summative judgments. Institutions should analyze assessment data disaggregated by gender and educational background, investigating patterns where particular assessment types produce disparate outcomes and revising methods accordingly. Success indicators include elimination of gender gaps in assessment outcomes, increased completion rates among students from diverse backgrounds, and diversification of assessment methods employed.



### Tier 3: Implementation Capacity Building

- **Instructor and educator development** recognizes that curriculum and pedagogical reforms depend fundamentally on educator competencies, commitments, and capacities to implement transformed approaches. Comprehensive faculty development programs must provide initial training on gender-responsive pedagogy, unconscious bias recognition and mitigation, inclusive classroom management, and integration of gender analysis into technical subjects. Training should combine theoretical understanding of how gender operates in educational contexts with practical skills for curriculum content review, learning activity design, classroom dynamic management, and student support. Professional development should be ongoing rather than one-time events, with annual refresher workshops, peer learning communities where educators share experiences and strategies, and access to specialized expertise through consultation with gender equality and pedagogical specialists. Critically, educator development must address resistance and skepticism, providing evidence of how gender-responsive approaches improve outcomes for all students rather than framing interventions as benefiting only women at potential cost to men. Institutions should establish faculty gender equality working groups tasked with curriculum review, pedagogical innovation, and peer support, allocating time within faculty workload rather than relying on volunteer effort. Educator recruitment and retention strategies should prioritize increasing women's representation among technical faculty, recognizing their crucial role modeling function, through targeted recruitment campaigns, family-friendly employment conditions, and career development support addressing barriers women face in technical teaching careers. Success indicators include faculty participation rates in professional development, measurable shifts in teaching practices documented through observation protocols, and increased diversity among teaching staff.
- **Material and infrastructure adaptation** addresses the physical realities that educational environments and equipment designed for male bodies and male-majority contexts create barriers to women's full participation. Safety equipment including protective clothing, footwear, gloves, helmets, and harnesses must be procured in full size ranges appropriate for diverse body types, with explicit requirements in procurement specifications and budget allocations sufficient for comprehensive provision. Practical training equipment and workstations should be assessed for accessibility to users of varying heights, reaches, and physical capabilities, with adjustments including adjustable work surfaces, alternative tools enabling diverse grips and force applications, and assistive technologies where needed. Laboratory and workshop spaces should provide adequate, well-maintained sanitary facilities for all genders, private spaces for religious observations or personal needs, and lockers enabling secure storage of personal items and specialized clothing. Learning spaces should be designed to foster belonging through diverse imagery featuring women in technical roles, ergonomic furniture accommodating extended sitting periods, and environmental conditions (lighting, temperature, acoustics) supporting concentration. Institutions should conduct participatory accessibility audits involving female students and educators in assessing barriers and co-designing solutions, with annual review and improvement cycles. Success indicators include elimination of equipment-related barriers documented through student surveys, completion of accessibility improvements with verified physical modifications, and enhanced sense of belonging reported by women learners.
- **Institutional support systems and resources** establish organizational structures, policies, and dedicated personnel necessary for sustained curriculum reform implementation. Institutions should designate curriculum reform coordinators responsible for leading review processes, coordinating faculty development, monitoring implementation, and serving as resources for educators requiring support in gender-responsive teaching. Gender equality units or designated staff positions provide specialized expertise in analyzing educational practices through gender lens, developing intervention strategies, and supporting implementation across institution. Policies should formalize requirements for curriculum review cycles examining content and



pedagogy through equity lens, establish teaching quality standards incorporating gender-responsive dimensions, mandate faculty development participation in inclusive pedagogy, and create accountability through reporting requirements and quality assurance processes. Dedicated budget lines must support curriculum materials development, procurement of accessible equipment, faculty professional development, external expertise consultation, and innovation initiatives piloting reformed approaches. Institutional leadership must champion reforms through public commitment statements, recognition of exemplary faculty practice, and consequences for persistent failure to meet equity standards. Student support services including academic advising, peer tutoring, counseling, and advocacy offices should receive training in supporting women in male-dominated educational contexts and resources to provide specialized services. Success indicators include existence of dedicated coordination and support roles with adequate resources, policy adoption rates, and institutional culture assessments showing mainstreaming of gender-responsive approaches.

### 6.4.3 Implementation Pathways

Curriculum and pedagogy interventions require coordinated action across individual learning experiences, institutional educational practices, and systemic educational frameworks. Individual-level pathways focus on transforming how students encounter and engage with educational content through reformed curricula, inclusive teaching methods, and accessible learning environments. Institutional-level pathways establish organizational capacities for curriculum development, faculty preparation, resource allocation, and quality assurance enabling systematic implementation. Systemic-level pathways create policy frameworks, coordination mechanisms, and accountability structures embedding gender-responsive education as standard practice across educational systems. Each level requires distinct actors, implementation strategies, and success metrics, yet all three must advance simultaneously for comprehensive educational transformation.

#### Individual-Level Implementation

- **Early-stage curriculum interventions** require primary and secondary schools to systematically integrate green energy and sustainability content into science curricula for students aged 8-14, presenting technical subjects through gender-inclusive framing emphasizing social and environmental dimensions alongside technical mastery. Teachers should receive training and ready-to-use lesson plans featuring diverse role models, collaborative learning activities, and real-world problem scenarios reflecting how energy systems affect diverse communities. The content should explicitly counter occupational stereotypes through structured activities where students explore careers based on interest and values before gender associations are revealed, and through exposure to diverse practitioners via guest speakers, video testimonials, and school visits to modern green energy facilities. Schools should designate STEM coordinators responsible for curriculum integration, partnership development with vocational institutions, and family engagement through information sessions explaining green energy career pathways. Career guidance delivered at ages 11-15 must employ gender-responsive counseling approaches, using structured assessment tools examining interests and capabilities without gender bias, providing comprehensive information about vocational pathways and economic opportunities, and actively challenging stereotypes when students or families express gendered career assumptions. Family engagement materials should feature local women in green energy careers discussing career satisfaction, work-life balance, and income levels, with culturally adapted messaging addressing specific community concerns. Success metrics include shifts in career interest patterns among female students measured through pre- and post-intervention surveys, increased female student selection of technical subjects at upper secondary level, and documented changes in parental attitudes toward daughters pursuing technical vocational education.



- **Gender-responsive curriculum content** delivered in VET programs requires students to encounter learning materials where women appear equally across all technical functions, where case studies reflect diverse social contexts, and where energy systems are analyzed through intersecting technical, social, and gender dimensions. Courses on solar energy installation should feature examples of rural women-led cooperatives alongside corporate installations, wind energy economics should analyze gender dimensions of employment patterns and community benefit distributions, and energy efficiency training should examine how housing design and household dynamics affect energy consumption patterns. Learning modules should explicitly address workplace dynamics women encounter in male-dominated technical fields, providing strategies for handling bias, building credibility, and navigating career advancement, normalizing these challenges as systemic issues requiring strategic responses rather than individual deficits. Digital learning platforms should provide multimedia content accessible to students with varying schedules and responsibilities, including recorded lectures enabling flexible viewing, interactive simulations supporting self-paced skill development, and online discussion forums facilitating peer learning across geographic distances. VET institutions should establish student advisory groups including women from each program cohort who provide ongoing feedback on curriculum content, identify exclusionary materials or examples, and suggest improvements, with institutional commitment to acting on recommendations. Success indicators include student engagement metrics disaggregated by gender showing equivalent participation, content analysis demonstrating gender balance in examples and imagery, and qualitative feedback from female students reporting enhanced sense of belonging and representation.
- **Inclusive teaching methods and classroom dynamics** require instructors to actively structure learning environments ensuring equitable participation and valuing diverse contributions. Teaching should emphasize team-based learning with explicitly gender-balanced group assignments, rotating leadership roles ensuring all students experience coordination responsibilities, and assessment criteria valuing both technical execution and collaborative competencies. Practical training sessions should normalize iterative learning through guided experimentation where instructors model troubleshooting processes, celebrate learning from failures alongside successes, and provide individualized feedback emphasizing improvement rather than comparing student performance. Classroom management must employ structured participation protocols including round-robin sharing ensuring all voices are heard, minimum and maximum speaking times preventing domination, and explicit intervention when interruptions or dismissive responses occur. Instructors should establish clear expectations for respectful interaction in first sessions, proactively address stereotype threat by acknowledging challenges women face as minorities and framing these as responses to contexts rather than individual limitations, and create reporting mechanisms enabling students to confidentially raise concerns about bias or exclusion. Digital pedagogies including virtual laboratories, simulation software, and multimedia tutorials should supplement hands-on training, providing alternative learning modalities valuable for all students and particularly important for those with constraints limiting facility access. Success metrics include classroom observation data showing balanced participation patterns, student evaluation feedback disaggregated by gender, qualitative reports from women on learning environment quality, and retention rates demonstrating reduced attrition among female students.

### Institutional-Level Implementation

- Educational system positioning requires coordinated action by education ministries, vocational education authorities, and institutional leadership to restructure pathways and public perception. National qualification frameworks should establish formal equivalence between vocational and academic qualifications at corresponding levels, enabling vocational graduates to access university programs through recognition of prior learning rather than requiring complete re-



study. Government investment formulas should ensure comparable per-student funding across vocational and academic pathways, infrastructure investment in modern facilities and equipment, and educator compensation parity recognizing equivalent professional qualifications. National campaigns repositioning vocational green energy education must feature successful graduates in diverse technical and leadership roles, present salary and career advancement data demonstrating economic viability, and emphasize contributions to sustainability transitions as socially valued achievements. VET institutions should establish articulation agreements with universities specifying course equivalencies and admission pathways, publicly showcase these pathways through marketing materials and alumni success stories, and provide support services helping vocational students navigate university transition. Regional coordination structures should convene secondary schools, VET providers, and universities in joint pathway planning, ensuring coherent educational progressions and eliminating artificial barriers between educational types. Success indicators include policy adoption establishing qualification equivalence, measurable shifts in public perception through longitudinal surveys, increased applications from academically high-achieving students, and documented student transitions from vocational to university programs.

- Curriculum content development requires institutions to establish systematic review and revision processes. Curriculum review committees should include faculty from technical specializations, gender equality specialists, industry representatives ensuring labor market relevance, and student representatives providing learner perspectives. Review processes should employ standardized protocols examining content for gender bias including predominance of male examples, masculine framing of technical challenges, absence of social context in case studies, and failure to acknowledge women's contributions to knowledge development. Development of revised curricula should follow co-design approaches involving diverse stakeholders, pilot testing in controlled settings before full implementation, iterative refinement based on student and faculty feedback, and documentation enabling replication across programs. Learning materials procurement should include explicit gender equality criteria in specifications, requiring publishers to demonstrate diverse representation, inclusive language, and integration of gender analysis into technical content, with evaluation rubrics assessing materials before adoption. Institutions should allocate dedicated development time within faculty workloads for curriculum revision, provide stipends for development work occurring outside regular responsibilities, and create recognition for exemplary curriculum innovation through teaching awards and promotion criteria. Digital curriculum repositories should enable sharing of revised materials across institutions, reducing duplication of development effort and accelerating implementation. Success metrics include completion of systematic curriculum reviews across all programs, documented revisions addressing identified gaps, measurable increases in female representation within learning materials, and adoption of revised curricula across multiple institutional sites.
- Faculty development programs must provide comprehensive, ongoing professional learning opportunities. Initial training programs of minimum 20 hours duration should combine theoretical foundations on how gender operates in educational contexts, practical skill development in gender-responsive teaching methods, guided curriculum content review exercises, and supervised teaching practice with feedback from experienced gender-responsive educators. Training should employ experiential learning approaches including case analysis of classroom scenarios, role-playing practice in handling bias situations, peer observation of inclusive teaching demonstrations, and reflective exercises examining instructors' own assumptions and practices. Ongoing professional development should include annual refresher workshops updating faculty on evolving practices, specialized clinics addressing specific challenges such as managing group dynamics or creating inclusive assessments, peer learning communities where educators share experiences and problem-solve collectively, and access to consultation with gender and pedagogy experts. Professional development must address



resistance through evidence-based approaches presenting research demonstrating improved outcomes for all students from gender-responsive pedagogy, testimonials from faculty who have successfully implemented reforms, and opportunities to experiment with new approaches in low-stakes contexts. Institutions should mandate minimum professional development participation as employment requirement, allocate paid time for attendance, and integrate gender-responsive competencies into teaching quality evaluation and promotion decisions. Educator recruitment strategies should target increasing women's representation in technical faculty through partnerships with women's professional networks, mentorship programs supporting women's transition into teaching roles, and family-friendly employment policies including flexible scheduling and parental support. Success indicators include faculty participation rates in professional development programs, teaching practice changes documented through observation protocols, student evaluation improvements in feedback on inclusive teaching, and increased diversity in faculty demographics.

- Material and infrastructure improvements require systematic assessment and targeted investment. Institutions should conduct annual accessibility audits involving female students and staff in identifying barriers, assessing equipment fit and usability across diverse body types, evaluating facility adequacy including sanitary provisions and private spaces, and prioritizing improvements based on safety, learning impact, and student feedback. Safety equipment procurement must specify size ranges accommodating diverse body types in tender documents, allocate budgets assuming all students require properly fitted equipment rather than majority plus exceptions, establish partnerships with specialized suppliers offering comprehensive size ranges, and maintain sufficient inventory ensuring availability without delays. Practical training equipment should be reviewed for accessibility and usability, with modifications including adjustable workstation heights, alternative tools offering diverse grip options and force requirements, and assistive technologies where relevant, implemented through phased investment plans with clear timelines. Laboratory and workshop spaces should be renovated to provide adequate sanitary facilities for all genders, private spaces for various needs including religious observation and nursing, secure locker storage, and environmental conditions supporting extended concentration including lighting quality, thermal comfort, and acoustic treatment. Visual environment transformation should include diverse imagery in posters, signage, and display materials showing women across all technical functions, historical timelines acknowledging women's contributions to energy systems development, and student project exhibitions celebrating diverse achievements. Success metrics include completion of accessibility audits with documented action plans, verification of equipment procurement meeting size diversity requirements, facility improvements with before-and-after assessments, and student satisfaction surveys showing improved ratings on physical environment.
- Institutional support structures formalize organizational commitment through designated roles, policies, and resources. Institutions should establish curriculum reform coordinator positions responsible for leading systematic review processes, coordinating faculty development initiatives, monitoring implementation across programs, providing consultation to educators requiring support, and maintaining documentation of reforms for quality assurance and external reporting. Gender equality units or embedded expertise within academic quality offices should provide specialized capacity for analyzing educational practices through gender lens, developing intervention strategies tailored to institutional contexts, conducting research on equity outcomes, and serving as institutional memory ensuring continuity beyond individual champion efforts. Formal policies should mandate regular curriculum review cycles with gender equality integration as explicit criterion, establish teaching quality standards incorporating gender-responsive dimensions with consequences for persistent failure alongside recognition for excellence, require faculty participation in professional development on inclusive pedagogy, and create reporting obligations with public disclosure of equity metrics. Dedicated budget allocations must support curriculum development through faculty time release and development



stipends, professional development program delivery, external expertise consultation, equipment and facility improvements, and innovation funds supporting pilot initiatives. Institutional leadership should champion reforms through regular communications emphasizing commitment, participation in professional development alongside faculty, recognition and celebration of exemplary practice, and accountability measures when standards are not met. Student support services including academic advising, peer mentoring programs, counseling, and student advocacy offices should receive specialized training in supporting women in male-dominated contexts and resources to provide targeted interventions. Success indicators include existence of funded coordinator positions with clear mandates, policy adoption with accountability mechanisms, budget allocations as percentage of instructional expenditure, and institutional culture assessments documenting normalization of gender-responsive approaches.

### Systemic-Level Implementation

- Policy frameworks establishing gender-responsive curriculum as standard practice require government action at national and regional levels. Education ministries should mandate inclusion of gender equality competencies in educator qualification standards, requiring all VET instructors to demonstrate knowledge of gender-responsive pedagogy through professional training and teaching practice evaluation. National curriculum frameworks for vocational qualifications should establish gender integration as accreditation requirement, specifying that programs must demonstrate systematic inclusion of gender analysis in technical content, diverse representation in learning materials, and inclusive pedagogical approaches, with accreditation conditional on meeting standards. Gender-responsive budgeting requirements should mandate visible allocation of resources to curriculum reform, faculty development, and material accessibility improvements in institutional budgets, with annual reporting to education authorities and public disclosure. Quality assurance frameworks should incorporate gender equality indicators in institutional evaluations, examining curriculum content, teaching practices, student outcomes disaggregated by gender, and faculty diversity, with consequences for persistent underperformance including remediation requirements and funding adjustments. National professional development systems should establish centralized training programs for VET educators on gender-responsive pedagogy, providing certified training accessible across regions and reducing dependence on individual institutional capacity. Success indicators include policy adoption rates across jurisdictions, integration of gender equality requirements into accreditation standards, institutional compliance rates documented through quality assurance reviews, and sustained budget allocations to reform initiatives.
- Coordination and resource-sharing mechanisms must connect institutions enabling collective learning and reducing duplication. National or regional curriculum development consortia should convene VET institutions, industry partners, pedagogical specialists, and gender equality experts in collaborative development of model curricula, shared learning resources, and teaching guidance materials available to all institutions. These consortia should establish working groups focused on specific technical specializations (solar, wind, efficiency, storage) developing gender-integrated curriculum units, creating diverse case study libraries, and piloting innovative pedagogical approaches with systematic evaluation. Digital platforms should enable sharing of curriculum materials, teaching resources, professional development content, and implementation experiences across institutions, with quality assurance processes ensuring materials meet standards before inclusion. Regional professional learning networks should facilitate peer exchange through regular convenings, site visits to institutions demonstrating exemplary practice, joint problem-solving sessions addressing implementation challenges, and collaborative inquiry projects investigating effectiveness of specific interventions. National conferences on gender-responsive vocational education should enable broader dissemination of innovations, recognition of leading practice, and policy dialogue between practitioners and government officials. Success metrics include active participation rates in consortia and networks, shared resource utilization documented through

platform analytics, replication of proven interventions across multiple sites, and peer learning exchanges documented through participation records and qualitative feedback on impact.

- Accountability and incentive structures must motivate institutional commitment beyond voluntary goodwill. Government funding formulas should incorporate performance-based components rewarding institutions demonstrating excellence in gender equality outcomes, including female enrollment growth, retention and completion parity, teaching quality improvements on gender-responsive dimensions, and faculty diversity advancement. Public procurement preferences should advantage institutions meeting gender equality standards when competing for training contracts with government agencies and public enterprises, creating market incentives for reform. Quality recognition programs including excellence awards, certification as gender-responsive institutions, and public rankings highlighting equity leaders create reputational benefits motivating improvement. Conversely, persistent underperformance should trigger intervention requirements including mandatory institutional improvement plans, technical assistance from specialized experts, and ultimately funding penalties or program approval withdrawals for continued failure. Industry partnerships should include explicit gender equality commitments, with companies pledging to provide internships to minimum percentages of female students, participate in faculty development through guest teaching and curriculum input, and report on employment outcomes by gender creating transparency on workplace inclusivity. Success indicators include measurable institutional improvement on equity metrics over time, documented examples of institutions adopting reforms in response to incentives, industry partner compliance with equality commitments, and system-wide advancement toward gender parity across all measures.

#### 6.4.4 Success Indicators and Monitoring

Effective monitoring requires clear, measurable indicators aligned with curriculum and pedagogy reform objectives. Indicators should be disaggregated by gender, educational background, program specialization, and intersectional identities where relevant, enabling identification of differential impacts and targeted improvement. Data collection must integrate into existing institutional systems including student information management, learning management platforms, and quality assurance processes, ensuring sustainability and reducing additional burden. Monitoring should occur at three temporal scales: immediate output indicators measured within 6-12 months documenting implementation activities, intermediate outcome indicators measured annually assessing behavioral and attitudinal changes, and long-term impact indicators measured over 3-5 years demonstrating systemic transformation in educational experiences and outcomes.

Intervention Area	Immediate Outputs (0-12 months)	Intermediate Outcomes (1-2 years)	Long-term Impact (3-5 years)
<b>Educational system positioning and status elevation</b>	<ul style="list-style-type: none"> <li>▪ Policy reforms adopted establishing VET equivalence</li> <li>▪ Articulation agreements established with universities</li> <li>▪ National repositioning campaign launched</li> </ul>	<ul style="list-style-type: none"> <li>▪ Measurable shift in public perception of VET (survey data)</li> <li>▪ Application rates from high achievers</li> <li>▪ Student transitions from VET to university programs</li> </ul>	<ul style="list-style-type: none"> <li>▪ Sustained increase in high-achieving student applications</li> <li>▪ Proportional representation of women in VET green energy programs</li> <li>▪ Elimination of VET stigma documented through perception studies</li> </ul>
<b>Early-stage curriculum interventions</b>	<ul style="list-style-type: none"> <li>▪ Curriculum units developed and integrated into primary/secondary schools</li> </ul>	<ul style="list-style-type: none"> <li>▪ Shift in STEM interest among female primary/secondary students</li> </ul>	<ul style="list-style-type: none"> <li>▪ Increased female enrollment in VET green energy programs</li> <li>▪ Diversification of career aspirations among female youth</li> </ul>

	<ul style="list-style-type: none"> <li>Teachers trained on delivery</li> <li>Family engagement events conducted</li> </ul>	<ul style="list-style-type: none"> <li>Technical subject selection at upper secondary level</li> <li>Family attitudes toward daughters in technical careers</li> </ul>	<ul style="list-style-type: none"> <li>Reduced early gender stereotyping in occupational aspirations</li> </ul>
<b>Gender-responsive curriculum content development</b>	<ul style="list-style-type: none"> <li>Curriculum review completed across programs</li> <li>Revised learning materials developed and distributed</li> </ul>	<ul style="list-style-type: none"> <li>Gender balance in examples and imagery (content analysis)</li> <li>Student sense of belonging and representation (qualitative feedback)</li> </ul>	<ul style="list-style-type: none"> <li>Sustained student engagement equality across genders</li> <li>Enhanced learning outcomes for all students</li> <li>Normalized presence of gender analysis in technical curriculum</li> </ul>
<b>Pedagogical transformation and inclusive teaching methods</b>	<ul style="list-style-type: none"> <li>Faculty trained on inclusive teaching</li> <li>Structured collaborative learning activities implemented</li> <li>Digital pedagogies deployed</li> </ul>	<ul style="list-style-type: none"> <li>Balanced participation in classroom activities (observation data)</li> <li>Female student confidence in technical competencies (self-assessment)</li> </ul>	<ul style="list-style-type: none"> <li>Retention parity between male and female students</li> <li>Student satisfaction with learning environment equality across gender</li> <li>Quality of learning improvements for all students</li> </ul>
<b>Instructor and educator development</b>	<ul style="list-style-type: none"> <li>Faculty development programs delivered</li> <li>Participation rates across faculty</li> <li>Women faculty recruited in technical roles</li> </ul>	<ul style="list-style-type: none"> <li>Documented changes in teaching practice (observation protocols)</li> <li>Student evaluation improvements on inclusive teaching</li> </ul>	<ul style="list-style-type: none"> <li>Sustained high-quality gender-responsive teaching across institution</li> <li>Diversity in faculty composition</li> <li>Institutional reputation for educational excellence</li> </ul>

Table 9. Core indicators for Axis B

VET institutions should establish baseline measurements before intervention implementation, enabling measurement of change over time. Monitoring systems should integrate gender and intersectional data fields into standard institutional databases including student information systems, learning management platforms, and human resources systems, with automated dashboards enabling real-time tracking. Annual reporting to stakeholders including funders, education authorities, accrediting bodies, and community partners creates accountability and enables course correction when interventions fail to produce intended outcomes.

Institutions should designate monitoring focal points responsible for coordinating data collection across departments, conducting analysis examining differential outcomes and identifying disparities, preparing reports for internal and external stakeholders, and facilitating data-informed improvement planning. Time and resources must be allocated within existing staff roles rather than relying on volunteer effort, with expertise development through training in gender analysis and equity metrics. The Observatory for Gender Equality in Green Energy established through the GaTE project provides a model for systematic monitoring across multiple institutions and countries, enabling benchmarking, identification of effective practices, and aggregation demonstrating sector-wide trends.

Qualitative monitoring through annual focus groups with female students examining their experiences of curriculum content and pedagogical practices, exit interviews with program completers and non-completers understanding reasons for satisfaction or attrition, periodic surveys of faculty assessing implementation challenges and support needs, and consultation with industry partners examining graduate preparedness provides contextual understanding of quantitative trends. Monitoring data should be disaggregated and analyzed for differential outcomes by gender, educational background, program

specialization, and intersectional identities, with specific attention to whether interventions are reaching and benefiting marginalized groups proportionally. Where disparities persist, widen, or emerge in new forms, immediate investigation and intervention adjustment is required rather than waiting for long-term impact data.

Participatory monitoring approaches should engage students and faculty in defining success beyond institutional metrics, identifying unintended consequences or implementation challenges not captured in formal indicators, and co-designing improvement strategies based on lived experience. Annual reflection sessions bringing together curriculum developers, faculty, students, and support staff to review monitoring data and plan adjustments create cycles of continuous improvement rather than one-time reform events. Documentation of monitoring processes, findings, and improvement actions should be maintained systematically, enabling institutional learning over time and providing evidence for accreditation reviews and external reporting requirements.

### 6.4.5 Implementation Guidelines

Successful implementation of Axis B interventions requires strategic sequencing, clear role allocation, adequate resource commitment, and attention to contextual factors influencing feasibility and effectiveness. The following guidelines support actors at all levels in translating curriculum and pedagogy reform principles into practice.

Actor	Primary Responsibilities	Required Capacities
<b>VET Institutions</b>	Lead curriculum review and revision processes; deliver faculty development programs; procure accessible materials and equipment; collect monitoring data; establish support structures	Curriculum development expertise, pedagogical innovation capacity, gender equality knowledge, quality assurance systems
<b>VET Faculty and Instructors</b>	Implement gender-responsive teaching methods; revise course content and materials; create inclusive classroom dynamics; participate in professional development; provide student feedback	Gender-responsive pedagogy competencies, curriculum content knowledge, reflective practice capabilities, openness to innovation
<b>Education Ministries and Authorities</b>	Establish policy frameworks mandating gender-responsive curriculum; allocate resources for reform implementation; integrate requirements into accreditation standards; convene systemic coordination	Policy development expertise, regulatory authority, monitoring and enforcement capacity, budget allocation power
<b>Primary and Secondary Schools</b>	Integrate early-stage interventions in science curricula; deliver gender-responsive career guidance; engage families; facilitate partnerships with VET providers	Age-appropriate curriculum materials, teacher training capacity, partnership coordination with VET institutions, career guidance resources
<b>Industry Partners</b>	Provide curriculum input ensuring labor market relevance; participate in faculty development as guest instructors and mentors; offer workplace learning opportunities; communicate evolving technical requirements	Technical expertise, commitment to diversity, capacity to articulate workplace competency needs, willingness to share knowledge
<b>Gender Equality Specialists and Consultants</b>	Provide specialized expertise in analyzing curriculum and pedagogy through gender lens; design interventions; facilitate faculty development; support monitoring and evaluation	Gender analysis expertise, educational context understanding, facilitation skills, monitoring and evaluation expertise

<b>Students (Female and Diverse Learners)</b>	Provide feedback on curriculum content and teaching methods; participate in monitoring through focus groups and surveys; co-design improvements; serve on student advisory committees	Critical analysis capacity, willingness to provide constructive feedback, representation in advisory structures
<b>Curriculum Materials Developers and Publishers</b>	Develop gender-responsive learning materials featuring diverse representation; integrate gender analysis into technical content; use inclusive language and imagery; provide implementation guidance for educators	Gender equality knowledge, technical content expertise, instructional design capabilities, commitment to inclusive publishing standards

Table 10. Implementation guidelines for Axis B

Implementation requires sustained commitment from institutional leadership, active engagement by faculty and staff, adequate resources commensurate with reform scope, and patience recognizing that fundamental educational transformation occurs gradually through cumulative improvements rather than sudden shifts. Axis B interventions address deeply embedded practices and assumptions, requiring not only technical changes in curriculum content and teaching methods but cultural transformation in how technical knowledge is defined, valued, and transmitted. Success depends on creating conditions where gender-responsive curriculum and pedagogy become the expected standard rather than exceptional practice, embedded in institutional systems and educator competencies rather than dependent on individual champions.

## 6.5 Axis C: Mentoring & Career Support

### 6.5.1 Strategic Focus and Objectives

Axis C addresses the critical gap in structured support systems that enable women to navigate male-dominated educational and professional environments successfully throughout their career trajectories. This axis recognizes that women's underrepresentation and accelerated attrition in green energy careers stem not from lack of technical capability but from absence of guidance, sponsorship, professional networks, and career development support that majority populations access informally through homogeneous networks. Women face distinct challenges at each career stage—building confidence to pursue non-traditional careers despite societal skepticism, navigating educational environments as visible minorities subject to heightened scrutiny, establishing credibility in workplaces where technical competence is questioned, accessing advancement opportunities controlled through informal networks from which they are excluded, and sustaining careers over decades amid work-life integration challenges and cumulative microaggressions. The **strategic objective** is to construct comprehensive, formalized support infrastructure spanning the entire career continuum from educational exploration through leadership advancement, compensating for absent informal support and addressing gender-specific barriers systematically rather than expecting individual resilience to overcome structural disadvantages.

The **scope** encompasses multiple career stages and support modalities. Pre-enrollment support must connect prospective students with current students and recent graduates who provide authentic information about educational experiences, career realities, and navigation strategies, reducing uncertainty and countering discouraging stereotypes. Student-phase support requires structured mentorship pairing learners with established professionals who guide educational decision-making, workplace preparation, and transition planning while providing emotional support amid isolation as minorities. Education-to-employment transition support demands deliberate bridge-building through industry partnerships, work-integrated learning with designated mentors, and employer preparation for receiving and supporting female entrants into male-dominated workplaces. Workplace-phase support necessitates both mentorship providing guidance and sponsorship actively advocating for advancement opportunities, recognizing that visibility and career progression require champions willing to leverage influence on women's behalf. Leadership development support must prepare women for management

and executive roles through targeted skill-building, strategic network cultivation, and navigation of organizational politics. Long-term career support addresses retention through professional networks providing belonging and peer support, re-entry pathways for those who exit due to caregiving or other life circumstances, and ongoing development preventing skill obsolescence and career stagnation.

**Success** in this axis manifests across individual career outcomes, institutional support capacity, and systemic normalization of comprehensive career support. Individual-level success includes women's increased confidence pursuing technical careers, successful navigation of educational programs with completion rates equivalent to male peers, smooth transitions from education to employment with job placement rates reflecting qualification levels, career advancement at rates comparable to male colleagues, leadership role attainment proportional to workforce representation, and career longevity with retention rates eliminating current gender disparities. Institutional-level success requires VET providers and employers establishing formalized mentorship programs with clear structures and accountability, designated personnel coordinating support systems, integration of career support into standard institutional operations rather than special initiatives, and demonstrable commitment evidenced through resource allocation and senior leadership engagement. Systemic-level success demands normalization of structured mentorship and career support as expected standard practice across educational and employment sectors, policy frameworks mandating support provision, cross-sector coordination ensuring continuity as women transition between education and employment contexts, and elimination of the exceptional effort currently required for women to access support readily available to male counterparts through informal networks.

### 6.5.2 Key Intervention Areas

Mentoring and career support interventions are organized into **three strategic tiers** reflecting the career continuum from exploration through leadership. Tier 1 interventions establish foundational support enabling women to enter and persist in technical education, addressing the critical juncture where career decisions are made and initial educational experiences determine whether women continue or exit technical pathways. Without support at this foundational stage, subsequent career interventions reach only the small proportion who overcome initial barriers independently. Tier 2 interventions create bridges between education and employment and establish workplace support systems, addressing the vulnerable transition period and early career phase where women experience highest attrition rates. Tier 3 interventions support advancement and long-term retention, ensuring women who successfully enter careers access opportunities to progress into leadership and sustain engagement over decades. This tiered approach recognizes that career support must be continuous rather than episodic, with interventions appropriate to each stage while maintaining coherence across the full trajectory.

Tier	Strategic Focus	Intervention Areas	Primary Target	Implementation Timeline
<b>Tier 1: Educational Entry and Persistence</b>	Enabling informed career decisions and successful educational experiences	<ul style="list-style-type: none"> <li>Pre-enrollment mentorship and information provision</li> <li>Structured student mentorship programs</li> <li>Peer support networks and communities</li> </ul>	<ul style="list-style-type: none"> <li>Prospective students facing uncertainty</li> <li>Current students navigating educational environments as minorities</li> </ul>	Short to medium-term; requires coordination between educators and professionals
<b>Tier 2: Transition and Workplace Integration</b>	Facilitating successful employment entry and	<ul style="list-style-type: none"> <li>Education-to-employment transition support</li> </ul>	<ul style="list-style-type: none"> <li>Graduating students transitioning to employment</li> </ul>	Medium-term; requires employer engagement and

	early career establishment	<ul style="list-style-type: none"> <li>Industry-education partnership mechanisms</li> <li>Workplace mentorship and initial career guidance</li> </ul>	<ul style="list-style-type: none"> <li>Early-career professionals establishing workplace credibility</li> </ul>	partnership infrastructure
<b>Tier 3: Advancement and Long-term Retention</b>	Supporting career progression and sustained engagement	<ul style="list-style-type: none"> <li>Sponsorship and advocacy for advancement</li> <li>Leadership development pathways</li> <li>Long-term career support and re-entry mechanisms</li> <li>Professional networks and communities of practice</li> </ul>	<ul style="list-style-type: none"> <li>Mid-career professionals seeking advancement</li> <li>Potential and current leaders</li> <li>Women considering exit or re-entry</li> </ul>	Long-term sustained effort; requires organizational culture transformation

Table 11. Foundation tiers of Axis C

### Tier 1: Educational Entry and Persistence Support

- Pre-enrollment mentorship and information provision** addresses the uncertainty and information deficit prospective students face when considering non-traditional technical careers. Women contemplating green energy education require access to authentic information about educational experiences, career realities, workplace cultures, economic prospects, and work-life integration possibilities from individuals who have navigated similar paths successfully. VET institutions should establish structured ambassador programs where recent graduates and current students conduct outreach to secondary schools, employment services, and community organizations serving prospective female students. Ambassadors should receive training on effective communication, materials presenting diverse career trajectories, and compensation or academic credit recognizing their service. Digital platforms including video testimonials, online discussion forums, and social media communities enable prospective students to connect with current students and graduates, ask questions anonymously, and access information at convenient times. Information sessions specifically for women considering technical education should address common concerns including gender dynamics in classrooms and workplaces, safety and respect issues, family compatibility, and advancement opportunities, with honest discussion rather than minimizing challenges. One-to-one pre-enrollment mentoring matches prospective students with graduates in similar circumstances (geographic location, educational background, family situation) who provide personalized guidance through decision-making and application processes. Success indicators include number of prospective students reached, quality of information exchanges, and conversion rates from inquiry to application among women accessing pre-enrollment support.
- Structured student mentorship programs** provide ongoing guidance and support throughout educational programs. Every female student in green energy technical programs should be paired with an experienced professional mentor within first weeks of program commencement, with matching based on technical specialization, career interests, and personal circumstances where relevant. Mentorship relationships should be structured through clear expectations established via written agreements, minimum meeting frequency (monthly recommended), documented discussion topics ensuring coverage of educational navigation and career preparation, and evaluation processes assessing relationship quality and outcomes. Mentors



require preparation through training on effective mentoring practices, awareness of challenges women face in male-dominated educational contexts, boundary-setting and professional relationship management, and institutional resources available for student support. VET institutions should employ mentorship coordinators responsible for mentor recruitment, matching processes, ongoing support for mentor-mentee pairs, monitoring relationship quality, and intervention when matches prove unsuccessful. Group mentoring supplements one-to-one relationships, with cohorts of female students meeting regularly with multiple professionals for discussions on specific topics including workplace culture navigation, technical skill development, career planning, and work-life integration. Mentorship should extend throughout educational programs rather than ending after initial semesters, with intensification during critical periods including work placements, final projects, and job searching. Success indicators include student participation rates, relationship duration and meeting frequency, student-reported satisfaction and perceived benefit, and retention rate improvements among mentored compared to non-mentored students.

- **Peer support networks and communities** create belonging and mutual support among female students experiencing minority status in male-dominated programs. VET institutions should facilitate formation of women's affinity groups or student chapters of professional women's organizations, providing meeting space, modest operating budgets, and staff liaison support. Peer networks enable students to share experiences, problem-solve collectively around challenges unique to their circumstances, celebrate achievements, and build friendships reducing isolation. Senior students should be intentionally connected with junior students through peer mentoring arrangements, orientation programs, and collaborative projects, creating continuity and enabling knowledge transfer about navigating institutional cultures. Cross-institutional networks connecting female students across multiple VET providers through regional gatherings, online platforms, and collaborative activities expand support beyond single institutions and create broader professional networks. Peer networks should extend to digital spaces through social media groups, messaging platforms, and online forums enabling flexible communication fitting students' schedules and preferences. Institutions should recognize peer support as valuable co-curricular activity through leadership development frameworks, certificates, or portfolio documentation students can present to employers. Success indicators include network participation rates, longevity of groups, peer mentoring matches established, and qualitative reports of reduced isolation and enhanced sense of belonging.

## Tier 2: Transition and Workplace Integration Support

- **Education-to-employment transition support** addresses the critical juncture where women must translate educational qualifications into employment while navigating labor markets where gender bias in recruitment remains pervasive. VET institutions should provide career counseling specifically addressing women's transition challenges including résumé and interview preparation emphasizing technical accomplishments, strategies for handling gender bias in recruitment processes, negotiation skills for salary and conditions discussions, and workplace culture assessment to identify supportive employers. Career workshops should include mock interviews with feedback, panels of employers discussing what they seek in candidates, and recent graduates sharing job search experiences and lessons learned. Job placement services should develop relationships with employers demonstrating commitment to gender diversity, actively market female graduates' qualifications, and provide employer education on benefits of diverse technical teams. VET institutions should establish transition mentorship where graduates in their first employment year maintain connection with institutional mentors for guidance navigating workplace challenges, complementing but not replacing workplace mentorship. Alumni networks should formalize connections between recent graduates and established professionals, facilitating job search support, workplace navigation advice, and



longer-term career guidance. Digital career resources including job boards curating opportunities with diversity-committed employers, online modules on career skills, and virtual networking events expand reach beyond graduates able to attend in-person sessions. Success indicators include job placement rates disaggregated by gender, time-to-employment metrics, quality of placements assessed through salary levels and contract security, and graduate satisfaction with transition support received.

- **Industry-education partnership mechanisms** create structured pathways from education to employment with deliberate support for female students. Employers should commit to providing work-integrated learning placements specifically for female students, with designated workplace mentors assigned before placements commence, structured learning plans ensuring substantive skill development, and evaluation processes assessing both technical learning and workplace culture experiences. Partnership agreements should specify employer responsibilities including mentor training, safe and respectful workplace conditions, exposure to diverse technical functions, and pathways to permanent employment for successful placement students. VET institutions should monitor placement quality through student feedback, site visits, and employer accountability for providing promised experiences, with consequences including withdrawal of partnership for employers failing to meet standards. Employers should participate in curriculum advisory committees providing input on technical competency requirements while also advising on workplace readiness skills, with explicit discussion of how technical training can better prepare women for male-dominated workplace realities. Joint initiatives including employer-sponsored scholarships specifically for female students, equipment donations supporting practical training, and employee volunteering as guest lecturers or workshop facilitators deepen partnerships beyond transactional placement provision. Industry partners should publicize their commitment to supporting women's entry into green energy careers through public statements, participation in recruitment events, and showcasing of female employees, creating positive reputational associations incentivizing continued engagement. Success indicators include number and quality of partnership agreements, work placement provision specifically for female students, conversion rates from placements to employment, and sustained employer engagement over multiple years.
- **Workplace mentorship and initial career guidance** ensures women receive support navigating early career experiences where they establish credibility, build professional networks, and develop technical expertise. Employers should implement mandatory mentorship programs for all female hires in technical roles, with mentors assigned within first week of employment, formal mentorship agreements establishing expectations and commitments, and organizational accountability through monitoring and evaluation. Mentors should be selected based on demonstrated commitment to diversity rather than assuming any senior employee will be effective, with preparation through training on gender dynamics in technical workplaces, effective mentoring practices, and organizational resources supporting women's career development. Mentorship should address both technical skill development and workplace navigation including building credibility when competence is questioned, handling microaggressions and bias, accessing informal knowledge about organizational culture and decision-making, and strategic career planning. Women should have access to both male and female mentors, recognizing that male mentors may provide access to power networks while female mentors may offer gender-specific guidance, with some organizations providing multiple mentors serving different functions. Mentorship programs should include structured check-ins between mentorship coordinators and both mentors and mentees, ensuring relationships function effectively and providing intervention when challenges arise. Organizations should recognize and reward effective mentoring through performance evaluation, promotion consideration, and public acknowledgment, creating incentives for quality engagement. Success indicators include program participation rates, mentorship



relationship duration and meeting frequency, employee-reported satisfaction with mentoring, and retention rates comparing mentored to non-mentored female employees.

### Tier 3: Advancement and Long-term Retention Support

- **Sponsorship and advocacy for advancement** recognizes that career progression requires not only competence but champions willing to advocate for opportunities and leverage influence on behalf of emerging talent. Sponsorship differs from mentorship in that sponsors actively promote protégés for advancement opportunities, vouch for their capabilities to decision-makers, provide visibility by including them in high-profile projects and meetings, and offer strategic guidance on navigating organizational politics. Organizations should establish formal sponsorship programs targeting high-potential women for leadership development, with senior leaders assigned as sponsors with explicit expectations to advocate for protégés' advancement, accountability for protégés' career progression, and recognition when protégés achieve promotions or leadership roles. Sponsors require preparation on distinguishing sponsorship from mentorship, understanding systemic barriers women face in advancement, strategies for effective advocacy within organizational contexts, and navigation of potential perception issues when senior men sponsor junior women. Organizations should create transparency in advancement processes through clear promotion criteria, documented decision-making about opportunities, and regular communication about upcoming positions and projects, reducing reliance on informal networks from which women are often excluded. Leadership should actively monitor advancement patterns disaggregated by gender, investigating explanations when disparities exist, and holding management accountable for developing and advancing diverse talent. Succession planning processes should explicitly identify high-potential women for leadership pathways, with intentional development including stretch assignments, executive education opportunities, and visibility in organizational leadership. Success indicators include representation of women in advancement opportunities, promotion rates disaggregated by gender, time-to-advancement metrics, and progression of sponsored women into leadership positions.
- **Leadership development pathways** provide targeted preparation for management and executive roles. Organizations should establish women's leadership development programs offering competency building in strategic thinking, financial management, organizational change leadership, and executive communication alongside critical examination of gendered leadership dynamics and strategies for exercising authority in contexts where women leaders face resistance. Leadership programs should combine formal learning through workshops and coursework, experiential learning through participation in strategic initiatives and task forces, and relational learning through executive coaching and senior leader shadowing. Participation should be framed as recognition of high potential rather than remedial support, with nomination processes emphasizing women's demonstrated capabilities and leadership promise. Programs should create cohort-based learning enabling peer support and network building among women pursuing leadership, particularly valuable in organizations where women leaders remain isolated. External leadership development opportunities including executive education programs, professional association leadership roles, and industry-wide initiatives should be actively supported through organizational sponsorship, time allocation, and financial support. Organizations should establish clear pathways from technical roles into management through transparent criteria, encouragement of women's applications for leadership positions, and active recruitment when women do not self-nominate despite qualifications. Success indicators include participation rates in leadership development programs, subsequent advancement into management roles, representation of women in senior leadership over time, and retention of women in leadership positions.



- **Long-term career support and re-entry mechanisms** address retention and continuous engagement over career spans of decades. Professional development opportunities including continuing education, conference attendance, technical training on emerging technologies, and cross-functional project assignments should be equitably accessible to women, with monitoring of participation rates and active recruitment when gender disparities appear. Organizations should implement flexibility policies enabling work-life integration including remote work options, flexible scheduling, compressed work weeks, and job-sharing arrangements, recognizing these support retention particularly for women bearing disproportionate caregiving responsibilities. Career re-entry programs should enable women who exit for caregiving or other reasons to return through technical skills refresher training, gradual re-integration pathways, and mentorship supporting workplace re-adjustment. Organizations should maintain connections with departed employees through alumni networks, enabling continued professional relationships and facilitating re-entry when circumstances permit return. Career counseling throughout employment tenure should help women navigate career decisions including specialization choices, advancement opportunities, lateral moves building diverse experience, and work-life integration challenges, normalizing seeking support rather than expecting independent navigation of complex decisions. Organizations should conduct stay interviews with women in technical roles exploring satisfaction, challenges, career aspirations, and factors influencing retention decisions, using insights to improve conditions and address systemic barriers before women exit. Success indicators include retention rates over 5, 10, and 15-year periods, participation in professional development opportunities, utilization of flexibility policies, re-entry rates among women who previously departed, and career satisfaction measures.
- **Professional networks and communities of practice** create belonging, peer support, and collective advocacy. Professional associations in green energy sectors should establish women's divisions or affinity groups providing networking opportunities, professional development programming, mentorship connections, and collective advocacy for gender equality in the sector. Organizations should support employees' participation in professional networks through membership fees, time allocation for attendance at events, and recognition of leadership roles in professional associations. Online communities including discussion forums, social media groups, and virtual networking platforms enable flexible participation and connect women across geographic distances, organizational boundaries, and career stages. Cross-organizational women's networks in specific technical specializations (solar installation professionals, wind energy engineers, energy efficiency auditors) create peer support among women in similar roles while enabling knowledge sharing about technical developments and career opportunities. Regional or national convenings including conferences, symposia, and networking events bring together diverse women in green energy for relationship building, skill development, and collective reflection on sector challenges and opportunities. Networks should engage in collective advocacy including policy recommendations, industry standards development, and public awareness campaigns addressing gender equality in green energy, amplifying individual voices through collective action. Success indicators include professional network membership and participation rates, establishment and sustainability of women's affinity groups, cross-organizational connection formation, and collective advocacy initiatives undertaken.

### 6.5.3 Implementation Pathways

Mentoring and career support interventions require coordinated action across prospective students, current learners, early-career professionals, and established practitioners, with implementation spanning educational institutions, employers, professional associations, and government bodies. Individual-level pathways focus on connecting women with support through accessible mentorship, sponsorship, networks, and career guidance at each career stage. Institutional-level pathways establish organizational



structures, policies, and dedicated personnel within VET providers and employers enabling systematic support delivery. Systemic-level pathways create cross-sector coordination, policy frameworks, and accountability mechanisms embedding comprehensive career support as standard practice rather than exceptional initiative.

## Individual-Level Implementation

- **Pre-enrollment and student-phase mentorship** requires VET institutions to recruit and prepare mentors, match them thoughtfully with students, and support relationship quality. Mentor recruitment should target diverse professionals including recent graduates who relatably share experiences and established practitioners offering broader career perspective, with outreach through employer partnerships, alumni networks, and professional associations. Recruitment messaging should emphasize impact on women's career trajectories, modest time commitment required (2-4 hours monthly recommended), and personal development benefits mentors gain through relationship. Mentor preparation should include 4-6 hours of training covering mentorship principles and practices, challenges women face in male-dominated technical education and careers, effective communication and relationship-building, boundary-setting and professionalism, and institutional resources for student support. Matching should employ structured processes considering technical specialization alignment, career interests correspondence, and where relevant personal circumstance similarities including parenting status, geographic location, or migration background, using questionnaires completed by mentors and students to inform pairings. Mentorship coordinators should facilitate initial meetings, provide conversation guides suggesting discussion topics and developmental activities, conduct periodic check-ins assessing relationship quality and addressing concerns, and organize group activities bringing together multiple mentor-mentee pairs for networking and shared learning. Recognition for mentors should include certificates documenting service, public acknowledgment at institutional events, and where applicable continuing professional development credits. VET institutions should maintain contact with mentors and students throughout academic terms, providing support resources, facilitating problem-solving when challenges arise, and evaluating program effectiveness through satisfaction surveys and outcome monitoring. Success metrics include mentor recruitment and retention rates, quality of matching assessed through participant satisfaction, relationship duration and engagement frequency, and student outcomes comparing mentored to non-mentored cohorts.
- **Transition and workplace support** requires coordination between educational institutions, employers, and professional support services. VET career services should provide graduating students with comprehensive transition support including career counseling emphasizing women's specific challenges, job search resources and strategies, employer information identifying organizations with inclusive workplace cultures, and alumni networks facilitating connections with employed graduates. Transition mentorship should maintain relationships between students and institutional or external mentors through critical first year of employment, with monthly contact supporting workplace navigation and addressing challenges as they emerge. Employers should implement new hire mentorship programs assigning mentors within first week, conducting structured orientation introducing women to organizational culture and resources, providing clear expectations and support mechanisms, and monitoring early integration experiences through regular check-ins. Industry-education partnerships should include transition support as explicit component, with graduating students from work placements receiving continued mentorship through employment transition, employers providing transition assistance even when hiring decisions extend beyond placement completion timeframes, and institutional monitoring of graduate experiences in early employment providing feedback for partnership improvement. Professional associations should offer early-career programs including reduced membership rates, mentorship matching services, networking



events specifically for those in first five years of careers, and skills development workshops addressing transition and early career challenges. Success metrics include graduate employment rates and quality, transition support utilization rates, new hire retention rates in first 12-24 months, and early-career professional satisfaction with support received.

### Institutional-Level Implementation

- **VET institutions** must establish comprehensive career support infrastructure integrated into institutional operations. Institutions should designate career services coordinators specifically focused on women's career development in technical fields, with responsibilities including mentorship program coordination, employer relationship management, student counseling, alumni network facilitation, and data monitoring on gender equity in career outcomes. Formal policies should mandate career support provision specifying minimum services all students receive, particular attention to supporting women in non-traditional fields, and accountability through annual reporting. Budget allocations must support coordinator positions, mentor recognition and support, career events and programming, digital platform development and maintenance, and partnership development activities. Institutional leadership should champion career support through public commitment statements, participation in mentorship and career events, and accountability for gender equity in graduate outcomes. Student services integration should embed career support throughout educational experience rather than concentrating exclusively in final semesters, with career development integrated into curriculum through career exploration assignments, workplace preparation modules, and alumni guest presentations. Alumni engagement strategies should cultivate long-term relationships with graduates through regular communications, networking events, professional development opportunities, and involvement in current student support as mentors, advisors, and employers. Quality assurance should monitor career support effectiveness through tracking employment outcomes disaggregated by gender, surveying student and graduate satisfaction with services, analyzing mentorship program participation and outcomes, and benchmarking against peer institutions. Success indicators include existence of dedicated personnel with adequate resources, policy formalization with implementation accountability, student participation rates in career support programs, and demonstrable improvements in women's employment outcomes.
- **Employers** must formalize mentorship and career support as organizational commitments rather than dependent on individual manager discretion. Organizations should establish written mentorship and sponsorship policies specifying eligibility, processes, expectations, and accountability mechanisms, communicated clearly to all employees and implemented consistently. Human resource systems should track mentorship participation, relationship quality, and career progression of mentored employees, with data used to evaluate program effectiveness and identify improvement needs. Mentorship and sponsorship should be recognized organizational contributions valued in performance evaluation, promotion decisions, and leadership development, creating incentives for quality engagement rather than perfunctory participation. Dedicated personnel including diversity and inclusion coordinators, human resource specialists, or designated senior leaders should coordinate mentorship programs, provide mentor and sponsor training, support relationship quality, and conduct program evaluation. Organizations should allocate budgets supporting mentorship activities including training costs, program coordination time, recognition events, and technology platforms facilitating matching and communication. Leadership accountability should include diversity and inclusion goals in executive performance targets, board oversight of workforce diversity metrics including retention and advancement patterns, and consequences when persistent gender disparities indicate systemic barriers remain unaddressed. Organizations should engage in external partnerships with VET institutions providing work-integrated learning placements with



structured mentorship, professional associations offering mentorship matching beyond organizational boundaries, and other employers through industry consortia sharing effective practices and potentially creating shared mentorship pools. Success indicators include policy adoption and implementation, mentorship program participation rates, female employee retention rates over time, advancement rates disaggregated by gender, and representation in leadership positions.

- **Professional associations** should provide career support infrastructure serving members across organizations and career stages. Associations should establish formal mentorship programs matching members seeking guidance with experienced professionals willing to mentor, using digital platforms facilitating connections and providing resources supporting effective mentoring relationships. Career development programming should include workshops, webinars, and conferences addressing career navigation, leadership development, technical skills advancement, and work-life integration, with content specifically addressing women's experiences in male-dominated fields. Women's affinity groups within associations should provide dedicated space for networking, peer support, collective problem-solving, and advocacy, with organizational support through staff liaison, communications channels, and budget allocations. Recognition programs should celebrate women's achievements through awards, public acknowledgment, and leadership opportunities within association governance, creating visibility and role models. Associations should engage in sector-wide advocacy including policy recommendations to government, industry standards development promoting workplace equity, and public awareness campaigns positioning green energy as welcoming to women. Research and knowledge production should document women's experiences, effective support practices, persistent barriers, and sector progress, providing evidence base for continued advocacy and improvement efforts. Success indicators include mentorship program scale and satisfaction ratings, women's participation in association programs and leadership, advocacy initiative implementation, and demonstrated sector improvements in women's representation and advancement.

### Systemic-Level Implementation

- **Policy frameworks mandating career support** require government action establishing expectations and accountability. Education authorities should integrate career support requirements into VET accreditation standards, specifying institutions must provide documented career services, mentorship programs, employer partnerships, and monitoring of employment outcomes disaggregated by gender, with compliance verified through quality assurance reviews. Labor market policies should include gender equity requirements in workforce development initiatives, mandating programs serving women entering non-traditional fields include career support components, allocating dedicated funding for mentorship and support services, and evaluating programs based on gender equity in outcomes. Employment equity legislation or policy should require or strongly incentivize employers to implement mentorship and career development programs supporting women in male-dominated technical roles, with compliance monitoring and public reporting creating transparency and accountability. Government procurement policies should incorporate diversity criteria favoring organizations demonstrating commitment to women's career support in technical fields, creating market advantages for employers implementing comprehensive programs. Funding programs supporting green energy sector development should require gender equality components including mentorship and career support, with resource allocation contingent on demonstrating implementation plans and outcomes. Success indicators include policy adoption across jurisdictions, compliance rates among regulated entities, dedicated funding allocations, and demonstrable improvements in sector-wide women's employment and advancement outcomes.



- **Cross-sector coordination mechanisms** must connect educational institutions, employers, professional associations, and support organizations in collaborative support ecosystems. Regional or national coordination bodies should convene stakeholders in regular forums sharing effective practices, identifying systemic gaps, coordinating resources, and advocating for policy improvements. Formal partnership frameworks should specify mutual commitments among education providers, employers, and professional associations, including employer provision of mentorship and work placements, institutional integration of career support into programs, and association provision of networking and professional development opportunities extending beyond individual organizations. Technology platforms should enable cross-sector mentorship matching, creating larger mentor pools than single institutions or organizations can provide, facilitating connections based on technical specialization and career interests, and providing resources supporting relationship quality. Joint initiatives including sector-wide mentorship programs, regional networking events, collaborative research on workforce development, and collective advocacy campaigns leverage multiple stakeholders' resources and create coherent support extending across educational and employment contexts. National programs or initiatives focused on women in green energy careers should coordinate activities across regions and organizations, establish quality standards for support programs, provide technical assistance to organizations developing programs, and conduct evaluation documenting effectiveness and areas requiring improvement. Success indicators include active cross-sector partnership agreements, joint program implementation, coordinated advocacy achievements, and participant reports of seamless support across education and employment transitions.
- **Accountability and incentive structures** must motivate organizational commitment beyond voluntary goodwill. Public reporting requirements should mandate VET institutions and employers disclose workforce and student body demographics, retention and attrition rates disaggregated by gender, mentorship program participation, and career advancement patterns, creating transparency enabling external accountability. Certification or recognition programs should distinguish organizations demonstrating excellence in career support, with third-party assessment of program quality, public recognition creating reputational benefits, and potential access to additional resources or contracting advantages. Industry awards and rankings should incorporate gender equity dimensions including mentorship provision, career support quality, and women's advancement rates, influencing organizational reputations and creating competitive incentives for improvement.

#### 6.5.4 Success Indicators and Monitoring

Effective monitoring requires clear, measurable indicators aligned with mentoring and career support objectives across the full career continuum. Indicators should be disaggregated by gender, career stage, technical specialization, and intersectional identities where relevant, enabling identification of where support succeeds or fails for different populations (table 12). Data collection must integrate into existing institutional systems including student tracking, human resource information systems, and professional association membership databases, ensuring sustainability and reducing burden. Monitoring should occur at three temporal scales: immediate output indicators measured within 6-12 months documenting program implementation, intermediate outcome indicators measured annually assessing participation and satisfaction, and long-term impact indicators measured over 3-5 years demonstrating career trajectory improvements.



Intervention Area	Immediate Outputs (0-12 months)	Intermediate Outcomes (1-2 years)	Long-term Impact (3-5 years)
<b>Pre-enrollment mentorship and information provision</b>	<ul style="list-style-type: none"> <li>Ambassador programs established</li> <li>Prospective students reached through outreach</li> <li>Digital platforms launched with content</li> <li>Information events conducted</li> </ul>	<ul style="list-style-type: none"> <li>Conversion rates from inquiry to application among women</li> <li>Quality of information exchanges (feedback surveys)</li> <li>Prospective student confidence in career decisions</li> </ul>	<ul style="list-style-type: none"> <li>Female application rates to VET programs</li> <li>Diversity of applicant pool</li> <li>Informed career decision-making quality</li> <li>Reduced uncertainty-related attrition</li> </ul>
<b>Structured student mentorship programs</b>	<ul style="list-style-type: none"> <li>Mentors recruited and trained</li> <li>Students matched with mentors</li> <li>Mentorship agreements established</li> <li>Coordinator positions created</li> </ul>	<ul style="list-style-type: none"> <li>Mentorship relationship quality (satisfaction surveys)</li> <li>Meeting frequency and engagement</li> <li>Student confidence in career preparation</li> <li>Reduced isolation and enhanced belonging</li> </ul>	<ul style="list-style-type: none"> <li>Retention rate parity between male and female students</li> <li>Completion rates for mentored vs. non-mentored students</li> <li>Employment placement quality</li> <li>Career trajectory initiation success</li> </ul>
<b>Peer support networks and communities</b>	<ul style="list-style-type: none"> <li>Affinity groups established</li> <li>Peer mentoring connections facilitated</li> <li>Network events conducted</li> <li>Digital platforms operational</li> </ul>	<ul style="list-style-type: none"> <li>Network participation rates</li> <li>Peer relationship formation</li> <li>Reduced sense of isolation (qualitative data)</li> <li>Cross-cohort knowledge sharing</li> </ul>	<ul style="list-style-type: none"> <li>Sustained network longevity</li> <li>Enhanced sense of belonging in technical fields</li> <li>Retention improvements</li> <li>Alumni engagement in supporting current students</li> </ul>
<b>Education-to-employment transition support</b>	<ul style="list-style-type: none"> <li>Career counseling services provided</li> <li>Job placement support activities</li> <li>Employer relationships developed</li> <li>Transition mentorship established</li> </ul>	<ul style="list-style-type: none"> <li>Job placement rates by gender</li> <li>Time-to-employment metrics</li> <li>Quality of first positions (salary, security)</li> <li>Graduate satisfaction with support</li> </ul>	<ul style="list-style-type: none"> <li>Career establishment success</li> <li>Early-career retention in technical roles</li> <li>Career trajectory quality over first 3-5 years</li> <li>Employer feedback on graduate preparedness</li> </ul>
<b>Industry-education partnership mechanisms</b>	<ul style="list-style-type: none"> <li>Partnership agreements signed</li> <li>Work placements provided</li> <li>Workplace mentors assigned</li> <li>Joint curriculum input established</li> </ul>	<ul style="list-style-type: none"> <li>Placement quality ratings by students</li> <li>Conversion rates from placements to employment</li> <li>Employer sustained engagement</li> <li>Mentor effectiveness assessments</li> </ul>	<ul style="list-style-type: none"> <li>Sustained employment relationships</li> <li>Graduate success in partnering organizations</li> <li>Expansion of partnership programs</li> <li>Sector-wide partnership adoption</li> </ul>



<p><b>Workplace mentorship and initial career guidance</b></p>	<ul style="list-style-type: none"> <li>▪ Mentorship programs implemented</li> <li>▪ Mentors trained</li> <li>▪ New hires matched with mentors</li> <li>▪ Program coordination established</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mentorship satisfaction ratings</li> <li>▪ Relationship duration and quality</li> <li>▪ Early-career confidence and competence</li> <li>▪ Reduced turnover intention</li> </ul>	<ul style="list-style-type: none"> <li>▪ Retention rates comparing mentored to non-mentored employees</li> <li>▪ Career establishment success</li> <li>▪ Workplace integration quality</li> <li>▪ Progression into mid-career roles</li> </ul>
<p><b>Sponsorship and advocacy for advancement</b></p>	<ul style="list-style-type: none"> <li>▪ Sponsorship programs established</li> <li>▪ High-potential women identified</li> <li>▪ Sponsors assigned and trained</li> <li>▪ Advancement transparency created</li> </ul>	<ul style="list-style-type: none"> <li>▪ Advancement opportunity access by gender</li> <li>▪ Promotion rates disaggregated</li> <li>▪ Sponsorship relationship quality</li> <li>▪ Visibility in high-profile projects</li> </ul>	<ul style="list-style-type: none"> <li>▪ Representation in mid and senior-level positions</li> <li>▪ Advancement rate parity</li> <li>▪ Leadership pipeline diversity</li> <li>▪ Elimination of advancement glass ceilings</li> </ul>
<p><b>Leadership development pathways</b></p>	<ul style="list-style-type: none"> <li>▪ Leadership programs delivered</li> <li>▪ Participants selected and enrolled</li> <li>▪ Executive coaching provided</li> <li>▪ Leadership competency development</li> </ul>	<ul style="list-style-type: none"> <li>▪ Program completion rates</li> <li>▪ Leadership competency gains</li> <li>▪ Subsequent promotion rates</li> <li>▪ Participant satisfaction and reported benefit</li> </ul>	<ul style="list-style-type: none"> <li>▪ Women's representation in leadership roles</li> <li>▪ Leadership retention rates</li> <li>▪ Organizational culture transformation</li> <li>▪ Leadership effectiveness and success</li> </ul>
<p><b>Long-term career support and re-entry mechanisms</b></p>	<ul style="list-style-type: none"> <li>▪ Professional development access</li> <li>▪ Flexibility policies implemented</li> <li>▪ Re-entry programs established</li> <li>▪ Career counseling available</li> </ul>	<ul style="list-style-type: none"> <li>▪ Participation in development opportunities by gender</li> <li>▪ Flexibility policy utilization</li> <li>▪ Mid-career satisfaction levels</li> <li>▪ Re-entry participant numbers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Long-term retention (10+ years)</li> <li>▪ Career longevity parity</li> <li>▪ Re-entry success rates</li> <li>▪ Sustained career satisfaction and engagement</li> </ul>
<p><b>Professional networks and communities of practice</b></p>	<ul style="list-style-type: none"> <li>▪ Networks established or expanded</li> <li>▪ Events and convenings conducted</li> <li>▪ Digital platforms operational</li> <li>▪ Membership growth</li> </ul>	<ul style="list-style-type: none"> <li>▪ Network participation and engagement</li> <li>▪ Cross-organizational connection formation</li> <li>▪ Professional development delivery</li> <li>▪ Collective advocacy initiatives</li> </ul>	<ul style="list-style-type: none"> <li>▪ Network sustainability and growth</li> <li>▪ Enhanced professional belonging</li> <li>▪ Collective influence on sector practices</li> <li>▪ Visible professional community presence</li> </ul>

Table 12. Core indicators for Axis C

Organizations should establish baseline measurements before implementing interventions, enabling change measurement over time. Monitoring systems should integrate career support data into institutional databases with automated dashboards enabling real-time tracking of participation, relationship quality, and outcomes. Annual reporting to stakeholders including funders, boards, accrediting bodies, and employees creates accountability and enables adjustments when programs fail to achieve intended outcomes.

Monitoring focal points should be designated within VET institutions and employer organizations with responsibility for data collection coordination, analysis examining differential outcomes, report preparation, and facilitation of data-informed improvement. Adequate time and resources must be allocated rather than expecting voluntary efforts, with expertise development through training in gender analysis, career development evaluation, and equity metrics.

Qualitative monitoring through annual focus groups with program participants examining experiences and identifying improvements, exit interviews with women leaving educational programs or employment understanding departure reasons, periodic surveys assessing satisfaction with support received, and consultation with mentors and sponsors evaluating program effectiveness provides contextual understanding of quantitative trends. Monitoring data should be disaggregated by gender, career stage, technical specialization, and intersectional identities, examining whether interventions reach and benefit all populations proportionally. Where disparities persist or emerge, immediate investigation and program adjustment is required rather than awaiting long-term impact data.

Participatory monitoring should engage mentees, mentors, sponsors, and program coordinators in defining success beyond formal metrics, identifying unintended consequences or implementation challenges, and co-designing improvements based on experience. Annual reflection sessions bringing together diverse stakeholders to review monitoring data and plan adjustments create continuous improvement cycles. Documentation of processes, findings, and improvements should be maintained, enabling organizational learning and providing evidence for quality assurance and external reporting.

## 6.5.5 Implementation Guidelines

Successful implementation of Axis C interventions requires strategic planning, clear role allocation, adequate resource commitment, and attention to sustainability. The following guidelines support actors at all levels in translating mentoring and career support principles into practice.

Actor	Primary Responsibilities	Required Capacities
<b>VET Institutions</b>	<ul style="list-style-type: none"> <li>Establish and coordinate pre-enrollment and student mentorship programs;</li> <li>provide career counseling and transition support;</li> <li>develop employer partnerships; maintain alumni networks;</li> <li>collect monitoring data</li> </ul>	Career development expertise, program coordination capacity, employer relationship management, alumni engagement, data systems
<b>Employers</b>	<ul style="list-style-type: none"> <li>Implement workplace mentorship and sponsorship programs;</li> <li>provide work-integrated learning with mentoring;</li> <li>participate in industry-education partnerships;</li> <li>support career advancement;</li> <li>enable professional development</li> </ul>	Commitment to diversity and inclusion, mentoring and sponsorship capacity, structured learning environment provision, advancement transparency
	<ul style="list-style-type: none"> <li>Provide cross-organizational mentorship matching;</li> <li>deliver career development programming;</li> <li>facilitate networking;</li> </ul>	Member services capacity, program delivery infrastructure, advocacy

<b>Professional Associations</b>	<ul style="list-style-type: none"> <li>support women's affinity groups;</li> <li>engage in sector advocacy</li> </ul>	expertise, networking facilitation, research and knowledge production
<b>Government Authorities</b>	<ul style="list-style-type: none"> <li>Establish policy frameworks mandating career support;</li> <li>allocate funding for programs;</li> <li>integrate requirements into accreditation standards;</li> <li>coordinate cross-sector collaboration;</li> <li>monitor sector-wide outcomes</li> </ul>	Policy development expertise, regulatory authority, funding allocation power, coordination convening capacity, monitoring systems
<b>Mentors and Sponsors</b>	<ul style="list-style-type: none"> <li>Provide guidance, support, and advocacy to mentees/protégés;</li> <li>share knowledge and experiences;</li> <li>facilitate network access;</li> <li>support career decision-making;</li> <li>advocate for advancement opportunities</li> </ul>	Time commitment, mentoring/sponsorship competencies, professional experience and networks, commitment to supporting women's careers
<b>Women's Organizations and Advocacy Groups</b>	<ul style="list-style-type: none"> <li>Provide specialized support addressing gender-specific barriers;</li> <li>deliver programs for marginalized women;</li> <li>engage in collective advocacy;</li> <li>facilitate peer support;</li> <li>contribute expertise on gender equality</li> </ul>	Gender equality expertise, community connections, advocacy capabilities, program delivery capacity, understanding of intersectional barriers
<b>Students and Early-career Professionals</b>	<ul style="list-style-type: none"> <li>Actively engage in mentorship relationships;</li> <li>participate in peer networks;</li> <li>utilize career support services; provide feedback on program quality;</li> <li>support peers</li> </ul>	Openness to guidance, active participation, reflective capacity, willingness to engage, peer support commitment

Table 13. Implementation guidelines for Axis C

Implementation ultimately requires viewing mentoring and career support as ongoing investment in human capital rather than temporary initiatives. Success depends on sustained commitment from organizational leadership, adequate resource allocation commensurate with goals, active participation by mentors and sponsors willing to invest time and energy, and responsiveness to participant feedback enabling continuous improvement. Axis C interventions address relationship and support infrastructure deficits that systematically disadvantage women in male-dominated technical fields.

## 6.6 Axis D: Policy & Governance

### 6.6.1 Strategic Focus and Objectives

Axis D addresses the fundamental challenge that aspirational policy commitments without implementation mechanisms, adequate resources, enforcement capacity, and accountability systems produce symbolic gestures rather than substantive change in gender equality. This axis recognizes that voluntary approaches depending on institutional goodwill and individual champion leadership prove insufficient for systemic transformation across educational institutions and employers that systematically reproduce male dominance in green energy technical fields. Policy frameworks establishing minimum standards, mandatory requirements, monitoring systems, and consequences for non-compliance create conditions where gender equality action becomes normalized expectation rather than exceptional initiative dependent on enlightened leadership or external pressure. The **strategic objective** is to embed gender equality as non-negotiable requirement through comprehensive policy frameworks operating at institutional, regional, national, and European levels, with robust governance

mechanisms ensuring policies translate into implemented action, adequate resources enable compliance, transparent monitoring tracks progress, and accountability systems create consequences for persistent failure alongside recognition for exemplary performance.

The **scope** encompasses policy development, implementation, monitoring, and enforcement across multiple governance levels and sectoral domains. Legislative and regulatory frameworks must establish legal requirements for gender equality in vocational education and employment, specifying minimum standards institutions and employers must meet, creating enforcement mechanisms with authority to investigate and sanction non-compliance, and allocating resources enabling effective oversight. Institutional policies must operationalize higher-level frameworks through internal regulations, strategic plans, operational procedures, and resource allocation decisions translating commitments into actionable requirements for departments and personnel. Cross-ministerial and cross-sectoral coordination mechanisms must align policies across education, labor, energy, and gender equality domains, ensuring coherence rather than contradictory requirements or implementation gaps where responsibilities remain unassigned. Gender-responsive budgeting must make resource allocation visible and aligned with stated commitments, requiring explicit budget lines for gender equality activities, adequate funding levels enabling meaningful implementation, and budget monitoring ensuring allocations are spent as intended rather than redirected. Monitoring and evaluation systems must track gender-disaggregated data on access, participation, retention, advancement, and outcomes across educational institutions and employers, with standardized indicators enabling comparison and benchmarking, transparent public reporting creating external accountability, and data-informed decision-making driving continuous improvement. Stakeholder participation mechanisms must ensure women, educators, employers, and civil society organizations contribute to policy design, implementation oversight, and evaluation, preventing policies from being developed and imposed without input from those affected or expected to implement them.

**Success** in this axis manifests through comprehensive policy coverage, effective implementation, demonstrable impact on gender equality outcomes, and sustained institutional commitment. Policy-level success requires adoption of mandatory gender equality frameworks at national and regional levels establishing clear requirements for VET institutions and green energy employers, integration of gender equality into accreditation and quality assurance standards making compliance necessary for institutional approval, legislative backing providing authority for enforcement, and adequate funding allocated through national budgets and structural funds. Implementation-level success demands high institutional compliance rates with policy requirements, establishment of designated personnel and units responsible for gender equality implementation, integration of gender equality into core organizational operations rather than isolated diversity offices, and visible leadership commitment through resource allocation and accountability. Monitoring and accountability-level success includes comprehensive data collection systems tracking gender-disaggregated indicators across institutions and sectors, transparent public reporting enabling external scrutiny and comparison, independent oversight bodies with authority to investigate complaints and enforce compliance, and demonstrated consequences when organizations persistently fail to meet requirements alongside recognition and rewards for exemplary performance. Impact-level success ultimately appears through measurable improvements in women's representation, retention, and advancement across green energy education and employment, elimination of gender pay gaps, increased women's presence in technical and leadership roles, and documented changes in organizational cultures becoming more inclusive and equitable.

### 6.6.2 Key Intervention Areas

Policy and governance interventions are organized into **three strategic tiers** reflecting the policy cycle from development through implementation to accountability. Tier 1 interventions establish foundational policy frameworks and governance structures creating legal and institutional bases for gender equality

requirements. Without clear policies establishing what is required, implementation remains discretionary and accountability impossible. Tier 2 interventions operationalize policies through implementation mechanisms, resource allocation, and capacity building, translating written commitments into organizational action. Tier 3 interventions create monitoring, enforcement, and accountability systems ensuring policies are implemented as intended, identifying failures requiring correction, and creating consequences maintaining compliance pressure. This tiered approach recognizes that effective policy requires all three dimensions—clear frameworks establishing requirements, implementation mechanisms enabling compliance, and accountability systems ensuring follow-through.

Tier	Strategic Focus	Intervention Areas	Primary Target	Implementation Timeline
<b>Tier 1: Policy Frameworks and Governance Structures</b>	Establishing legal and institutional foundations for gender equality	<ul style="list-style-type: none"> <li>Legislative and regulatory frameworks</li> <li>Institutional policy development</li> <li>Cross-ministerial and cross-sectoral coordination mechanisms</li> </ul>	<ul style="list-style-type: none"> <li>Legal requirements and standards</li> <li>Institutional commitments and procedures</li> <li>Policy coherence and coordination</li> </ul>	Short to medium-term for adoption; requires political will and stakeholder consultation
<b>Tier 2: Implementation Mechanisms and Resource Allocation</b>	Translating policy into organizational action	<ul style="list-style-type: none"> <li>Gender-responsive budgeting and resource allocation</li> <li>Implementation guidance and capacity building</li> <li>Designated personnel and organizational structures</li> </ul>	<ul style="list-style-type: none"> <li>Financial resources and budget transparency</li> <li>Implementation capacity and expertise</li> <li>Organizational infrastructure</li> </ul>	Medium-term; requires budget cycles and organizational restructuring
<b>Tier 3: Monitoring, Enforcement, and Accountability</b>	Ensuring compliance and continuous improvement	<ul style="list-style-type: none"> <li>Monitoring and evaluation systems</li> <li>Enforcement mechanisms and compliance oversight</li> <li>Stakeholder participation and accountability structures</li> </ul>	<ul style="list-style-type: none"> <li>Data systems and transparency</li> <li>Compliance verification and consequences</li> <li>Participatory governance</li> </ul>	Medium to long-term for establishment; ongoing for operation

Table 14. Foundation tiers of Axis D

### Tier 1: Policy Frameworks and Governance Structures

- **Legislative and regulatory frameworks** establish legal foundations requiring gender equality action rather than leaving it to organizational discretion. National legislatures should adopt gender equality legislation specifically addressing vocational education and employment in technical sectors, establishing minimum requirements institutions and employers must meet including gender balance targets for student enrollment and workforce composition, mandatory gender equality

planning and reporting, prohibition of discrimination in recruitment and advancement, and requirements for inclusive educational and workplace environments. Legislation must specify enforcement mechanisms including regulatory bodies with authority to investigate complaints, conduct audits, issue corrective action orders, and impose sanctions for persistent non-compliance ranging from warnings and remediation requirements through funding penalties to program approval withdrawals in severe cases. Regulatory frameworks should operationalize legislation through detailed standards and procedures, specifying how compliance is assessed, what documentation organizations must maintain, timelines for reporting and reviews, and processes for complaint investigation and resolution. Employment equity regulations should establish requirements for employers in green energy sectors including workforce diversity targets, mandatory gender pay audits and reporting, career advancement transparency, workplace harassment prevention, and work-life balance policy implementation. Education regulations should integrate gender equality into VET accreditation standards, making demonstrated compliance necessary for institutional approval and continued operation, with specific criteria including gender-responsive curriculum content, inclusive pedagogy, mentorship provision, and outcome monitoring. Regulations should specify data collection requirements establishing standardized gender-disaggregated indicators institutions and employers must track and report, enabling comparison across organizations and sectors. Success indicators include legislative adoption rates across jurisdictions, comprehensiveness of legal frameworks assessed through gap analysis, regulatory standard development and publication, and legal backing for enforcement authorities.

- **Institutional policy development** translates higher-level frameworks into organizational commitments and operational procedures. VET institutions should develop comprehensive gender equality policies through consultative processes involving leadership, faculty, students, and external stakeholders, establishing institutional vision for gender equality, specific commitments across recruitment, curriculum, pedagogy, student support, and workplace culture, and accountability mechanisms with timelines and responsible parties. Gender equality action plans should operationalize policies through concrete initiatives, resource allocation, responsible personnel designation, implementation timelines, and measurable objectives enabling progress tracking. Policies should be formally adopted through governance processes including board approval, ensuring institutional leadership accountability for implementation. Institutions should conduct policy audits examining existing regulations, procedures, and practices through gender lens, identifying provisions that inadvertently create barriers, regulations requiring revision, gaps where policies are absent, and contradictions between stated commitments and operational practices. Employers should develop workplace gender equality policies addressing recruitment practices to eliminate bias, career advancement transparency and equity, pay equity and compensation fairness, workplace harassment prevention and response, flexible work arrangements and work-life balance, and organizational culture transformation toward inclusion. Policies must extend beyond formal documentation to reshape organizational cultures through leadership modeling, communications emphasizing commitment, training ensuring understanding, and integration into performance management and decision-making processes. Success indicators include policy adoption rates across institutions and employers, comprehensiveness assessed through content analysis against best practice frameworks, stakeholder participation in development processes, and formal governance approval documented.
- **Cross-ministerial and cross-sectoral coordination mechanisms** address the reality that gender equality in green energy education and employment requires coherent action across traditionally siloed policy domains. National governments should establish inter-ministerial coordination bodies convening ministries responsible for education, labor, energy, industry, gender equality, and finance in joint planning and policy alignment. Coordination bodies should conduct joint analysis identifying policy gaps where responsibilities remain unassigned, contradictions where different ministries' policies conflict, and opportunities where coordinated action could achieve synergies.



Governments should develop national strategies for gender equality in green energy transitions, establishing shared objectives across ministries, coordinated actions each ministry commits to implement, resource allocation from multiple budgets, and joint monitoring systems tracking cross-ministerial progress. Regional and local governments should establish equivalent coordination structures appropriate to their governance levels, ensuring policy coherence from national frameworks through regional implementation to local delivery. Cross-sectoral coordination should connect government, educational institutions, employers, professional associations, women's organizations, and civil society in structured dialogue forums, enabling information sharing, collaborative problem-solving, joint initiative development, and mutual accountability. Coordination mechanisms should have formal terms of reference establishing membership, meeting frequency, decision-making processes, and accountability for implementation. Secretariat support should provide coordination, documentation, follow-up on commitments, and monitoring of progress. Success indicators include establishment of coordination bodies with formal authority, participation rates from relevant ministries and stakeholders, documented policy alignment achievements, joint initiatives implemented, and measurable improvements in policy coherence.

## Tier 2: Implementation Mechanisms and Resource Allocation

- **Gender-responsive budgeting and resource allocation** makes financial commitments to gender equality visible and adequate for achieving objectives. Governments should implement gender-responsive budgeting processes requiring all ministries and agencies to analyze budget allocations through gender lens, identify how expenditures affect women and men differentially, allocate adequate resources to gender equality initiatives, and report publicly on gender equality expenditures. National education budgets should include explicit allocations for gender equality in VET including funding for curriculum development, faculty professional development, student support programs, mentorship initiatives, monitoring systems, and innovation pilots. Funding formulas for VET institutions should incorporate gender equality performance components, with additional resources allocated to institutions demonstrating commitment and excellence, creating financial incentives for implementation. Employer incentives including tax credits, procurement preferences, or subsidy programs should reward organizations implementing comprehensive gender equality programs, making business case for investment in equity. VET institutions should implement internal gender-responsive budgeting requiring departments and programs to identify gender equality resource needs, allocate specific budget lines rather than expecting initiatives to be absorbed within existing budgets, and report expenditures demonstrating implementation. Budgets should ensure adequate funding for designated personnel coordinating gender equality implementation, program delivery, infrastructure improvements including accessible equipment and facilities, monitoring and evaluation systems, and external expertise where internal capacity is insufficient. Budget monitoring should track whether allocated resources are spent as intended rather than redirected, evaluate adequacy of allocations relative to objectives, and inform adjustments in subsequent budget cycles. Success indicators include budget allocation amounts and percentages, visibility of gender equality line items in organizational budgets, adequacy assessments comparing resources to implementation requirements, and documented utilization of allocated funds.
- **Implementation guidance and capacity building** ensures organizations possess knowledge and skills for translating policies into action. National authorities should develop comprehensive implementation guidance providing detailed instructions on compliance requirements, practical toolkits and templates supporting policy operationalization, case studies demonstrating effective practices, and technical resources addressing common implementation challenges. Guidance should address multiple audiences including senior leadership requiring strategic implementation approaches, human resource and administrative staff requiring operational procedures, faculty and technical personnel requiring pedagogical and curriculum implementation guidance, and student services staff requiring support program implementation knowledge. Capacity building programs



should provide training to institutional personnel on gender equality concepts and rationale, policy requirements and compliance procedures, implementation strategies and effective practices, monitoring and evaluation methods, and continuous improvement approaches. Training should be delivered through multiple modalities including in-person workshops enabling interactive learning, online courses providing flexible access, peer learning exchanges facilitating knowledge sharing, and coaching providing personalized support. National or regional centers of excellence should be designated or established providing specialized expertise, serving as resources for institutions requiring support, conducting research on effective practices, and facilitating knowledge dissemination across sector. Technical assistance programs should provide direct support to organizations struggling with implementation through expert consultation, on-site assessment and recommendations, co-development of institutional strategies, and follow-up support ensuring recommended actions are implemented. Capacity building should be ongoing rather than one-time events, with refresher training, advanced modules for experienced practitioners, and continuous learning communities. Success indicators include guidance document development and dissemination, training participation rates, participant knowledge and skill gains assessed through pre-post evaluation, technical assistance utilization, and implementation quality improvements documented through monitoring.

- **Designated personnel and organizational structures** create internal capacity and accountability for gender equality implementation. VET institutions should establish gender equality units or offices with dedicated staff, clear mandates encompassing policy development and implementation support, adequate resources for operations, and authority to work across institutional departments. Gender equality officers or coordinators should be appointed with responsibilities including policy implementation coordination, monitoring and reporting, faculty and staff support, student consultation and advocacy, and institutional culture change initiatives. Officers require adequate position status through senior-level placement in organizational hierarchy ensuring influence, full-time dedication rather than adding to existing roles, job security enabling sustained focus, and professional development support. Institutions should establish gender equality committees or working groups with diverse membership including faculty, staff, students, and external representatives, providing oversight and strategic guidance, reviewing implementation progress and challenges, and advocating for continuous improvement. Employer organizations should appoint diversity and inclusion officers or establish human resource positions specifically focused on gender equality in technical roles, with responsibilities including policy implementation, workforce monitoring, recruitment and advancement oversight, training coordination, and workplace culture initiatives. Professional associations should designate staff or volunteer leadership responsible for member support on gender equality, policy advocacy, research and knowledge production, and program delivery. Clear reporting lines should connect designated personnel to senior leadership, ensuring visibility, accountability, and resource access. Success indicators include position establishment with adequate resources, clarity of mandates and authority, personnel qualifications and professional development, organizational structure formalization, and documented implementation leadership by designated personnel.

### Tier 3: Monitoring, Enforcement, and Accountability

- **Monitoring and evaluation systems** provide data infrastructure enabling progress tracking, problem identification, and accountability. National governments should establish comprehensive data collection systems requiring VET institutions to report standardized gender-disaggregated indicators including applicant, enrollment, and completion data by program and level, student performance and satisfaction metrics, graduate employment outcomes and career progression, and faculty composition and advancement patterns. Employers should report workforce demographics by occupational category and level, recruitment and promotion data, compensation by gender and role, retention and turnover rates, and participation in professional development. Standardized indicators should enable comparison across institutions and organizations, identification of high and

low performers, and aggregate analysis of sector-wide trends. Data collection should integrate into existing administrative systems minimizing reporting burden, employ automated dashboards providing real-time tracking, and include data quality assurance procedures ensuring accuracy and completeness. National or regional observatories should collect, analyze, and disseminate data through public reporting including annual reports on sector gender equality progress, benchmarking identifying exemplary and underperforming institutions, trend analysis examining progress over time, and research investigating persistent barriers and effective interventions. Monitoring should include qualitative assessment through periodic surveys of students, graduates, employees, and stakeholders examining experiences and identifying implementation challenges not captured in quantitative data. Evaluation studies should assess policy and program effectiveness through rigorous methods, document promising practices warranting wider adoption, and identify ineffective interventions requiring revision. Participatory monitoring should engage women students, employees, and community representatives in data interpretation and improvement planning, ensuring monitoring serves learning and accountability rather than merely compliance documentation. Success indicators include data system establishment and functionality, reporting compliance rates, data quality and completeness, monitoring report publication and dissemination, and documented utilization of data for decision-making and improvement.

- **Enforcement mechanisms and compliance oversight** create consequences for non-compliance and incentives for excellence. Regulatory bodies with authority over VET accreditation and quality assurance should integrate gender equality compliance into institutional evaluations, with comprehensive review processes examining policies, implementation evidence, outcomes data, and stakeholder consultations. Non-compliance should trigger graduated responses beginning with corrective action requirements specifying improvements needed and timelines, intensifying through warnings and public notification, and culminating in sanctions including funding reductions, enrollment restrictions, or accreditation withdrawal for persistent failure to meet standards. Compliance oversight should include complaint investigation mechanisms enabling students, employees, or external parties to report discrimination or policy violations, with independent investigation ensuring fairness, confidentiality protecting complainants from retaliation, and effective remediation when violations are substantiated. Labor inspectorates should include gender equality in employment as standard audit component for green energy sector employers, examining recruitment and advancement data, compensation equity, workplace policies, and harassment prevention systems, with authority to require corrections and impose penalties. Governments should establish gender equality tribunals or designated authorities with expertise adjudicating complex cases, interpreting policy requirements, issuing binding decisions, and establishing precedents guiding implementation. Enforcement should balance accountability with support, recognizing that many institutions genuinely require assistance rather than punitive approaches, with technical support offered alongside compliance requirements enabling organizations to improve. Public reporting of compliance status should create reputational consequences through transparency, with published rankings or scorecards comparing institutional performance, public recognition of exemplary organizations, and visibility of persistent underperformance. Success indicators include enforcement authority establishment and resourcing, compliance audit coverage rates, complaint investigation numbers and resolution times, corrective action effectiveness, and demonstrated consequences for non-compliance.
- **Stakeholder participation and accountability structures** ensure policies remain responsive to affected communities and serve their interests. Policy development processes should include mandatory consultation with women's organizations, student representatives, employee associations, and civil society groups, with meaningful engagement providing sufficient time for review and input, transparent consideration of recommendations with explanations when suggestions are not adopted, and ongoing involvement throughout implementation. Institutional governance should include stakeholder representation on boards or councils with authority over



policy adoption and oversight, ensuring gender equality advocates have formal voice in institutional decision-making. Public accountability mechanisms should enable civil society organizations to monitor implementation and advocate for improvements through access to institutional data and reports, participation in policy review and evaluation processes, standing to file complaints or challenge non-compliance, and protected advocacy rights without organizational retaliation. Stakeholder accountability forums should convene government officials, institutional leaders, and civil society representatives in regular public sessions reviewing progress, examining challenges, and planning improvements, with published proceedings ensuring transparency. Independent oversight bodies such as ombudspersons, human rights commissions, or gender equality agencies should provide external accountability through authority to investigate systemic issues, conduct inquiries into policy implementation, issue recommendations with public reporting, and monitor government and institutional compliance with recommendations. Participatory evaluation should engage diverse stakeholders in assessing policy effectiveness, interpreting monitoring data, identifying unintended consequences, and co-designing improvements, ensuring policies evolve based on implementation experience. Success indicators include stakeholder consultation rates and meaningful engagement documentation, representation in governance structures, civil society monitoring and advocacy activity, accountability forum convening and outcomes, and independent oversight body investigations and recommendations.

### 6.6.3 Implementation Pathways

Policy and governance interventions require coordinated action across government, regulatory bodies, educational institutions, employers, and civil society organizations. Individual-level pathways ensure people affected by policies—women students and employees—can participate in policy development, monitor implementation, and hold institutions accountable. Institutional-level pathways establish capacities within VET providers and employers for policy implementation, monitoring, and continuous improvement. Systemic-level pathways create legal frameworks, coordination mechanisms, and accountability structures embedding gender equality as fundamental requirement across educational and employment sectors.

#### Individual-Level Implementation

- **Policy participation and advocacy** enables affected individuals and communities to shape policies serving their interests. Women's organizations, student associations, and employee unions should be systematically included in policy development consultations at institutional, regional, and national levels, with advance notice enabling preparation, accessible formats facilitating participation, translation where linguistic diversity exists, and documented consideration of input provided. Capacity building should prepare women students and employees for effective participation through training on policy analysis, advocacy skills development, coalition building, and strategic communication, enabling informed engagement rather than tokenistic inclusion. Digital platforms should enable broader participation beyond individuals able to attend in-person consultations, with online surveys gathering input, discussion forums enabling deliberation, and feedback mechanisms ensuring contributions reach decision-makers. Participatory research should engage women in investigating barriers, documenting experiences, and developing evidence-based recommendations, positioning them as knowledge producers rather than merely data sources. Student representatives should have formal positions on institutional governance bodies with voting rights, participation in policy committees, access to information, and protected advocacy roles. Employee representatives should participate in workplace policy development and implementation oversight through unions or works councils, with collective bargaining agreements including gender equality provisions where applicable. Success metrics include stakeholder participation rates in consultations, diversity of participants across demographics, documentation of input influence on policy outcomes, and participatory research production.

- **Transparency and information access** enables external scrutiny and accountability. Institutions and employers should publicly disclose gender-disaggregated data on composition, outcomes, policies, and programs through accessible websites, annual reports, and data portals, with information updated regularly and presented in comprehensible formats. Freedom of information mechanisms should enable civil society organizations, researchers, and journalists to access detailed institutional data, with requests processed promptly and exemptions narrowly applied only where legitimate privacy or security concerns exist. Public reporting should include not only compliance documentation but honest assessment of challenges, barriers encountered, implementation failures, and planned improvements, creating transparency rather than public relations. Citizens should have standing to request investigations of suspected policy violations or discrimination, with accessible complaint mechanisms, protection from retaliation for good-faith reporting, and timely responses with substantive outcomes. Media engagement should amplify transparency through investigative reporting on gender equality implementation, publication of data analyses comparing institutions, and public discussion of policy effectiveness, creating informed public discourse and accountability pressure. Success indicators include data disclosure completeness and accessibility, information request fulfillment rates, complaint mechanism utilization and responsiveness, and media coverage quantity and quality.

### Institutional-Level Implementation

- VET institutions must develop comprehensive policy implementation systems. Institutional leadership should adopt formal gender equality policies through board or council approval, establishing organizational commitment with senior leadership accountability. Policies should specify concrete commitments across all institutional functions including student recruitment and admissions, curriculum and pedagogy, student support and mentorship, faculty recruitment and development, workplace culture and environment, and governance and decision-making. Implementation plans should operationalize policies through specific initiatives, designated responsible parties, implementation timelines, resource allocation, and measurable objectives enabling progress tracking. Gender equality units or designated coordinators should be established with adequate resources, clear authority, and senior-level reporting lines, responsible for policy implementation coordination, monitoring and evaluation, training and capacity building, stakeholder consultation, and institutional advocacy. Policies should integrate into core institutional operations through inclusion in strategic plans, operational procedures, quality assurance frameworks, and performance evaluation systems rather than existing as isolated diversity initiatives. Faculty and staff should receive training ensuring policy understanding, implementation capacity, and personal accountability, with mandatory participation for all personnel and specialized training for those with implementation responsibilities. Student consultation should inform policy development and revision through student representation on policy committees, regular forums gathering student input, surveys assessing experiences, and grievance mechanisms enabling complaints with fair investigation and resolution. Institutions should establish internal monitoring systems tracking gender-disaggregated data, conducting regular self-assessments against policy objectives, producing annual reports for internal and external audiences, and utilizing data for continuous improvement. External evaluation through periodic accreditation reviews, independent audits, or peer reviews should assess implementation quality, validate internal monitoring, and provide accountability. Success indicators include policy adoption with governance approval, implementation plan completion and adherence, gender equality unit establishment and operation, training participation rates, monitoring system functionality, and demonstrable policy implementation across institution.
- **Employers** must formalize workplace gender equality through policy and governance integration. Organizations should develop comprehensive workplace equality policies addressing recruitment without bias, advancement transparency and equity, compensation fairness including pay equity audits, workplace harassment prevention and response, flexible work enabling work-life integration, and inclusive culture fostering belonging. Policies should result from consultative processes



including employee input, union negotiation where applicable, and senior leadership approval, with board-level oversight ensuring accountability. Human resource systems should integrate gender equality into standard processes including job advertisement and recruitment procedures emphasizing diversity, performance evaluation criteria incorporating equality responsibilities, promotion processes with transparency and bias mitigation, and exit interview protocols investigating retention issues. Diversity and inclusion functions should be established within organizations with dedicated personnel, adequate resources, authority to implement across departments, and reporting to senior leadership or board level, responsible for policy implementation, workforce monitoring, recruitment and advancement oversight, training delivery, and culture change initiatives. Training programs should ensure all employees understand policies and responsibilities, with mandatory participation, regular refresher courses, and specialized training for managers and human resource personnel. Employee resource groups or women's networks should be supported through organizational resources, meeting space and time, leadership development opportunities, and formal consultation in policy development. Workplace monitoring should track gender-disaggregated workforce data, advancement rates, compensation equity, retention patterns, and employee satisfaction, with regular reporting to leadership and where appropriate to boards or shareholders. External accountability should occur through voluntary disclosure initiatives, industry benchmarking participation, and stakeholder engagement including investor relations discussing diversity performance. Success indicators include policy adoption and governance oversight, human resource system integration, dedicated diversity function establishment, training completion rates, employee resource group activity, monitoring system operation, and workforce outcome improvements.

- **Professional associations** should establish sector-wide standards and accountability mechanisms. Associations should develop model policies and implementation guidance for member organizations, providing templates, toolkits, and case studies supporting implementation. Professional standards should integrate gender equality competencies for practitioners in green energy technical fields, requiring demonstrated knowledge and commitment as membership or certification requirement. Training and professional development should include mandatory gender equality content in continuing education requirements, specialized courses for leadership development, and resources for organizational implementation support. Associations should conduct research and knowledge production on gender equality in green energy sectors through commissioned studies, practitioner surveys, effectiveness evaluations, and dissemination of findings via publications, conferences, and online resources. Sector monitoring should aggregate data from member organizations enabling benchmarking, trend analysis, and identification of systemic issues, with public reporting creating transparency and accountability. Associations should engage in policy advocacy representing sector interests in government consultations, recommending policy improvements based on implementation experience, and holding governments accountable for adequate support and enforcement. Ethics and professional standards committees should address complaints about member conduct including discrimination or harassment, with investigation procedures, sanctions including membership suspension or expulsion, and referral to regulatory authorities where appropriate. Success indicators include model policy development and adoption rates, professional standard integration, research output and dissemination, sector monitoring report publication, advocacy impact on policy, and ethics complaint processing.

### Systemic-Level Implementation

- Legislative and regulatory adoption requires government action establishing legal requirements. National legislatures should adopt comprehensive gender equality legislation covering vocational education and technical employment, informed by stakeholder consultations including women's organizations, educators, employers, and researchers. Legislative processes should include public hearings enabling testimony, committee deliberations examining evidence and proposals, and adequate time for thorough consideration rather than rushed adoption. Legislation should establish clear requirements, enforcement authorities and mechanisms, adequate resourcing, and timelines for

implementation. Regulatory bodies should develop detailed regulations operationalizing legislation through standard-setting, compliance procedures, reporting requirements, and enforcement protocols, with regulatory development processes including public consultation and technical expertise. Regulations should balance standardization enabling consistency with flexibility accommodating diverse organizational contexts. Government ministries should issue policy directives and guidance ensuring consistent interpretation and implementation across jurisdictions and sectors. International and regional policy frameworks including European Union directives should inform national legislation, with governments obligated to transpose requirements into domestic law with effective implementation. Policy review processes should enable periodic assessment and revision based on implementation experience, evolving evidence, and stakeholder feedback. Success indicators include legislative adoption across jurisdictions, comprehensiveness and quality assessed through legal analysis, regulatory framework completion, alignment with international standards, and implementation timeline adherence.

- Funding allocation and financial mechanisms must provide resources enabling implementation. National budgets should allocate dedicated funding for gender equality in VET and green energy employment through line items in education ministry budgets, labor market program allocations, and structural or development fund designations. Funding should support implementation capacity building, institutional program delivery, monitoring and evaluation systems, research and innovation, and enforcement operations. Funding formulas should incorporate gender equality performance components with additional resources for high-performing institutions, creating financial incentives. Grant programs should support pilot initiatives, innovation projects, cross-sectoral partnerships, and civil society organization engagement, with competitive processes emphasizing quality and potential impact. Tax incentives or subsidies should reward employer investments in gender equality programs including training expenditures, mentorship program costs, and workplace accommodation expenses, improving business case for implementation. International development funding and European structural funds should prioritize gender equality in green transitions, with application requirements mandating gender analysis and equality commitments, evaluation criteria assessing gender impact, and monitoring ensuring commitments are fulfilled. Funding should be sustained over sufficient periods enabling meaningful implementation rather than short-term grants requiring constant fundraising, with multi-year commitments providing stability. Budget monitoring should track utilization, evaluate effectiveness, and inform allocation adjustments in subsequent cycles. Success indicators include funding allocation amounts and visibility in budgets, sustainability and multi-year commitment, utilization rates and implementation outcomes, and demonstrated adequacy for achieving objectives.
- **Coordination infrastructure and knowledge systems** must connect actors and enable learning. Government should establish permanent coordination bodies at national and regional levels with formal authority, adequate secretariat support, regular meeting schedules, and accountability for outcomes. Coordination bodies should produce national action plans establishing shared objectives, distributed responsibilities, resource commitments, and joint monitoring, with periodic review and updating. Knowledge systems should capture and disseminate effective practices through national repositories of policies, programs, and evaluation findings, online platforms enabling search and access, publications including practitioner guides and policy briefs, and conferences enabling exchange. Centers of excellence should be designated or established providing specialized expertise, conducting research, delivering training, and supporting organizational implementation. International cooperation should enable cross-national learning through participation in international networks, bilateral or multilateral exchange programs, joint research initiatives, and adoption of international best practices. Monitoring and evaluation infrastructure should provide standardized data collection tools, analysis capacity, reporting systems, and data access enabling stakeholder utilization. Quality assurance frameworks should integrate gender equality throughout accreditation standards, institutional evaluations, program reviews, and continuous improvement processes. Success indicators include coordination body establishment and functioning, national

action plan development and implementation, knowledge system development and utilization, center of excellence operation and impact, and quality assurance integration.

- **Enforcement capacity and accountability operations** must ensure compliance. Regulatory bodies should possess adequate staffing, expertise, authority, and resources for compliance monitoring including institutional audits, complaint investigations, and enforcement actions. Inspector or auditor training should include gender equality expertise, investigation methods, legal frameworks, and fair procedures. Compliance reviews should follow regular schedules ensuring all institutions are monitored periodically, with risk-based targeting intensifying oversight of organizations with poor performance or complaint histories. Investigations should follow fair procedures protecting rights of complainants and accused parties, with timely processing, evidence-based determinations, and appropriate remedies when violations are found. Enforcement actions should follow graduated responses proportionate to violation severity and organizational response, with corrective action requirements, follow-up verification, and escalation to sanctions when improvements are not made. Appeals mechanisms should provide procedural fairness when organizations contest determinations, with independent adjudication, transparent processes, and published decisions creating precedents. Public reporting should disclose compliance status, enforcement actions taken, and outcomes achieved, creating transparency and accountability. International accountability through treaty monitoring bodies, regional human rights mechanisms, and international organization reviews should supplement national enforcement, providing external scrutiny and recommendations. Success indicators include regulatory body resourcing and capacity, audit and investigation completion rates, enforcement action numbers and types, demonstrated compliance improvements following enforcement, and public reporting transparency.

#### 6.6.4 Success Indicators and Monitoring

Effective monitoring requires clear, measurable indicators aligned with policy and governance objectives across development, implementation, and accountability dimensions. Indicators should assess policy coverage and quality, implementation extent and fidelity, resource adequacy, compliance rates, enforcement effectiveness, and ultimately impact on gender equality outcomes (table 15). Data collection must utilize existing government administrative systems, institutional reporting, and regulatory oversight processes, ensuring sustainability and reducing burden. Monitoring should occur at three temporal scales: immediate output indicators measured within 12 months documenting policy adoption and infrastructure establishment, intermediate outcome indicators measured annually assessing implementation quality and compliance, and long-term impact indicators measured over 3-5 years demonstrating systemic transformation.



Intervention Area	Immediate Outputs (0-12 months)	Intermediate Outcomes (1-2 years)	Long-term Impact (3-5 years)
<b>Legislative and regulatory frameworks</b>	<ul style="list-style-type: none"> <li>Legislation adopted at national/regional levels</li> <li>Regulations developed and published</li> <li>Enforcement authorities established</li> <li>Stakeholder consultation completed</li> </ul>	<ul style="list-style-type: none"> <li>Legal framework comprehensiveness (gap analysis)</li> <li>Regulatory standard clarity and specificity</li> <li>Awareness among institutions and employers</li> <li>Legal challenges resolved establishing precedents</li> </ul>	<ul style="list-style-type: none"> <li>Legislative effectiveness in driving change</li> <li>Uniform application across jurisdictions</li> <li>Regulatory framework stability and legitimacy</li> <li>Gender equality integration into legal architecture</li> </ul>
<b>Institutional policy development</b>	<ul style="list-style-type: none"> <li>Policies adopted by VET institutions and employers</li> <li>Action plans developed</li> <li>Governance approval documented</li> <li>Policy audits completed</li> </ul>	<ul style="list-style-type: none"> <li>Policy comprehensiveness (content analysis)</li> <li>Stakeholder participation in development</li> <li>Internal awareness and understanding</li> <li>Initial implementation initiatives launched</li> </ul>	<ul style="list-style-type: none"> <li>Policy implementation breadth and depth</li> <li>Integration into organizational operations</li> <li>Cultural transformation toward inclusion</li> </ul>
<b>Cross-ministerial and cross-sectoral coordination</b>	<ul style="list-style-type: none"> <li>Coordination bodies established</li> <li>Membership confirmed across ministries/sectors</li> <li>Terms of reference adopted</li> <li>Initial meetings convened</li> </ul>	<ul style="list-style-type: none"> <li>Meeting frequency and attendance</li> <li>Joint initiatives implemented</li> <li>Policy alignment achievements</li> <li>Stakeholder satisfaction with coordination</li> </ul>	<ul style="list-style-type: none"> <li>Policy coherence across domains</li> <li>Sustained collaborative relationships</li> <li>Joint problem-solving effectiveness</li> <li>Elimination of implementation gaps</li> </ul>
<b>Gender-responsive budgeting and resource allocation</b>	<ul style="list-style-type: none"> <li>Budget lines established for gender equality</li> <li>Resource allocation amounts determined</li> <li>Funding mechanisms operational</li> <li>Budget transparency implemented</li> </ul>	<ul style="list-style-type: none"> <li>Adequacy of allocations (needs assessment)</li> <li>Budget utilization rates</li> <li>Resource distribution across initiatives</li> <li>Financial reporting quality</li> </ul>	<ul style="list-style-type: none"> <li>Sustained funding over time</li> <li>Resource adequacy for objectives</li> <li>Demonstrable link between funding and outcomes</li> <li>Mainstreamed gender budgeting</li> </ul>
<b>Implementation guidance and capacity building</b>	<ul style="list-style-type: none"> <li>Guidance documents developed and disseminated</li> <li>Training programs designed and launched</li> </ul>	<ul style="list-style-type: none"> <li>Training participation rates</li> <li>Knowledge and skill gains (assessments)</li> <li>Technical assistance utilization</li> <li>Guidance document usage and feedback</li> </ul>	<ul style="list-style-type: none"> <li>Organizational capacity improvement</li> <li>Implementation quality enhancement</li> </ul>



	<ul style="list-style-type: none"> <li>▪ Technical assistance capacity established</li> <li>▪ Resource materials accessible</li> </ul>		<ul style="list-style-type: none"> <li>▪ Reduced technical assistance dependence</li> <li>▪ Peer learning and knowledge sharing</li> </ul>
<b>Designated personnel and organizational structures</b>	<ul style="list-style-type: none"> <li>▪ Gender equality positions created and filled</li> <li>▪ Units or offices established</li> <li>▪ Mandates and authorities clarified</li> <li>▪ Resources allocated for operations</li> </ul>	<ul style="list-style-type: none"> <li>▪ Personnel qualifications and expertise</li> <li>▪ Organizational influence and authority</li> <li>▪ Coordination effectiveness across departments</li> <li>▪ Stakeholder relationships quality</li> </ul>	<ul style="list-style-type: none"> <li>▪ Institutionalization of gender equality function</li> <li>▪ Sustained organizational capacity</li> <li>▪ Leadership in implementation</li> <li>▪ Demonstrable impact on outcomes</li> </ul>
<b>Monitoring and evaluation systems</b>	<ul style="list-style-type: none"> <li>▪ Data collection systems established</li> <li>▪ Indicators standardized</li> <li>▪ Reporting requirements specified</li> <li>▪ Data infrastructure operational</li> </ul>	<ul style="list-style-type: none"> <li>▪ Reporting compliance rates</li> <li>▪ Data quality and completeness</li> <li>▪ Analysis production and dissemination</li> <li>▪ Data utilization for decision-making</li> </ul>	<ul style="list-style-type: none"> <li>▪ Comprehensive, reliable data availability</li> <li>▪ Transparent public reporting</li> <li>▪ Evidence-based policy improvement</li> <li>▪ Demonstrated accountability impact</li> </ul>
<b>Enforcement mechanisms and compliance oversight</b>	<ul style="list-style-type: none"> <li>▪ Enforcement authorities resourced</li> <li>▪ Compliance review procedures established</li> <li>▪ Complaint mechanisms operational</li> <li>▪ Initial audits conducted</li> </ul>	<ul style="list-style-type: none"> <li>▪ Audit coverage rates</li> <li>▪ Compliance rates across institutions</li> <li>▪ Complaint investigation timeliness</li> <li>▪ Enforcement action effectiveness</li> </ul>	<ul style="list-style-type: none"> <li>▪ Sustained high compliance levels</li> <li>▪ Rapid problem identification and correction</li> <li>▪ Deterrent effect of enforcement</li> <li>▪ Fair and consistent application</li> </ul>
<b>Stakeholder participation and accountability structures</b>	<ul style="list-style-type: none"> <li>▪ Participation mechanisms established</li> <li>▪ Stakeholder representation formalized</li> <li>▪ Accountability forums convened</li> <li>▪ Independent oversight operational</li> </ul>	<ul style="list-style-type: none"> <li>▪ Meaningful engagement quality</li> <li>▪ Stakeholder influence on decisions</li> <li>▪ Civil society monitoring activity</li> <li>▪ Oversight body investigation numbers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Responsive, inclusive policy processes</li> <li>▪ Effective external accountability</li> <li>▪ Civil society capacity and influence</li> <li>▪ Democratic governance of gender equality</li> </ul>

Table 15. Core indicators for Axis D

National governments and regulatory bodies should establish baseline measurements before policy implementation, enabling change measurement over time. Monitoring systems should integrate policy compliance and gender equality outcome data into existing government statistical systems, quality assurance databases, and public reporting platforms, with automated dashboards enabling real-time tracking by policymakers, institutions, and public stakeholders. Annual reporting to legislatures, oversight bodies, and public through accessible publications creates accountability and enables course correction when policies prove ineffective.

Monitoring focal points should be designated within education ministries, regulatory agencies, and oversight bodies with responsibilities for data collection coordination, compliance monitoring, analysis and reporting, and policy review recommendations. Adequate personnel, expertise, and resources must be allocated rather than expecting monitoring to occur without dedicated capacity. Independent evaluation should periodically assess policy framework effectiveness, implementation quality across jurisdictions, enforcement capacity and effectiveness, and impact on gender equality outcomes, with findings published and recommendations addressed through policy revision.

Qualitative monitoring through periodic consultations with women students and employees examining policy effectiveness in addressing barriers, surveys of institutional personnel assessing implementation challenges and support needs, focus groups with employers understanding compliance obstacles, and interviews with civil society organizations evaluating accountability mechanisms provides contextual understanding complementing quantitative compliance data. Monitoring should disaggregate data by institution type, geographic region, sector, and intersectional identities, examining whether policies achieve equitable impact or differentially benefit some populations while failing others. Where implementation failures, persistent non-compliance, or unintended negative consequences appear, immediate investigation and policy or implementation adjustment is required.

Participatory monitoring should engage diverse stakeholders in data interpretation, policy assessment, and improvement planning, ensuring monitoring serves learning and accountability rather than merely bureaucratic compliance. Annual policy review sessions bringing together government officials, institutional representatives, civil society organizations, and independent experts to examine monitoring data, assess implementation progress, identify barriers, and recommend improvements create cycles of continuous policy evolution. International peer review through voluntary participation in comparative studies, hosting of international experts, and submission to international treaty monitoring creates external accountability and access to global expertise. Documentation of monitoring processes, findings, policy revisions, and lessons learned should be maintained, enabling institutional memory and informing other jurisdictions' policy development.

## 6.6.5 Implementation Guidelines

Successful implementation of Axis D interventions requires political commitment, multi-stakeholder collaboration, adequate resourcing, and sustained attention over extended timeframes. The following guidelines support actors at all levels in translating policy and governance principles into effective frameworks driving systemic change.

Actor	Primary Responsibilities	Required Capacities
<b>National and Regional Governments</b>	<ul style="list-style-type: none"> <li>▪ Adopt legislation establishing gender equality requirements;</li> <li>▪ develop regulations operationalizing laws;</li> <li>▪ allocate funding;</li> <li>▪ establish coordination mechanisms;</li> <li>▪ ensure enforcement</li> </ul>	Legislative and regulatory authority, policy development expertise, budget allocation power, enforcement capacity, coordination convening ability

<b>Education Ministries and Authorities</b>	<ul style="list-style-type: none"> <li>Integrate gender equality into VET policy frameworks;</li> <li>establish accreditation requirements;</li> <li>provide guidance and support;</li> <li>monitor compliance;</li> <li>coordinate with other ministries</li> </ul>	Policy development expertise, VET system understanding, regulatory authority, monitoring systems, cross-ministry coordination
<b>Regulatory and Quality Assurance Bodies</b>	<ul style="list-style-type: none"> <li>Integrate gender equality into accreditation standards;</li> <li>conduct compliance audits;</li> <li>investigate complaints;</li> <li>enforce corrective actions;</li> <li>report publicly</li> </ul>	Regulatory authority, audit and investigation capacity, gender equality expertise, enforcement tools, transparency mechanisms
<b>VET Institutions</b>	<ul style="list-style-type: none"> <li>Adopt comprehensive gender equality policies;</li> <li>implement across all functions;</li> <li>allocate resources;</li> <li>establish monitoring;</li> <li>report compliance;</li> </ul>	Policy development capacity, implementation infrastructure, budget authority, data systems, stakeholder engagement capabilities
<b>Employers</b>	<ul style="list-style-type: none"> <li>Develop workplace equality policies; implement across recruitment, advancement, compensation; monitor workforce data; report compliance; support sector initiatives</li> </ul>	Commitment to diversity, human resource capacity, data systems, budget allocation, industry collaboration willingness
<b>Professional Associations</b>	<ul style="list-style-type: none"> <li>Develop sector standards;</li> <li>provide implementation guidance;</li> <li>facilitate peer learning;</li> <li>conduct sector monitoring;</li> <li>engage in advocacy</li> </ul>	Sector knowledge, member services capacity, research capability, advocacy expertise, convening authority
<b>Women's Organizations and Civil Society</b>	<ul style="list-style-type: none"> <li>Participate in policy development;</li> <li>monitor implementation;</li> <li>hold institutions accountable;</li> <li>support affected individuals;</li> <li>engage in advocacy</li> </ul>	Gender equality expertise, advocacy capacity, monitoring skills, community connections, legal knowledge
<b>Oversight and Accountability Bodies</b>	<ul style="list-style-type: none"> <li>Investigate systemic issues;</li> <li>conduct inquiries;</li> <li>issue recommendations;</li> <li>monitor government compliance;</li> <li>provide independent assessment</li> </ul>	Independence and authority, investigation capacity, legal expertise, political legitimacy, public communication
<b>Research and Academic Institutions</b>	<ul style="list-style-type: none"> <li>Conduct policy evaluation;</li> <li>document effective practices;</li> <li>investigate barriers;</li> <li>provide evidence base;</li> <li>build knowledge systems</li> </ul>	Research expertise, methodological rigor, independence, dissemination capacity, policy translation skills

Table 16. Implementation guidelines for Axis D

Implementation requires recognizing that policy and governance transformation represents fundamental shift in how power operates, resources are allocated, and accountability functions in vocational education and technical employment. Successful implementation depends on political leadership willing to establish and enforce requirements despite resistance, adequate resources commensurate with transformation ambitions, effective coordination across traditionally siloed policy domains, robust accountability creating consequences for failure and recognition for success, and sustained commitment

outlasting individual champions or political cycles. Axis D interventions create enabling conditions for all other Blueprint axes—without policy frameworks establishing requirements and accountability systems ensuring compliance, curriculum reform, mentoring provision, and access improvements remain dependent on exceptional institutional leadership rather than normalized expectation across sector.

## 6.7 Axis E: Community & Industry Engagement

### 6.7.1 Strategic Focus and Objectives

Axis E addresses the fundamental limitation that fragmented, sector-specific interventions attempting to solve systemic problems within isolated institutional or organizational boundaries prove insufficient for transforming deeply embedded gender inequality. This axis recognizes that women's underrepresentation in green energy stems from interconnected barriers spanning education systems, labor markets, workplace cultures, family attitudes, community norms, policy frameworks, and public discourse—none of which can be effectively addressed by single actors operating independently. Educational institutions alone cannot overcome societal stereotypes about women's technical capabilities, workplace discrimination, or family resistance to daughters pursuing non-traditional careers. Employers alone cannot resolve inadequate educational preparation, limited applicant pools resulting from early educational tracking, or work-life integration challenges stemming from absent childcare infrastructure. Government alone cannot implement reforms without educational institutions' pedagogical expertise, employers' labor market knowledge, or community organizations' trusted relationships with marginalized populations. The **strategic objective** is to create multi-stakeholder collaboration ecosystems where educational institutions, employers, government agencies, community organizations, women's advocacy groups, and professional associations work toward shared objectives through formal partnership structures, coordinated interventions, mutual accountability, and sustained commitment, recognizing that systemic transformation requires collective action transcending organizational boundaries.

The **scope** encompasses partnership formation, collaborative initiative development, coordinated implementation, and mutual accountability across diverse stakeholder groups. Education-industry partnerships must extend beyond transactional work placement provision to strategic collaboration including joint curriculum development ensuring labor market relevance, shared investment in student preparation through equipment donations and instructor training, coordinated recruitment efforts reaching diverse candidates, and employment pathways with mentorship and advancement support creating continuity from education through career establishment. Community engagement must connect educational institutions and employers with families, local organizations, faith-based groups, and community leaders who shape career aspirations and decisions, particularly in contexts where traditional gender norms remain influential, through awareness campaigns featuring local role models, information sessions addressing cultural concerns, and partnership with trusted messengers enabling authentic communication. Women's organizations and civil society engagement must leverage specialized expertise in addressing barriers women face, trusted relationships with diverse female populations, advocacy capacity pressuring institutions for accountability, and collective voice amplifying individual experiences into systemic change demands, through formal partnerships with resource commitments, consultation in decision-making, and recognition as essential implementation partners rather than peripheral stakeholders. Professional networks must increase role model visibility, provide peer support, facilitate knowledge sharing about effective practices, and engage in collective advocacy for sector transformation through conferences, publications, mentorship programs, and policy recommendations. Public awareness and perception transformation must challenge stereotypes about women's technical capabilities, reposition green energy careers as economically attractive and socially valued, celebrate women's contributions and achievements, and create cultural shifts in how technical work is understood,

through sustained campaigns utilizing traditional and social media, educational materials, public events, and influential spokesperson engagement.

**Success** in this axis manifests through partnership establishment and sustainability, collaborative initiative implementation and impact, stakeholder commitment and accountability, and ultimately cultural transformation in how green energy careers are perceived and accessed. Partnership-level success requires formal agreements specifying mutual commitments and resource contributions, diverse stakeholder participation representing education, industry, government, civil society, and communities, governance structures ensuring shared decision-making and accountability, sustained engagement over multiple years rather than episodic interaction, and demonstrated collaboration producing outcomes no single actor could achieve independently. Initiative-level success demands joint program design addressing identified barriers through coordinated action, implementation fidelity with all partners fulfilling commitments, adequate resource mobilization from multiple sources, measurable improvements in target outcomes including women's access and success, and scalability enabling expansion from pilot successes to broader implementation. Accountability-level success includes transparent reporting on partnership activities and outcomes, mutual monitoring where partners hold each other accountable for commitments, willingness to address implementation challenges collaboratively rather than through blame attribution, and consequences when partners persistently fail to fulfill obligations alongside recognition for exemplary contribution. Impact-level success ultimately appears through measurable increases in women's representation across green energy education and employment resulting from coordinated interventions, cultural shifts in family and community attitudes toward women's technical careers, enhanced institutional and employer practices influenced by partnership learning, policy improvements informed by partnership advocacy and evidence generation, and normalization of multi-stakeholder collaboration as standard approach rather than exceptional innovation.

### 6.7.2 Key Intervention Areas

Community and industry engagement interventions are organized into **three strategic tiers** reflecting partnership development from formation through implementation to sustainability and scale. Tier 1 interventions establish partnership foundations through stakeholder identification, relationship building, formal agreement development, and governance structure creation, recognizing that effective collaboration requires deliberate construction rather than assuming alignment. Tier 2 interventions implement collaborative initiatives addressing identified barriers through coordinated action, resource mobilization, and sustained engagement, translating partnership agreements into tangible interventions. Tier 3 interventions ensure partnership sustainability, accountability, and scaling through monitoring and evaluation, mutual accountability mechanisms, continuous improvement processes, and expansion strategies enabling successful approaches to reach broader populations. This tiered approach recognizes that partnerships require all three dimensions—strong foundations enabling collaboration, effective implementation delivering results, and accountability with scaling ensuring lasting impact.

Tier	Strategic Focus	Intervention Areas	Primary Target	Implementation Timeline
<b>Tier 1: Partnership Formation and Governance</b>	Establishing collaborative foundations and structures	<ul style="list-style-type: none"> <li>▪ Multi-stakeholder partnership development</li> <li>▪ Formal agreements and governance structures</li> <li>▪ Stakeholder mapping and engagement strategies</li> </ul>	<ul style="list-style-type: none"> <li>▪ Partnership establishment</li> <li>▪ Governance and decision-making</li> <li>▪ Stakeholder identification and recruitment</li> </ul>	Short to medium-term for establishment; requires trust-building and negotiation
<b>Tier 2: Collaborative</b>	Delivering coordinated	<ul style="list-style-type: none"> <li>▪ Education-industry partnership programs</li> </ul>	<ul style="list-style-type: none"> <li>▪ Joint program delivery</li> </ul>	Medium to long-term; requires sustained

<b>Initiative Implementation</b>	interventions addressing barriers	<ul style="list-style-type: none"> <li>▪ Community outreach and awareness campaigns</li> <li>▪ Women's organization and civil society engagement</li> <li>▪ Professional networks and role model visibility</li> </ul>	<ul style="list-style-type: none"> <li>▪ Coordinated recruitment and support</li> <li>▪ Public awareness and perception change</li> </ul>	collaboration and resource commitment
<b>Tier 3: Accountability, Learning, and Scaling</b>	Ensuring effectiveness, sustainability, and expansion	<ul style="list-style-type: none"> <li>▪ Monitoring and evaluation of partnership outcomes</li> <li>▪ Mutual accountability mechanisms</li> <li>▪ Knowledge sharing and continuous improvement</li> <li>▪ Scaling strategies and expansion pathways</li> </ul>	<ul style="list-style-type: none"> <li>▪ Partnership performance and impact</li> <li>▪ Accountability and compliance</li> <li>▪ Replication and scale</li> </ul>	Long-term sustained effort; requires institutional commitment and adaptation

Table 17. Foundation tiers of Axis E

### Tier 1: Partnership Formation and Governance

- **Multi-stakeholder partnership development** requires deliberate identification and engagement of diverse actors whose collaboration is necessary for systemic change. Partnership development should begin with stakeholder mapping identifying key organizations and individuals whose participation is essential including VET institutions providing education, employers offering employment opportunities, government agencies with policy authority and resources, women's organizations possessing specialized expertise and community connections, professional associations providing sector coordination, community organizations serving as trusted messengers, and research institutions contributing evaluation and evidence generation. Mapping should assess stakeholders' current gender equality commitment, capacity to contribute resources or expertise, relationships with target populations, and potential barriers to participation requiring address. Engagement strategies should be tailored to different stakeholder types, recognizing that employers require business case arguments and return on investment evidence, community organizations need respect for local knowledge and culturally appropriate approaches, and government agencies operate within political constraints and bureaucratic procedures requiring navigation. Initial convening should bring together diverse stakeholders in exploratory discussions examining shared concerns about gender inequality in green energy, identifying potential collaboration opportunities, surfacing concerns or barriers to partnership, and building interpersonal relationships foundational to trust. Partnership champions within participating organizations—individuals with authority, commitment, and persuasive capacity—should be identified and cultivated, as their leadership proves critical for mobilizing organizational commitment. Partnership development should proceed through phases beginning with informal networking and relationship building, advancing to formal discussions articulating partnership purpose and potential activities, culminating in commitment decisions where organizations agree to participate with specified resource contributions. Success indicators include diversity of stakeholder types represented, organizational commitment levels, champion identification and engagement, and progression from informal networking to formal partnership establishment.
- **Formal agreements and governance structures** create institutional foundations for sustained collaboration. Partnership agreements should be developed collaboratively through negotiation processes where all partners contribute to defining partnership vision establishing shared understanding of purpose and objectives, specific commitments each partner agrees to fulfill



including resource contributions and activities, governance structures specifying decision-making processes and authority distribution, roles and responsibilities clarifying who is accountable for which partnership functions, communication protocols establishing how partners will interact and share information, conflict resolution mechanisms providing processes for addressing disagreements, duration and renewal provisions establishing partnership timeframes and continuation processes, and exit provisions enabling partners to withdraw with notice and responsibilities for transition. Agreements should be formal documents signed by authorized organizational representatives, creating institutional commitment transcending individual champion involvement. Governance structures should ensure shared power and decision-making through partnership councils or steering committees with representatives from all partner organizations, rotating chair or co-chair arrangements preventing single-organization dominance, consensus-based decision-making on strategic issues ensuring all voices are heard, and clear authority over partnership resources and activities. Working groups or task forces should address specific functions including program implementation, resource mobilization, communications, monitoring and evaluation, and policy advocacy, with membership drawn from relevant partner organizations and regular reporting to partnership governance. Secretariat support should provide coordination functions including meeting organization and facilitation, document management and distribution, activity tracking and follow-up, partner communication, and external representation, with secretariat housed in member organization or independent entity with clear accountability to partnership governance. Success indicators include formal agreement completion and signature by all partners, governance structure operationalization with regular meetings and active participation, working group functionality and productivity, and secretariat effectiveness in coordination.

- **Stakeholder mapping and engagement strategies** ensure comprehensive participation and address barriers to inclusion. Systematic mapping should identify all relevant stakeholder categories, specific organizations within each category operating in partnership geographic area, key individuals within organizations who should be engaged, existing relationships or networks connecting stakeholders, and gaps where critical stakeholders are absent. Mapping should employ multiple methods including desk research reviewing organizational websites and publications, key informant interviews with knowledgeable individuals, participatory workshops where stakeholders identify others requiring inclusion, and social network analysis examining relationship patterns and influence. Engagement strategies should address different stakeholder types' motivations and constraints including employers requiring evidence that partnership participation serves business interests through talent pipeline development and reputation enhancement, community organizations needing resources supporting their missions and respect for their expertise and community connections, government agencies requiring alignment with policy priorities and political support for partnership participation, women's organizations seeking genuine influence on decisions rather than tokenistic consultation, and educational institutions needing recognition of constraints including limited resources and competing demands. Targeted outreach should employ appropriate messengers, communication channels, and arguments for each stakeholder type, with personal invitations from respected peers often more effective than generic announcements. Barriers to participation should be identified and addressed including time constraints requiring meeting scheduling accommodating diverse schedules and efficient processes, resource requirements providing support for participation costs, mistrust from previous negative partnership experiences requiring transparent communication and demonstrated respect, power imbalances where dominant organizations marginalize others requiring deliberate inclusion mechanisms, and language or accessibility barriers requiring translation, accessible venues, and inclusive communication. Success indicators include comprehensive stakeholder representation across relevant categories, active participation from hard-to-reach or marginalized stakeholders,

sustained engagement over time rather than initial enthusiasm declining, and stakeholder satisfaction with partnership processes and influence.

## Tier 2: Collaborative Initiative Implementation

- **Education-industry partnership programs** operationalize collaboration through joint initiatives addressing women's access and success. Curriculum co-development should engage employers in reviewing and advising on VET curriculum content ensuring labor market relevance, identifying emerging technical competencies requiring integration, contributing industry expertise through guest lectures and practical demonstrations, and providing feedback on graduate preparedness informing curriculum improvement. Joint curriculum development processes should include formal advisory committees with employer representatives, regular consultation on curriculum revisions, pilot testing of revised curricula with employer feedback, and documentation enabling continuous improvement. Work-integrated learning programs should provide structured placements with quality assurance including employer commitments to provide substantive learning experiences with designated mentors, clear learning objectives aligned with curriculum, regular monitoring of placement quality through student feedback and site visits, and evaluation of student outcomes including skill development and employment conversion. Partnerships should establish minimum quality standards for placements including meaningful technical work rather than menial tasks, mentorship provision and mentor training, safe and respectful workplace environments free from harassment or discrimination, and pathways to permanent employment for successful students. Joint recruitment and outreach should coordinate efforts to reach and attract female candidates through collaborative marketing campaigns featuring employer and educational institution branding, joint presence at career fairs and community events, shared costs for advertising and promotional materials, and employer participation in school visits and information sessions. Equipment and resource contributions should enable employers to support educational quality through equipment donations or loans providing access to current technology, facility access for practical training when institutional infrastructure is inadequate, funding for scholarships or student support programs, and instructor professional development through industry placements or training. Alumni tracking and feedback should jointly monitor graduate outcomes through collaborative employment outcome surveys, feedback on graduate preparedness informing curriculum and support improvements, employer reporting on retention and advancement of graduates, and partnership adjustment based on evidence of what works. Success indicators include number and quality of work placements provided, curriculum advisory committee functionality and impact on content, joint recruitment reach and female candidate attraction, employer resource contributions, and employment outcome improvements.
- **Community outreach and awareness campaigns** engage families and communities whose attitudes fundamentally shape career decisions. Awareness campaigns should employ multi-channel approaches including community events bringing together families, students, educators, and employers for information sharing and networking, featuring local women in green energy careers sharing experiences and addressing concerns, providing materials for families explaining career opportunities and pathways, and enabling informal conversations reducing barriers to asking questions. Digital and media campaigns should utilize social media platforms popular with target populations, create video content featuring diverse women in accessible language with cultural relevance, develop websites providing comprehensive information in multiple languages, and engage traditional media including local newspapers and radio stations reaching older family members. School-family engagement should involve parents and guardians in career exploration through information evenings where families learn about green energy education and careers, student-family joint activities visiting training facilities or workplaces, translated materials enabling non-majority language speakers to access information, and cultural mediators addressing specific community concerns about women in



technical fields. Community leader engagement should identify and work with influential individuals including faith-based leaders whose support is critical in religious communities, community elders respected for wisdom and experience, women's group leaders with connections to female networks, and local government representatives with community credibility. Trusted messenger approaches should recognize that information is more credible when delivered by individuals sharing cultural background, language, and experiences with target audiences, requiring partnership with community organizations employing local staff, training community members as ambassadors, and culturally adapting messages and materials. Role model visibility should showcase local women in green energy careers rather than distant figures difficult to relate to, present diverse pathways recognizing multiple routes to success, address work-life integration demonstrating compatibility with family responsibilities, and celebrate achievements creating positive associations and pride. Success indicators include community event participation numbers and diversity, digital campaign reach and engagement metrics, family attitude shifts measured through surveys, community leader endorsement and active support, and observable increases in female student inquiries and applications attributed to awareness activities.

- **Women's organization and civil society engagement** leverages specialized expertise and trusted relationships. Formal partnerships should establish collaboration with women's organizations through partnership agreements specifying mutual commitments and expectations, resource allocation supporting women's organizations' participation and program delivery, consultation in partnership decision-making ensuring women's perspectives shape strategies, and joint program design and implementation combining women's organizations' expertise with partners' resources. Women's organizations should contribute specialized services including outreach to marginalized women facing compounded barriers through existing trusted relationships, support programs addressing gender-specific challenges using culturally competent approaches, advocacy for women's interests within partnerships and externally to policymakers, and expertise on gender equality informing partnership strategies and evaluation. Partnership should recognize women's organizations as equal partners rather than service subcontractors through participation in governance and strategic decision-making, appropriate compensation for services provided rather than expectation of volunteer contribution, acknowledgment and celebration of organizations' contributions, and long-term commitment rather than project-based engagement. Civil society organizations serving specific populations including ethnic minority communities, migrant and refugee populations, disability advocacy organizations, and rural development groups should be engaged to ensure intersectional approaches addressing compounded barriers. Organizations should receive capacity building support enabling effective participation through training on gender equality in green energy technical education and employment, resources for program development and delivery, opportunities for organizational development strengthening sustainability, and networks connecting organizations to resources and expertise. Joint advocacy should leverage women's organizations' experience and credibility in gender equality advocacy to influence policy, amplify partnership achievements and recommendations, hold government and institutions accountable for commitments, and mobilize public support for systemic change. Success indicators include number and diversity of women's organizations and civil society partners engaged, partnership agreement formalization and resource allocation, women's organization participation in governance and decision-making, program delivery by partners serving marginalized populations, and joint advocacy initiatives and policy influence.
- **Professional networks and role model visibility** create belonging, inspiration, and collective voice. Professional association partnerships should formalize collaboration with green energy sector associations through partnership agreements establishing mutual commitments, association support for partnership objectives including communications to members and



advocacy, partnership participation in association events and programs, and joint initiatives increasing women's visibility and support. Women's professional networks should be supported or established through dedicated women's groups within professional associations, cross-organizational networks connecting women across employers and institutions, sector-specific networks for particular technical specializations, and digital platforms enabling flexible participation across geographic distances. Network support should include organizational sponsorship providing meeting space, communications channels, and modest operating budgets, employer support allowing employee participation during work time, partnership facilitation connecting networks to resources and opportunities, and formal recognition elevating network status and legitimacy. Role model programs should systematically increase visibility of women in green energy through ambassador programs where women professionals conduct outreach and mentoring, speaker bureaus providing women for events and media, published profiles and interviews in professional journals and popular media, awards and recognition ceremonies celebrating achievements, and mentorship connecting role models with students and early-career professionals. Role model diversity should ensure representation across technical specializations showing women work in all areas not only traditionally female-associated roles, career stages from students to senior leaders demonstrating progression pathways, demographic characteristics including ethnicity, age, family status, and geographic location, and career pathways including diverse educational backgrounds and non-linear trajectories. Media engagement should proactively place women in technical roles in news coverage, interviews, and public discussions, counter stereotypical representations of gender and technical work, celebrate women's contributions to green energy transition, and create cultural visibility normalizing women's presence. Success indicators include professional network establishment and sustainability, role model program operation and reach, media coverage quality and quantity featuring women, award recipient diversity, and measurable increases in female students' exposure to role models and awareness of career possibilities.

### Tier 3: Accountability, Learning, and Scaling

- **Monitoring and evaluation of partnership outcomes** ensures effectiveness and enables evidence-based improvement. Partnership monitoring should track partnership functioning including partner participation and engagement levels, governance meeting attendance and decision quality, resource contributions from each partner, activity implementation against partnership work plans, and stakeholder satisfaction with partnership processes. Outcome monitoring should assess partnership impact including reach of joint initiatives to target populations, participant outcomes including knowledge, attitudes, and behaviors, intermediate results such as female student enrollment and employee recruitment, longer-term impacts including completion, employment, and retention, and cost-effectiveness comparing investment to outcomes achieved. Monitoring systems should integrate partnership-specific data collection with partners' existing systems minimizing additional burden, establish shared indicators all partners track consistently enabling aggregation, employ dashboards providing real-time access to data for partnership governance, and produce regular reports for internal learning and external accountability. Evaluation should employ rigorous methods including baseline and follow-up measurements enabling change attribution, comparison groups where feasible assessing outcomes against alternatives, mixed methods combining quantitative outcome data with qualitative process understanding, and participatory approaches engaging partners and beneficiaries in evaluation design and interpretation. External evaluation should provide independent assessment of partnership effectiveness periodically, validate self-monitoring data and processes, assess partnership governance and functioning, and provide recommendations for improvement with publication ensuring transparency. Learning processes should translate evaluation findings into practice improvements through regular reflection sessions where partners discuss findings and implications, adaptive management adjusting partnership



strategies based on evidence, documentation and dissemination sharing lessons with broader field, and integration of learning into continuous improvement cycles. Success indicators include monitoring system functionality and data quality, evaluation completion and quality, stakeholder utilization of data for decision-making, documented examples of evidence-based adaptation, and external evaluation validation of partnership claims.

- **Mutual accountability mechanisms** ensure partners fulfill commitments and address failures constructively. Accountability frameworks should establish clear expectations through partnership agreements specifying commitments, performance indicators defining success, reporting requirements establishing transparency, and timelines creating urgency for action. Mutual monitoring should enable partners to hold each other accountable through regular progress reporting at partnership meetings, peer review where partners assess each other's contributions, transparent documentation of activities and outcomes accessible to all partners, and constructive feedback emphasizing improvement rather than blame. Accountability dialogues should occur when performance concerns arise through direct communication between affected partners, facilitated discussions when conflicts prevent direct resolution, root cause analysis examining why commitments were not fulfilled rather than assuming bad faith, and collaborative problem-solving developing corrective actions with support. Consequences for persistent non-performance should be graduated beginning with additional support addressing capacity constraints, escalating through formal warnings and temporary suspension from partnership governance, and culminating in partnership termination for willful non-compliance with exit processes ensuring orderly transition. Recognition and rewards should acknowledge exemplary partner contributions through public recognition at partnership events and in communications, awards celebrating outstanding commitment or innovation, leadership opportunities in partnership governance or working groups, and featured case studies showcasing best practices. Annual accountability reports should document each partner's contributions and outcomes, assess overall partnership performance against objectives, identify areas requiring improvement, celebrate successes and lessons learned, and present findings to stakeholders and public ensuring transparency. Success indicators include partner compliance rates with commitments, reporting timeliness and quality, accountability dialogue frequency and constructiveness, recognition and reward provision, and demonstrated consequences when accountability failures persist.
- **Knowledge sharing and continuous improvement** enables learning from experience and enhances effectiveness. Internal knowledge sharing should capture and disseminate partnership learning through documentation of effective practices and implementation challenges, regular learning exchanges where partners share experiences and strategies, resource libraries making materials and tools accessible to all partners, and cross-partner site visits enabling observation of practices in action. External knowledge sharing should contribute to broader field advancement through conference presentations sharing partnership approaches and outcomes, publications in practitioner and academic outlets, policy briefs communicating findings and recommendations to policymakers, and online resources making tools and lessons accessible to others. Communities of practice should connect practitioners across multiple partnerships through regional or national networks linking similar initiatives, online platforms enabling discussion and resource sharing, collaborative inquiry projects investigating common challenges, and joint advocacy leveraging collective experience. Partnership should engage with research institutions in knowledge production through collaborative research projects investigating partnership effectiveness, student and faculty research opportunities studying partnership dimensions, evaluation and assessment expertise supporting monitoring, and research dissemination through academic and practitioner channels. Continuous improvement processes should systematically enhance partnership performance through annual strategic planning sessions reviewing progress and adjusting strategies, regular process evaluations



examining partnership functioning and identifying improvements, pilot projects testing innovations with evaluation before scaling, and structured learning from both successes and failures. Innovation and experimentation should be encouraged through dedicated resources for pilot initiatives, protected space for testing new approaches, tolerance for well-designed failures as learning opportunities, and rapid scaling of proven innovations. Success indicators include documentation quality and accessibility, external dissemination quantity and reach, community of practice participation and engagement, research output and utilization, and demonstrated improvements in partnership effectiveness over time.

- **Scaling strategies and expansion pathways** enable successful approaches to reach broader populations and geographic areas. Scaling pathways should be intentionally designed including replication where successful partnership models are adopted by new groups of partners in additional geographic areas with adaptation to local contexts, expansion where existing partnerships extend reach to additional institutions, employers, or communities within current geographic scope, and integration where partnership innovations are adopted by mainstream institutions and employers as standard practice rather than special initiatives. Replication should provide comprehensive support to new partnerships through detailed implementation guides documenting partnership development and operation, training programs preparing new partnership coordinators and participants, mentorship from experienced partnerships supporting start-up and early operation, and technical assistance addressing challenges as they arise. Partnership should develop transferable models through abstraction of core principles and practices separating essence from context-specific details, toolkit development providing templates and resources enabling adaptation, quality standards ensuring fidelity to effective practice elements, and flexibility guidance helping new adopters adapt while maintaining effectiveness. Scaling should secure sustainable resources through integration into government funding programs and policy frameworks, institutional budget allocation as core rather than project expense, employer co-investment demonstrating business value, and philanthropic or development funding supporting expansion where public resources are inadequate. Policy influence should create enabling environments for partnership scaling through advocacy for policy frameworks supporting multi-stakeholder collaboration, evidence provision demonstrating partnership effectiveness and cost-effectiveness, technical assistance helping policymakers design supportive policies, and participation in policy implementation ensuring practical feasibility. Scaling should maintain quality through certification or recognition programs identifying partnerships meeting standards, technical support networks providing ongoing assistance to scaled partnerships, monitoring and evaluation systems tracking quality and outcomes, and continuous improvement based on implementation experience. Success indicators include number of partnerships replicated in new locations, reach expansion to additional institutions and employers, integration into mainstream practice, sustainable funding establishment, policy adoption supporting partnerships, and maintained or improved quality at scale.

### 6.7.3 Implementation Pathways

Community and industry engagement interventions require coordinated action across diverse organizational types with fundamentally different cultures, incentives, and operating logics. Individual-level pathways ensure people—students, employees, community members—experience coherent support resulting from partnership coordination rather than fragmented, disconnected services. Institutional-level pathways build organizational capacities for effective partnership participation including relationship management, resource contribution, and accountability. Systemic-level pathways create policy and resource frameworks enabling partnership formation, operation, and sustainability across regions and sectors.



## Individual-Level Implementation

- **Coordinated student and community member experiences** ensure partnerships produce tangible benefits. Students should encounter partnership collaboration through seamless educational and career pathways including educational programs informed by employer input and preparing for actual jobs, work-integrated learning placements in partner organizations with mentorship support, career guidance acknowledging diverse pathways and highlighting partner employer opportunities, mentorship connecting students with professionals from partner organizations, and employment transition support facilitating movement into partner organizations. Families and community members should access coordinated information and support through awareness campaigns featuring multiple partners with consistent messaging, community events bringing together educators, employers, and community organizations, culturally adapted materials developed collaboratively ensuring appropriateness, multiple contact points enabling access through diverse channels, and peer support connecting participants with others from similar backgrounds navigating similar pathways. Women seeking to enter or advance should encounter coordinated support systems through integrated services addressing multiple needs rather than requiring navigation of disconnected resources, warm referrals between partner organizations ensuring continuity rather than starting over with each organization, comprehensive support addressing educational, employment, financial, childcare, and other barriers simultaneously, and personalized navigation assistance helping individuals access appropriate resources. Quality assurance should ensure partnership produces positive experiences through feedback mechanisms enabling participants to report on quality, responsive adjustment when problems are identified, accountability when partners provide substandard services, and celebration of successes building confidence and momentum. Success metrics include participant satisfaction with services received, seamless transitions documented through pathway completion, reduced need to repeat assessments or intake across partner organizations, and positive outcomes including enrollment, employment, and advancement.

## Institutional-Level Implementation

- **VET institutions** must develop partnership capacity and integrate collaboration into operations. Institutions should designate partnership coordinators responsible for partner relationship management, partnership meeting participation and representation, coordination of institutional contributions to partnership initiatives, internal communication ensuring relevant departments are informed and engaged, and monitoring of partnership outcomes and institutional benefits. Institutional policies should facilitate partnership participation through formal authorization for partnership commitment and resource allocation, delegation of authority to partnership representatives for decision-making within defined parameters, recognition of partnership work in faculty and staff performance evaluation, and integration of partnership objectives into institutional strategic plans. Resource allocation should support partnership engagement through budget for coordination personnel time, contributions to partnership operations including secretariat support and shared expenses, delivery of institutional commitments including curriculum development and student support, and participation in joint initiatives including outreach and program implementation. Faculty and staff engagement should mobilize institutional expertise and capacity through involvement in partnership working groups and initiatives, participation in employer advisory committees and curriculum review, delivery of outreach activities and community events, and research supporting partnership evaluation and evidence generation. Institutional culture should value partnership engagement through leadership communication emphasizing importance, celebration of partnership successes and individual contributions, professional development supporting partnership skills including collaboration and cross-sectoral communication, and accountability for following through on partnership commitments. Success indicators include partnership coordinator establishment



with adequate resources, policy formalization enabling partnership participation, budget allocation supporting engagement, faculty and staff participation rates, and institutional reputation as reliable partner.

- **Employers** must commit resources and integrate partnerships into human resource strategy. Organizations should designate diversity and inclusion personnel or human resource staff responsible for partnership engagement, representing employer in partnership governance and working groups, coordinating organizational contributions including work placements and mentorship, facilitating recruitment through partnership channels, and monitoring outcomes of partnership participation for organizational benefit. Employer commitments should include work-integrated learning placements with mentorship support and quality assurance, curriculum advisory input based on labor market needs and graduate preparedness feedback, recruitment participation in joint campaigns and events, mentorship provision for students and early-career employees, financial contributions including scholarship sponsorship and partnership operations support, and employment pathways for qualified graduates including internship-to-employment conversion and preferential consideration. Quality work placements should be structured experiences through documented learning objectives aligned with educational curriculum, designated mentors with training and time allocation, meaningful technical work enabling skill development, safe and respectful workplace environments, regular monitoring and feedback, and evaluation of student learning and organizational benefit. Employer policies should mainstream partnership participation through integration into talent acquisition and workforce development strategies, incentives for managers providing mentorships and supervising placements, recognition in performance evaluation and advancement decisions, and budget allocation as workforce investment rather than corporate social responsibility. Employer advocacy should leverage business voice in policy discussions, participating in partnership advocacy initiatives, communicating business benefits of gender equality to peers, engaging in industry association efforts supporting women's participation, and public communication of organizational commitment creating reputational benefits. Success indicators include employer resource contributions meeting commitments, placement quality ratings by students, employment conversion rates, manager participation in mentoring and supervision, and employer retention and advancement rates for women.
- **Women's organizations** should receive recognition and support as essential partners. Organizations should designate staff or leadership responsible for partnership representation and coordination, program delivery addressing partnership objectives, advocacy advancing gender equality within partnership and externally, monitoring ensuring women's interests are served, and communication maintaining connection between organization and partnership. Resource allocation should enable meaningful participation through compensation for services provided at sustainable rates, capacity building supporting organizational development and program quality, core operating support recognizing organizational infrastructure needs, and multi-year commitments providing stability for planning and hiring. Women's organizations should contribute specialized expertise through outreach to marginalized women using trusted relationships and culturally competent approaches, support services addressing gender-specific barriers, advocacy within partnerships ensuring women's voices shape decisions, expertise on gender equality informing partnership strategies, and connection to women's movements and networks nationally and internationally. Partnership should ensure equitable participation through equal standing in governance and decision-making, timely information sharing enabling informed participation, respect for expertise and community knowledge, adequate time for consultation with constituencies before organizational commitments, and accountability when other partners dismiss or marginalize women's organizations' input. Women's organizations should hold partnerships accountable through monitoring whether partnership benefits women as intended, advocating for adjustments when strategies prove ineffective or harmful, providing



feedback on partnership functioning and power dynamics, and exiting partnerships that exploit organizations' relationships without meaningful commitment or impact. Success indicators include women's organization partnership participation and governance representation, adequate resource provision enabling sustained engagement, program delivery reach and quality, advocacy initiative implementation, and documented impact on partnership strategies and outcomes through women's organization influence.

- **Community organizations** require support and recognition for trusted messenger roles. Organizations should receive partnership support through modest grants enabling outreach and awareness activities, materials adapted to cultural and linguistic contexts served, training on green energy education and career opportunities, partnership with educational institutions and employers for event delivery, and recognition of community expertise and relationships as valuable contributions. Community organizations should deliver culturally appropriate outreach through community events and information sessions in familiar settings, peer ambassadors from community conducting outreach, materials reflecting community values and addressing specific concerns, relationship-building with families over time rather than one-time contacts, and connection of interested individuals to educational and employer partners with warm referrals. Partnership should respect community organizations' knowledge including consultation on message framing and communication strategies, adaptation of standard materials to cultural contexts, recognition of community concerns requiring address, and flexibility to adjust approaches based on community feedback. Community organizations should provide partnership with access to hard-to-reach populations that mainstream institutions struggle to engage, cultural brokering helping institutions understand and navigate cultural dynamics, trust transfer lending credibility to partnership initiatives, and feedback on whether partnership approaches are effective, respectful, and producing intended outcomes in communities. Success indicators include community organization partnership participation, outreach reach and diversity, family engagement quality, referral follow-through rates, and community organization satisfaction with partnership respect and responsiveness.

### Systemic-Level Implementation

- Policy frameworks supporting partnership must establish expectations and incentives for collaboration. Governments should adopt policies prioritizing multi-stakeholder partnerships for gender equality initiatives through funding program requirements mandating partnership approaches, preference in competitive processes for partnership applications, policy statements advocating partnership as best practice, and integration into sector strategies for green energy and VET development. Funding mechanisms should support partnership formation and operation through dedicated grants for partnership development and infrastructure, core operating support for partnership secretariats and coordination, program funding for joint initiative implementation, and capacity building resources for partnership participant training. Policy should require stakeholder engagement in public programs including mandatory consultation with women's organizations and community representatives in policy development, partnership representation in governance and oversight bodies, stakeholder participation in monitoring and evaluation, and accountability for incorporating stakeholder input or explaining why recommendations were not adopted. Accreditation and quality assurance should integrate partnership into institutional evaluation through standards requiring institutional partnerships with employers and community organizations, assessment of partnership quality and outcomes in institutional reviews, recognition of exemplary partnership practice in quality awards, and consequences when institutions fail to engage stakeholders meaningfully. Government should coordinate across ministries supporting partnerships through inter-ministerial bodies promoting partnership approaches, aligned funding from education, labor, economic development, and gender equality budgets, policy coherence eliminating contradictory requirements, and joint monitoring of cross-sectoral partnership outcomes. Success indicators include policy adoption



supporting partnerships, funding mechanism establishment and resource allocation, stakeholder engagement mandate implementation, accreditation standard integration, and inter-ministerial coordination functionality.

- Infrastructure supporting partnership networks must enable connection and learning across initiatives. National or regional partnership platforms should connect multiple local partnerships through regular convenings for learning exchange and networking, online platforms sharing resources and enabling communication, technical assistance providing expertise when partnerships encounter challenges, research and evaluation generating evidence on partnership effectiveness, and advocacy leveraging collective experience to influence policy. Platform support organizations should provide coordination and secretariat functions, partnership development assistance supporting new partnership formation, training programs building partnership coordination and collaboration skills, resource development including partnership tools and guides, and monitoring and learning systems enabling tracking and knowledge generation across multiple partnerships. Funding should enable platform operation through government allocation for partnership support infrastructure, philanthropic support for innovation and capacity building, international development assistance where relevant, and partnership membership contributions creating shared ownership. Platform should facilitate peer learning through site visits enabling observation of effective practices, mentoring relationships connecting experienced and emerging partnerships, collaborative problem-solving addressing common challenges, and communities of practice focusing on specific dimensions such as employer engagement or community outreach. Platform should coordinate advocacy leveraging multiple partnerships' collective voice, aggregating evidence across partnerships demonstrating impact, representing partnership perspectives in policy discussions, and mobilizing partnerships for advocacy campaigns. Success indicators include platform establishment and functionality, partnership network participation and engagement, technical assistance utilization and effectiveness, peer learning activity frequency and quality, and collective advocacy initiatives and policy influence.
- Accountability for partnership participation must create incentives and consequences. Government should report on partnership support including funding allocated to partnership initiatives, partnerships supported and their reach, outcomes achieved through partnership approaches compared to non-partnership alternatives, and progress toward government partnership policy objectives. Institutions and employers should report partnership participation through inclusion in annual reports and public disclosure, description of partnership commitments and contributions, outcomes achieved through partnership engagement including students served and employees hired, and self-assessment of partnership value and organizational benefit. Accreditation and quality reviews should assess partnership quality through evaluation of partnership formality and governance quality, stakeholder satisfaction with partnership functioning, documented outcomes from partnership initiatives, and sustained commitment over time rather than episodic engagement. Public recognition should celebrate exemplary partnerships through awards highlighting outstanding collaboration and impact, case studies disseminating effective practices, media coverage raising visibility and creating reputational benefits, and conferences providing platforms for partnership presentation. Consequences for failure should address persistent non-participation or poor partnership practice through corrective action requirements for institutions or employers with inadequate partnership engagement, funding penalties where participation is mandated but not fulfilled, negative accreditation findings affecting institutional approval, and public accountability through disclosure of non-participation or poor partnership quality. Success indicators include reporting compliance and transparency, accreditation integration and consistent assessment, recognition program operation and prestige, documented examples of consequences for poor partnership practice, and sector-wide improvement in partnership quality and outcomes.



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#### 6.7.4 Success Indicators and Monitoring

Effective monitoring requires clear, measurable indicators aligned with partnership development, implementation, and impact objectives. Indicators should assess partnership functioning including participant engagement and governance quality, initiative implementation including reach and quality, outcomes for beneficiaries including knowledge, attitudes, and behaviors, and systemic impact including policy influence and cultural change (table 18). Data collection must balance partnership-specific monitoring with integration into partners' existing systems, ensuring sustainability and reducing burden. Monitoring should occur at three temporal scales: immediate output indicators measured within 12 months documenting partnership establishment and initial activities, intermediate outcome indicators measured annually assessing implementation quality and participant outcomes, and long-term impact indicators measured over 3-5 years demonstrating systemic transformation.



Intervention Area	Immediate Outputs (0-12 months)	Intermediate Outcomes (1-2 years)	Long-term Impact (3-5 years)
<b>Multi-stakeholder partnership development</b>	<ul style="list-style-type: none"> <li>Stakeholder mapping completed</li> <li>Diverse partners recruited and engaged</li> <li>Initial convening events held</li> <li>Partnership champions identified</li> </ul>	<ul style="list-style-type: none"> <li>Partnership functioning quality</li> <li>Stakeholder satisfaction with participation</li> <li>Trust development among partners</li> <li>Sustained engagement over time</li> </ul>	<ul style="list-style-type: none"> <li>Partnership sustainability and longevity</li> <li>Deep collaborative relationships</li> <li>Collective problem-solving effectiveness</li> <li>Partnership resilience through leadership changes</li> </ul>
<b>Formal agreements and governance structures</b>	<ul style="list-style-type: none"> <li>Partnership agreements signed</li> <li>Governance structures established</li> <li>Secretariat support operational</li> <li>Working groups formed</li> </ul>	<ul style="list-style-type: none"> <li>Governance meeting attendance and decision quality</li> <li>Secretariat effectiveness in coordination</li> <li>Working group productivity</li> <li>Shared decision-making functioning</li> </ul>	<ul style="list-style-type: none"> <li>Governance maturity and effectiveness</li> <li>Distributed leadership and ownership</li> <li>Efficient decision-making processes</li> <li>Conflict resolution capability</li> </ul>
<b>Education-industry partnership programs</b>	<ul style="list-style-type: none"> <li>Curriculum advisory committees established</li> <li>Work placement agreements signed</li> <li>Joint recruitment campaigns launched</li> <li>Employer resource commitments documented</li> </ul>	<ul style="list-style-type: none"> <li>Work placement quality ratings</li> <li>Curriculum relevance improvements</li> <li>Female candidate recruitment increases</li> <li>Employer resource delivery</li> </ul>	<ul style="list-style-type: none"> <li>Graduate employment rates and quality</li> <li>Sustained placement provision</li> <li>Curriculum ongoing employer engagement</li> <li>Employment pathway effectiveness</li> </ul>
<b>Community outreach and awareness campaigns</b>	<ul style="list-style-type: none"> <li>Community events conducted</li> <li>Digital campaigns launched</li> <li>Materials developed and distributed</li> <li>Community leader engagement</li> </ul>	<ul style="list-style-type: none"> <li>Reach to target families and communities</li> <li>Awareness and knowledge increases</li> <li>Attitude shifts toward women in technical careers</li> <li>Role model exposure</li> </ul>	<ul style="list-style-type: none"> <li>Cultural transformation in communities</li> <li>Family support for daughters' technical careers</li> <li>Community pride in women's achievements</li> <li>Sustained awareness and positive attitudes</li> </ul>



<p><b>Women's organization and civil society engagement</b></p>	<ul style="list-style-type: none"> <li>▪ Partnership agreements with women's organizations</li> <li>▪ Resource allocation to support participation</li> <li>▪ Women's organization governance representation</li> <li>▪ Joint program development</li> </ul>	<ul style="list-style-type: none"> <li>▪ Women's organization program delivery quality and reach</li> <li>▪ Marginalized women engagement</li> <li>▪ Women's organization influence on partnership strategies</li> <li>▪ Advocacy initiative implementation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Women's organization sustained partnership participation</li> <li>▪ Partnership responsiveness to women's needs and priorities</li> <li>▪ Increased capacity of women's organizations</li> <li>▪ Demonstrable gender equality outcomes</li> </ul>
<p><b>Professional networks and role model visibility</b></p>	<ul style="list-style-type: none"> <li>▪ Professional networks established or expanded</li> <li>▪ Role model programs launched</li> <li>▪ Ambassador recruitment and training</li> <li>▪ Media engagement initiated</li> </ul>	<ul style="list-style-type: none"> <li>▪ Network participation and engagement</li> <li>▪ Role model exposure among students</li> <li>▪ Media coverage quality and quantity</li> <li>▪ Student awareness of career possibilities</li> </ul>	<ul style="list-style-type: none"> <li>▪ Network sustainability and growth</li> <li>▪ Cultural visibility of women in green energy</li> <li>▪ Normalized perception of women in technical roles</li> <li>▪ Career aspiration diversification</li> </ul>
<p><b>Monitoring and evaluation systems</b></p>	<ul style="list-style-type: none"> <li>▪ Partnership monitoring framework established</li> <li>▪ Data collection systems operational</li> <li>▪ Baseline data collected</li> <li>▪ Evaluation plans developed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Data quality and completeness</li> <li>▪ Regular monitoring report production</li> <li>▪ Data utilization in partnership decision-making</li> <li>▪ Evaluation findings and learning</li> </ul>	<ul style="list-style-type: none"> <li>▪ Comprehensive evidence base on partnership effectiveness</li> <li>▪ Continuous improvement based on data</li> <li>▪ Demonstrated partnership impact</li> <li>▪ Knowledge contribution to field</li> </ul>
<p><b>Mutual accountability mechanisms</b></p>	<ul style="list-style-type: none"> <li>▪ Accountability framework established</li> <li>▪ Reporting requirements clarified</li> <li>▪ Review processes operational</li> <li>▪ Recognition program launched</li> </ul>	<ul style="list-style-type: none"> <li>▪ Partner compliance with commitments</li> <li>▪ Accountability dialogue quality when concerns arise</li> <li>▪ Recognition of exemplary contributions</li> <li>▪ Responsive adjustment to performance issues</li> </ul>	<ul style="list-style-type: none"> <li>▪ Sustained high performance across partners</li> <li>▪ Trust and mutual accountability culture</li> <li>▪ Effective problem-solving without blame</li> <li>▪ Partnership integrity and credibility</li> </ul>
<p><b>Knowledge sharing and continuous improvement</b></p>	<ul style="list-style-type: none"> <li>▪ Documentation systems established</li> <li>▪ Learning exchange events scheduled</li> <li>▪ External dissemination initiated</li> <li>▪ Innovation pilots launched</li> </ul>	<ul style="list-style-type: none"> <li>▪ Knowledge product development and dissemination</li> <li>▪ Peer learning engagement</li> <li>▪ External visibility and reputation</li> <li>▪ Practice improvements based on learning</li> </ul>	<ul style="list-style-type: none"> <li>▪ Partnership as learning organization</li> <li>▪ Field-wide influence and knowledge leadership</li> <li>▪ Innovation adoption and scaling</li> <li>▪ Contribution to sector knowledge base</li> </ul>



<b>Scaling strategies and expansion</b>	<ul style="list-style-type: none"><li>▪ Replication plans developed</li><li>▪ Scaling resources secured</li><li>▪ New partnership sites identified</li><li>▪ Implementation support prepared</li></ul>	<ul style="list-style-type: none"><li>▪ Number of partnerships replicated</li><li>▪ Reach expansion to additional institutions/employers</li><li>▪ Policy adoption supporting partnerships</li><li>▪ Quality maintenance during scaling</li></ul>	<ul style="list-style-type: none"><li>▪ Widespread partnership adoption across sector</li><li>▪ Integration into mainstream practice</li><li>▪ Sustainable funding and policy support</li><li>▪ Sector transformation through partnership approach</li></ul>
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Table 18. Core indicators for Axis E

Partnerships should establish baseline measurements before major initiatives commence, enabling change attribution. Monitoring systems should integrate partnership-specific data collection with partners' existing information systems through data sharing agreements, compatible indicator definitions, automated dashboards aggregating data from multiple sources, and partnership reporting that synthesizes rather than duplicates partner reports. Annual partnership reports should document activities implemented, resources contributed by each partner, reach to target populations, outcomes achieved, challenges encountered and responses, lessons learned and adaptations made, and progress toward partnership objectives with trajectory analysis.

Partnership coordinators or secretariat should be responsible for monitoring coordination including data collection from partners, quality assurance ensuring accuracy and completeness, analysis identifying patterns and insights, report production for partnership governance and external stakeholders, and facilitation of data-informed reflection and planning. External evaluation should periodically assess partnership effectiveness through independent evaluators examining partnership functioning and outcomes, validation of self-monitoring data and processes, comparative analysis where possible against non-partnership approaches, and recommendations for improvement with presentation to partnership and public disclosure.

Qualitative monitoring through annual focus groups with partnership participants examining experiences and suggestions, interviews with beneficiaries assessing service quality and outcomes, partner reflection sessions discussing collaboration quality and improvements needed, and stakeholder consultations gathering external perspectives provides contextual understanding complementing quantitative indicators. Monitoring should examine differential outcomes by demographic characteristics including gender, ethnicity, socioeconomic status, and geographic location, ensuring partnerships benefit all populations equitably rather than primarily serving already-advantaged groups. Where partnerships fail to reach or effectively serve specific populations, immediate investigation and strategy adjustment is required.

Participatory monitoring should engage diverse stakeholders in data interpretation and improvement planning including beneficiary representatives providing lived experience perspectives, partner frontline staff sharing implementation insights, governance members assessing strategic implications, and external stakeholders offering comparative perspectives. Regular partnership reflection sessions should examine monitoring data, celebrate successes and learning from failures, identify necessary adjustments to strategies or operations, and plan improvements with assigned responsibilities and timelines. Documentation of monitoring processes, findings, adaptations made, and outcomes should create partnership memory enabling continuous learning and informing other partnerships' development.

### 6.7.5 Implementation Guidelines

Successful implementation of Axis E interventions requires trust-building across diverse organizations, sustained commitment despite competing demands, equitable partnership dynamics avoiding dominance by powerful actors, and patience as collaborative relationships develop over time. The following guidelines support actors in building and sustaining effective multi-stakeholder partnerships.

Actor	Primary Responsibilities	Required Capacities
<p><b>Partnership Coordinators</b></p>	<ul style="list-style-type: none"> <li>▪ Facilitate partnership development and governance;</li> <li>▪ coordinate partner engagement and communication;</li> <li>▪ organize meetings and events;</li> <li>▪ manage documentation; support working groups;</li> </ul>	<p>Relationship management, facilitation skills, organizational capacity, diplomatic communication, persistence and patience, understanding of diverse organizational cultures</p>

	<ul style="list-style-type: none"> <li>▪ monitor partnership functioning</li> </ul>	
<b>VET Institutions</b>	<ul style="list-style-type: none"> <li>▪ Participate in partnership governance; contribute curriculum expertise and student access;</li> <li>▪ implement joint initiatives;</li> <li>▪ allocate resources; share monitoring data;</li> <li>▪ adapt practices based on partnership learning</li> </ul>	Institutional commitment, boundary spanning capacity, resource allocation authority, partnership valuation in culture, collaborative orientation
<b>Employers</b>	<ul style="list-style-type: none"> <li>▪ Provide work placements and mentorship; contribute labor market expertise;</li> <li>▪ participate in recruitment;</li> <li>▪ allocate financial and in-kind resources;</li> <li>▪ offer employment pathways;</li> <li>▪ advocate with business community</li> </ul>	Business case understanding, human resource capacity, workplace culture supporting diversity, resource commitment, patience for partnership development
<b>Government Agencies</b>	<ul style="list-style-type: none"> <li>▪ Provide policy support and funding; convene stakeholders;</li> <li>▪ integrate partnerships into public programs;</li> <li>▪ monitor sector-wide outcomes;</li> <li>▪ create enabling policy environment</li> </ul>	Convening authority, funding allocation power, policy development capacity, patience for collaborative processes, willingness to share power with non-governmental actors
<b>Women's Organizations</b>	<ul style="list-style-type: none"> <li>▪ Provide gender equality expertise;</li> <li>▪ connect with marginalized women;</li> <li>▪ deliver support services;</li> <li>▪ advocate within partnership and externally;</li> <li>▪ monitor partnership responsiveness to women's needs</li> </ul>	Gender equality expertise, community connections and trust, advocacy capacity, organizational sustainability, willingness to engage collaboratively while maintaining independent voice
<b>Community Organizations</b>	<ul style="list-style-type: none"> <li>▪ Provide culturally appropriate outreach;</li> <li>▪ engage families and communities;</li> <li>▪ serve as trusted messengers;</li> <li>▪ adapt materials and messages;</li> <li>▪ connect individuals to partners</li> </ul>	Cultural competence and community credibility, communication skills, relationship networks, flexibility and adaptability, understanding of green energy opportunities
<b>Professional Associations</b>	<ul style="list-style-type: none"> <li>▪ Connect partnerships to sector practitioners;</li> <li>▪ provide technical expertise;</li> <li>▪ facilitate peer learning;</li> <li>▪ engage in sector advocacy;</li> <li>▪ contribute to knowledge development</li> </ul>	Sector knowledge, member engagement capacity, convening ability, communication channels, policy influence capability
<b>Evaluation and Research Organizations</b>	<ul style="list-style-type: none"> <li>▪ Design and conduct partnership evaluation;</li> <li>▪ build monitoring systems;</li> <li>▪ analyze data and generate insights;</li> <li>▪ document effective practices;</li> <li>▪ contribute to evidence base</li> </ul>	Research and evaluation expertise, independence and objectivity, partnership understanding, practical orientation to research utilization, communication ability

Table 19. Implementation guidelines for Axis E

Implementation requires recognizing that multi-stakeholder partnerships represent fundamental shift from isolated organizational action to collective responsibility for systemic problems. Success depends on genuine commitment to collaboration transcending instrumental participation for resource access, equitable partnership dynamics where all partners' contributions are valued and all voices heard, sustained engagement through challenges and setbacks, adequate resource investment commensurate with partnership ambitions, and patience as trust develops, processes mature, and collaborative capacity grows. Axis E interventions recognize that isolated actions by individual organizations, however well-intentioned and resourced, prove insufficient for transforming deeply embedded gender inequality in green energy education and employment.

## 6.8 Axis F: Sustainability & Evaluation

### 6.8.1 Strategic Focus and Objectives

Axis F addresses the critical challenge that gender equality initiatives, however well-designed and initially implemented, frequently fail to produce lasting change due to absent sustainability mechanisms, inadequate evaluation systems, and lack of long-term strategic integration into organizational operations. This axis recognizes that interventions dependent on temporary funding, individual champion leadership, or project-based implementation consistently disappear when grants end, champions depart, or organizational priorities shift, with regression to previous inequitable patterns occurring rapidly absent deliberate sustainability planning. Without robust evaluation systems documenting effectiveness, demonstrating return on investment, and identifying necessary improvements, organizations lack evidence justifying continued resource allocation, policymakers cannot distinguish effective from ineffective approaches, and stakeholders cannot hold institutions accountable for commitments. Sustainability and evaluation represent not supplementary add-ons to gender equality work but foundational requirements for systemic transformation, ensuring that investments produce enduring rather than temporary improvements and that learning from implementation experience continuously enhances effectiveness. The **strategic objective** is to embed gender equality as permanent, self-sustaining organizational practice through mainstreaming into core operations and budgets, institutionalizing through policies and structures resistant to individual leadership changes, demonstrating value through rigorous evaluation and return on investment documentation, continuous improvement through systematic learning and adaptation, and long-term accountability through monitoring systems and stakeholder oversight ensuring commitments are sustained over decades not merely initial enthusiasm periods.

The **scope** encompasses sustainability planning and implementation, comprehensive evaluation systems, financial sustainability and resource mobilization, institutionalization and mainstreaming strategies, knowledge management and organizational learning, accountability and compliance monitoring, and long-term impact assessment. Sustainability planning must occur from initiative design rather than as afterthought when projects near completion, requiring explicit analysis of what resources, structures, policies, and capacities are necessary for continuation, identification of sustainability risks and mitigation strategies, development of transition plans from project to operational funding, and stakeholder engagement ensuring continued ownership and commitment. Evaluation systems must provide rigorous evidence on initiative effectiveness through appropriate methodologies including baseline and follow-up measurements, comparison groups enabling attribution, mixed methods combining quantitative outcomes with qualitative process understanding, participatory approaches engaging stakeholders in evaluation design and interpretation, and independent validation ensuring credibility. Financial sustainability requires diversified funding sources reducing dependence on single grants or donors, integration into core organizational budgets as standard operational expenses, revenue generation or cost savings justifying continued investment, policy frameworks establishing public funding commitments, and employer co-investment demonstrating business value. Institutionalization demands integration of gender equality into organizational mission, strategic plans, and operational

procedures, formal policies establishing requirements and standards, designated personnel and units with clear mandates and adequate resources, performance evaluation and accountability systems ensuring implementation, and organizational culture transformation where gender equality becomes normalized expectation. Knowledge management must capture learning from implementation through systematic documentation, enable knowledge sharing across individuals and over time through accessible repositories, support organizational memory preventing loss of expertise when personnel change, and facilitate continuous improvement through regular reflection and adaptation based on evidence. Accountability systems must track progress toward objectives through standardized indicators, enable stakeholder oversight through transparent reporting, create consequences for failure and recognition for success, and sustain pressure for continued action through external monitoring and advocacy.

**Success** in this axis manifests through enduring gender equality improvements sustained over multiple years and leadership transitions, demonstrated effectiveness through rigorous evaluation evidence, financial viability with stable, adequate funding, deep institutionalization where gender equality is embedded throughout organizational operations, widespread adoption as effective approaches scale to additional institutions and contexts, and accountability infrastructure ensuring continued attention and progress. Sustainability-level success requires gender equality initiatives continuing five, ten, and fifteen years after initial implementation without requiring constant external pressure or extraordinary effort, outcomes maintained or improved over time rather than declining when attention shifts, organizational capacity and infrastructure persisting through leadership changes and budget constraints, and stakeholder commitment sustained across generations of participants. Evaluation-level success demands comprehensive evidence base documenting what works for whom under what conditions through rigorous studies, demonstrated return on investment showing gender equality initiatives produce value exceeding costs through talent development and organizational performance, continuous improvement with evaluation findings systematically informing refinements, and credibility with skeptics through methodologically sound evidence addressing concerns about effectiveness and efficiency. Financial-level success includes diversified funding from government budgets, organizational core allocations, employer co-investment, and philanthropic support, adequate resource levels enabling quality implementation not merely symbolic gestures, efficiency improvements reducing costs over time as capacity develops and processes mature, and public funding integration where gender equality in green energy vocational education and employment receives sustained government allocation. Institutionalization-level success requires policy formalization establishing clear requirements and standards, organizational structure with designated units and personnel, cultural transformation where gender equality becomes organizational identity not external compliance requirement, leadership at all levels actively championing rather than merely tolerating gender equality work, and resilience to threats including budget cuts, political hostility, or organizational crises. Impact-level success ultimately appears through gender parity achieved and maintained across enrollment, completion, employment, retention, and advancement in green energy technical fields, elimination of gender pay gaps and occupational segregation, organizational performance improvements from diverse talent utilization, sectoral transformation as green energy industries become recognized models of gender equality, and cultural shifts in societal perceptions of women's capabilities and appropriate roles in technical fields.

### 6.8.2 Key Intervention Areas

Sustainability and evaluation interventions are organized into **three strategic tiers** reflecting the foundation, operation, and long-term embedding of gender equality work. Tier 1 interventions establish sustainability and evaluation infrastructure including planning processes, evaluation systems, and baseline establishment, creating foundations for enduring change and evidence generation. Without deliberate sustainability planning and evaluation design from the outset, initiatives risk becoming temporary projects disappearing when initial resources end. Tier 2 interventions implement sustainability strategies and conduct ongoing evaluation through resource mobilization,

institutionalization processes, continuous monitoring and learning, and adaptive management adjusting approaches based on evidence. Tier 3 interventions ensure long-term sustainability and demonstrate lasting impact through deep mainstreaming, policy integration, scaled adoption, long-term outcome evaluation, and accountability mechanisms sustaining pressure for continued progress. This tiered approach recognizes that sustainability and evaluation must be built into initiatives from design, actively managed during implementation, and strengthened over time as capacity develops and evidence accumulates.

Tier	Strategic Focus	Intervention Areas	Primary Target	Implementation Timeline
<b>Tier 1: Sustainability and Evaluation Foundations</b>	Establishing infrastructure for enduring change and evidence generation	<ul style="list-style-type: none"> <li>Sustainability planning and risk assessment</li> <li>Evaluation system design and establishment</li> <li>Initial resource mobilization and diversification</li> </ul>	<ul style="list-style-type: none"> <li>Sustainability strategy development</li> <li>Evaluation framework and methodology</li> <li>Funding diversity and initial commitments</li> </ul>	Short-term at initiative design; requires forward planning and stakeholder engagement
<b>Tier 2: Implementation and Continuous Improvement</b>	Operating sustainability strategies and generating learning	<ul style="list-style-type: none"> <li>Institutionalization and policy integration</li> <li>Financial management and resource development</li> <li>Monitoring, learning, and adaptive management</li> <li>Stakeholder engagement and accountability mechanisms</li> </ul>	<ul style="list-style-type: none"> <li>Organizational embedding</li> <li>Funding sustainability and efficiency</li> <li>Evidence generation and utilization</li> <li>Accountability and transparency</li> </ul>	Medium to long-term sustained operation; requires organizational commitment and capacity
<b>Tier 3: Long-term Embedding and Impact</b>	Achieving deep mainstreaming and demonstrating lasting transformation	<ul style="list-style-type: none"> <li>Comprehensive mainstreaming across organizations</li> <li>Policy frameworks and public funding integration</li> <li>Scaling and replication to achieve sector transformation</li> <li>Long-term impact evaluation and accountability</li> </ul>	<ul style="list-style-type: none"> <li>Organizational culture transformation</li> <li>Systemic funding and policy support</li> <li>Widespread adoption and normalization</li> <li>Demonstrated sustained impact</li> </ul>	Long-term over 5-15 years; requires sustained commitment and systemic change

Table 20. Foundation tiers of Axis F

### Tier 1: Sustainability and Evaluation Foundations

- Sustainability planning and risk assessment** must occur from initiative design rather than as late addition when funding nears completion. Sustainability planning should begin with explicit articulation of what continuation means including core activities that must persist, outcomes that must be maintained, organizational capacities that must remain, and stakeholder engagement that must continue, distinguishing essential from desirable elements enabling prioritization when resources are constrained. Sustainability analysis should assess what is



required for continuation including personnel with specific skills and time allocation, financial resources for operations and programs, organizational infrastructure including space and systems, policy frameworks establishing legitimacy and requirements, stakeholder commitment providing support and oversight, and political support protecting against hostile attempts to eliminate programs. Risk assessment should identify threats to sustainability including funding dependence on temporary sources vulnerable to termination, reliance on individual champions whose departure eliminates driving force, political opposition that could mobilize to eliminate programs, organizational resistance from those threatened by change, competing priorities that could displace gender equality from attention and resources, and complacency when initial success reduces perceived urgency. Mitigation strategies should address identified risks through funding diversification reducing dependence on single sources, distributed leadership developing multiple champions, policy formalization creating protection against arbitrary elimination, stakeholder coalition-building mobilizing defenders when threats emerge, integration into strategic priorities elevating status, and sustained communications maintaining visibility and perceived importance. Transition planning should specify how project-based initiatives will convert to operational programs including timelines for transition with milestones, organizational structure changes integrating functions into permanent units, budget transitions from project grants to operational allocations, personnel transitions from temporary to permanent positions, policy development establishing formal requirements, and stakeholder handover ensuring continued engagement. Sustainability planning should engage diverse stakeholders in envisioning what continuation looks like, identifying obstacles and strategies, committing to sustainability roles, and creating shared responsibility for ensuring persistence. Success indicators include sustainability plan development and stakeholder endorsement, risk assessment comprehensiveness, mitigation strategy implementation, transition plan clarity and feasibility, and early implementation of sustainability actions before project completion.

- **Evaluation system design and baseline establishment** creates infrastructure for rigorous evidence generation. Evaluation planning should clarify evaluation purposes including accountability documenting whether commitments were fulfilled, improvement identifying what works and what requires refinement, learning understanding how and why interventions produce outcomes, and advocacy generating evidence supporting continued investment and policy adoption. Evaluation questions should be explicitly articulated addressing effectiveness whether interventions achieve intended outcomes, efficiency whether resource utilization is optimal, equity whether benefits reach all populations proportionally, sustainability whether improvements will persist, and scalability whether approaches can expand to additional contexts. Evaluation frameworks should specify theory of change articulating how interventions are expected to produce outcomes through causal pathways, indicators measuring inputs, activities, outputs, outcomes, and impacts, data sources identifying where information will be obtained, data collection methods specifying how information will be gathered, analysis approaches determining how data will be examined, and reporting formats communicating findings to different audiences. Baseline establishment must occur before or at intervention start through data collection on gender-disaggregated composition, participation, outcomes, attitudes, policies, and practices before interventions, enabling measurement of change attributable to initiatives rather than pre-existing trends. Baseline should be comprehensive covering all domains where change is expected, use valid and reliable measurement instruments, include qualitative context understanding alongside quantitative indicators, and document starting conditions sufficient for later comparison. Evaluation should employ appropriate methodologies including randomized controlled trials where feasible and ethical for definitive causal attribution, quasi-experimental designs with comparison groups when randomization is not possible, pre-post designs with robust baseline and follow-up measurements, mixed methods combining quantitative outcomes with qualitative process understanding, and participatory approaches engaging stakeholders in evaluation design, data collection, interpretation, and



utilization. Independent evaluation should involve external evaluators without vested interests in outcomes demonstrating success, bringing methodological expertise and credibility, providing objective assessment, and enabling honest reporting including identifying failures and necessary improvements. Success indicators include evaluation plan development with clear questions and methodology, baseline data collection completion and quality, evaluation capacity including expertise and resources, stakeholder engagement in evaluation design, and evaluation timeline alignment with initiative milestones.

- **Initial resource mobilization and diversification** establishes financial foundations reducing dependence on single temporary funding sources. Resource assessment should identify full costs of gender equality initiatives including personnel for coordination, implementation, and monitoring, program delivery costs for curriculum development, training, mentorship, and events, infrastructure costs for equipment, facilities, and systems, external expertise for technical assistance and evaluation, and indirect costs for administration and overhead. Funding diversification should pursue multiple sources simultaneously including government grants from education, labor, economic development, and gender equality programs, institutional budgets allocating core operating funds, employer co-investment through cash contributions and in-kind support, philanthropic funding from foundations supporting gender equality and green transition, international development assistance where relevant, and earned revenue where services generate income. Initial commitments should secure multi-year funding providing stability for planning and implementation, combining restricted funding for specific activities with unrestricted support for organizational infrastructure, balancing large grants reducing fundraising burden with smaller diverse sources reducing risk, and establishing credibility enabling continued fundraising through demonstrated impact. Business case development should articulate value proposition for different funders including return on investment calculations for employers showing talent development benefits, social return on investment for philanthropists demonstrating societal value, policy objectives achievement for government showing contribution to workforce and equality goals, and organizational benefits for institutions showing reputation enhancement and mission advancement. Resource development capacity should be built through personnel with fundraising expertise, proposal development skills and systems, relationship management with funders, financial management and reporting capabilities, and demonstrated impact enabling evidence-based funding appeals. Success indicators include funding source diversity across types, multi-year commitment amounts and duration, cost coverage adequacy compared to needs, fundraising capacity establishment, and sustainability beyond initial grants evidenced through renewals and new funding secured.

## Tier 2: Implementation and Continuous Improvement

- Institutionalization and policy integration embeds gender equality permanently into organizational structures and operations. Policy development and formalization should establish comprehensive gender equality policies adopted through official governance processes including board or council approval, articulating organizational commitment and vision, specifying concrete requirements across all functions, designating responsible parties and accountability mechanisms, allocating resources for implementation, and creating legitimacy protecting against arbitrary change. Policies should integrate across organizational domains including strategic plans establishing gender equality as core priority, operational procedures embedding requirements into standard processes, human resource policies governing recruitment, advancement, and workplace environment, academic policies for VET institutions addressing curriculum, pedagogy, and student support, quality assurance frameworks incorporating gender equality into evaluation, and budget policies ensuring adequate resource allocation. Designated organizational structures should provide permanent infrastructure through gender equality units or offices with clear mandates, adequate staffing with expertise and authority, budget allocations for operations and programs, senior-level reporting lines

ensuring access to leadership, and cross-functional coordination enabling work throughout organization. Gender equality should integrate into existing roles and responsibilities through job descriptions including gender equality competencies and responsibilities, performance evaluation incorporating gender equality in assessment criteria, leadership accountability with gender equality outcomes affecting senior management evaluation, and training ensuring all personnel understand policies and responsibilities. Champions should be developed throughout organizational levels including senior leadership publicly committing and allocating resources, middle management implementing policies in departments and programs, frontline staff delivering gender-responsive services and practices, and student or employee representatives advocating for continued attention and accountability. Cultural transformation should shift underlying assumptions and values through communications consistently emphasizing gender equality importance, celebrations highlighting achievements and role models, storytelling making gender equality personally meaningful, leadership modeling with visible commitment and changed behaviors, and socialization of new members into organizational gender equality values. Success indicators include policy adoption with governance approval, policy comprehensiveness assessed through content analysis, organizational structure establishment with adequate resources, personnel with gender equality responsibilities throughout organization, leadership commitment evidenced through actions and resources, and cultural indicators including attitude surveys and behavioral observations.

- Financial management and resource development ensures adequate, stable funding through diversified sources and efficient operations. Budget integration should mainstream gender equality into core organizational budgets through line items for coordination personnel, program delivery resources, monitoring and evaluation, professional development, and infrastructure, with allocations as percentages of total budget ensuring proportionality, visibility making gender equality resource allocation transparent, and sustainability reducing dependence on external temporary grants. Funding diversification should pursue and balance multiple sources through continued government grant applications to relevant programs, institutional budget advocacy demonstrating value and requesting continued allocation, employer relationship cultivation leading to co-investment in programs, philanthropic funding relationships with foundations supporting mission alignment, fee-for-service where training or consulting generates revenue, and international development assistance where available and appropriate. Financial efficiency should optimize resource utilization through economies of scale sharing costs across programs, technology utilization reducing labor-intensive processes, volunteer engagement supplementing paid staff where appropriate, shared services collaborating with other organizations to reduce costs, and continuous improvement eliminating inefficiencies and enhancing productivity. Return on investment analysis should document value created through talent development calculations showing costs of losing trained women compared to retention investment, organizational performance improvements from diversity enhancing innovation and problem-solving, reputation benefits attracting students and employees, risk mitigation reducing discrimination complaints and related costs, and policy compliance avoiding penalties for non-compliance. Financial reporting should provide transparency through regular financial statements showing income and expenditures, cost allocation demonstrating how resources are utilized across activities, variance analysis explaining differences between budgets and actuals, sustainability indicators tracking funding source diversity and stability, and efficiency metrics showing cost per participant or outcome achieved. Resource development strategy should maintain diverse funding pipeline through prospect identification and cultivation, tailored proposals addressing different funder interests, relationship management with current and potential funders, impact communication demonstrating outcomes achieved, and grant compliance ensuring quality reporting building funder confidence. Success indicators include budget allocation adequacy compared to needs, funding source diversity across categories, financial stability with reserves and predictable income, efficiency improvements over time,



return on investment documentation, and successful fundraising maintaining or growing resources.

- Monitoring, learning, and adaptive management enables continuous improvement through systematic data collection, reflection, and adjustment. Monitoring systems should track progress continuously through data collection integrated into operational systems minimizing additional burden, standardized indicators enabling comparison over time and across contexts, automated dashboards providing real-time access for decision-makers, regular reporting cycles producing periodic updates, and qualitative monitoring complementing quantitative data with contextual understanding. Data should be disaggregated by relevant characteristics including gender, program type, demographic characteristics, and intersectional identities, enabling examination of differential impacts and identification of whom interventions serve well or poorly. Data quality should be ensured through validation procedures checking accuracy and completeness, training for data collectors ensuring consistency, documentation of data collection methods enabling assessment of reliability, and regular audits identifying and correcting problems. Analysis should examine data for patterns and insights including trend analysis tracking changes over time, comparison analysis assessing performance against targets or benchmarks, disaggregated analysis identifying differential outcomes, correlation analysis examining relationships between variables, and qualitative analysis understanding experiences and processes. Learning processes should translate data into understanding and improvement through regular reflection sessions where stakeholders review findings and discuss implications, root cause analysis investigating why outcomes occurred not merely documenting that they occurred, identification of promising practices warranting expansion, recognition of failures requiring adjustment, and adaptation of strategies based on evidence. Adaptive management should systematically adjust based on learning through strategic review processes periodically examining whether approaches remain optimal, pilot testing of modifications before full implementation, rapid-cycle improvement making small adjustments frequently, documentation of changes and rationales creating institutional memory, and communication of adjustments ensuring stakeholders understand evolution. Learning should be participatory engaging diverse stakeholders in data interpretation including beneficiaries providing service recipient perspectives, frontline staff sharing implementation insights, organizational leadership assessing strategic implications, and external stakeholders offering comparative perspectives. Success indicators include monitoring system functionality and data quality, regular data analysis and reporting, learning process implementation with documented reflections, adaptive management examples with evidence-based adjustments, and stakeholder engagement in learning and improvement.
- Stakeholder engagement and accountability mechanisms maintain external pressure and support for continued progress. Stakeholder reporting should provide transparency through annual reports documenting activities, outcomes, challenges, and plans accessible to public, board reporting to governance bodies exercising oversight, funder reporting meeting grant requirements and demonstrating value, student and employee reporting making progress visible to beneficiaries, and public disclosure enabling media and civil society scrutiny. Advisory bodies should engage stakeholders in ongoing oversight through advisory committees with diverse representation providing guidance, student councils voicing beneficiary perspectives and needs, employer advisory boards offering labor market insights and accountability, women's organization representation ensuring gender equality expertise, and community representative participation maintaining connection to populations served. Participatory evaluation should engage stakeholders throughout evaluation processes including evaluation design articulating relevant questions and appropriate methods, data collection contributing information and accessing populations, interpretation providing context and assessing validity of findings, recommendation development ensuring suggestions are practical and responsive to needs, and



dissemination sharing findings with diverse audiences. Public accountability should enable external monitoring through data disclosure making performance information publicly accessible, public forums presenting progress and receiving feedback, media engagement enabling journalistic scrutiny and public discussion, civil society monitoring with organizations tracking progress and advocating for improvement, and complaint mechanisms enabling reporting of concerns with investigation and response. Recognition programs should celebrate progress and excellence through awards highlighting outstanding achievement, public acknowledgment in events and communications, case studies showcasing effective practices, rankings comparing performance and creating positive competition, and conferences providing platforms for sharing successes. Consequences should address persistent underperformance through corrective action requirements specifying improvements needed with timelines, intensified oversight with more frequent monitoring and reporting, public accountability through disclosure of poor performance, resource consequences including funding penalties where warranted, and regulatory action by authorities with enforcement powers. Success indicators include reporting comprehensiveness and accessibility, advisory body functionality and influence, participatory evaluation implementation, public disclosure extent, recognition program operation, and demonstrated consequences for poor performance.

### Tier 3: Long-term Embedding and Impact

- Comprehensive mainstreaming across organizations achieves deep integration where gender equality pervades all organizational functions. Mainstreaming should extend to all organizational levels and functions through senior leadership with gender equality central to mission and strategy, human resources with equality embedded in personnel policies and culture, finance with gender-responsive budgeting standard practice, academic or programmatic functions with gender equality integrated into core services, facilities and operations with inclusive physical environments, communications with consistent messaging and representation, and governance with oversight and accountability at highest levels. Mainstreaming strategies should employ multiple approaches including integration into existing structures rather than separate parallel systems, capacity building ensuring all personnel possess gender equality competencies, incentives rewarding gender equality contributions and outcomes, accountability holding all units and personnel responsible, and culture change transforming underlying assumptions and values. Gender mainstreaming should extend to planning and decision-making through gender analysis required in strategic planning, gender impact assessment for major decisions, gender-disaggregated data standard in all reporting, gender perspectives included in consultations and deliberations, and gender equality outcomes monitored in performance evaluation. Mainstreaming should reach day-to-day operations through standard operating procedures embedding gender equality considerations, decision rules incorporating equality in routine choices, informal practices and norms reflecting inclusive values, problem-solving approaches considering gender dimensions, and interpersonal interactions characterized by respect and inclusion. Organizational identity should evolve to incorporate gender equality through mission and values statements explicitly including commitment, external communications consistently emphasizing priority, brand and reputation associated with equality leadership, recruitment and socialization emphasizing values to new members, and organizational culture where gender equality is seen as "who we are" not external requirement. Success indicators include mainstreaming extent across organizational functions, personnel capacity and responsibility for gender equality, routine integration into processes and decisions, cultural transformation evidenced through surveys and observations, and organizational identity evolution visible in communications and reputation.
- Policy frameworks and public funding integration create systemic support enabling sustainability across institutions and sectors. Policy adoption at multiple levels should establish gender equality requirements through national legislation mandating gender equality in VET



and technical employment, regulatory frameworks specifying standards and compliance procedures, regional and local policies tailored to jurisdictions, institutional policies implementing higher-level requirements, and international commitments creating external accountability. Policy should establish requirements making action mandatory including gender equality targets for composition and outcomes, planning and reporting obligations, resource allocation requirements through gender-responsive budgeting, quality assurance integration into accreditation standards, and enforcement mechanisms with consequences for non-compliance. Public funding should integrate gender equality through dedicated budget lines in education and labor programs, formula funding incorporating gender equality performance, competitive grants prioritizing gender equality commitments, contract requirements including equality provisions in procurement, and development funding supporting gender equality in green transition. Funding should provide sustainability through multi-year appropriations reducing uncertainty, inflation adjustments maintaining purchasing power, baseline commitments integrated into regular budgets not dependent on annual decisions, and geographic distribution ensuring availability across regions. Policy frameworks should include accountability through monitoring requirements with gender-disaggregated data reporting, independent oversight by regulatory or human rights bodies, public reporting creating transparency, complaint mechanisms enabling violation reporting, and enforcement with graduated consequences from warnings through funding penalties to program closure. Policy should support capacity through technical assistance funding for implementation support, professional development resources for training, research and evaluation funding for evidence generation, network support enabling peer learning and collaboration, and innovation funding for piloting and testing new approaches. Success indicators include policy adoption across levels of governance, policy comprehensiveness and clarity, public funding allocation amounts and stability, accountability mechanism establishment and operation, and capacity support resource availability.

- Scaling and replication to achieve sector transformation enables successful approaches to spread widely creating systemic impact. Scaling strategy should identify pathways to reach broader populations through replication where proven models are adopted by new institutions and employers in additional locations, expansion where existing organizations extend reach to additional programs and populations, integration where innovations are adopted as standard practice by mainstream institutions, and policy diffusion where policy frameworks spread across jurisdictions. Replication should provide comprehensive support to adopters through implementation guides documenting approaches in detail, toolkits providing templates and resources, training programs preparing new implementers, mentorship from experienced organizations supporting start-up, technical assistance addressing challenges as they emerge, and quality assurance ensuring fidelity to effective practice elements. Evidence dissemination should enable potential adopters to learn about approaches through publications in practitioner and academic outlets, conference presentations and workshops, site visits enabling observation of practices, webinars reaching geographically dispersed audiences, and media coverage raising public awareness. Scaling infrastructure should support expansion through coordinating organizations providing oversight and support, funding mechanisms supporting new adoptions, quality assurance systems monitoring implementation, learning networks enabling peer exchange, and advocacy creating enabling policy environment. Scaling should maintain quality through model specification identifying core elements essential for effectiveness and flexible elements adaptable to context, quality standards defining minimum requirements, certification recognizing programs meeting standards, monitoring tracking implementation quality and outcomes, and continuous improvement incorporating learning from scaled implementations. Scaling should address diversity adapting to different contexts through cultural adaptation respecting local values and practices, resource scaling providing approaches for high- and low-resource settings, policy alignment ensuring compatibility with different regulatory environments, language adaptation for linguistically diverse contexts, and stakeholder



engagement involving local partners ensuring appropriateness. Success indicators include number of replications in new locations and institutions, reach expansion to additional populations, model integration into mainstream practice, policy adoption enabling scaling, quality maintenance at scale, and sector-wide impact on gender equality outcomes.

- Long-term impact evaluation and accountability documents sustained change and enables learning about enduring effects. Long-term evaluation should assess persistence of outcomes through longitudinal data collection tracking individuals and organizations over 5-10 years, repeated cross-sectional measurement comparing cohorts over time, sustainability assessment examining whether organizational changes persist after external support ends, and generational analysis tracking whether culture changes transfer to new organizational members. Impact evaluation should employ rigorous designs attributing outcomes to interventions through randomized controlled trials for definitive causal inference where feasible, quasi-experimental designs with matched comparison groups, interrupted time series examining trends before and after intervention, regression discontinuity designs leveraging eligibility thresholds, and synthetic control methods constructing counterfactuals. Evaluation should examine multiple outcome domains including individual outcomes for participants including education completion, employment, advancement, and long-term career trajectories, organizational outcomes including culture, policies, and sustained practice changes, sectoral outcomes including overall gender composition and equality indicators, economic outcomes including earnings and economic contributions, and social outcomes including attitude changes and reduced discrimination. Cost-benefit analysis should assess return on investment through costs enumeration of all resources invested, benefits quantification of outcomes in monetary terms where possible, net benefit calculation comparing benefits to costs, sensitivity analysis examining how conclusions vary with assumptions, and comparison to alternatives assessing whether approaches produce better value than other investments. Evaluation should disaggregate by population characteristics examining differential impacts including gender to assess whether interventions benefit women as intended, ethnicity and socioeconomic status to examine equity in who benefits, program participation intensity to understand dosage effects, organizational characteristics to identify contextual factors moderating effectiveness, and time period to assess whether effects strengthen or fade over time. Impact evaluation should engage stakeholders throughout process including design ensuring questions address stakeholder interests, data collection accessing diverse perspectives and populations, interpretation providing context and assessing practical significance, reporting communicating findings in accessible formats, and utilization applying findings to policy and practice improvements. Success indicators include long-term evaluation completion with rigorous methods, sustained outcome documentation over extended periods, cost-benefit analysis demonstrating value, disaggregated analysis revealing equity in impacts, stakeholder engagement in evaluation, and utilization of findings for improvement and advocacy.

### 6.8.3 Implementation Pathways

Sustainability and evaluation interventions require coordinated action across organizational leadership committing resources and authority, technical experts providing evaluation expertise, financial managers ensuring fiscal sustainability, program implementers embedding sustainability into operations, and external stakeholders providing accountability pressure. Individual-level pathways ensure people—students, employees, community members—experience sustained support and improvement rather than temporary interventions disappearing after initial enthusiasm. Institutional-level pathways build organizational capacities for long-term commitment, evidence-based improvement, and accountability. Systemic-level pathways create policy and resource frameworks enabling sustainability across institutions and sectors.



## Individual-Level Implementation

- **Sustained access to support and opportunity** ensures individuals experience continuous improvement rather than temporary interventions followed by regression. Students and employees should encounter durable systems through policies and structures persisting beyond individual champion tenure, consistent support available across years not dependent on annual funding decisions, cumulative improvements with each cohort benefiting from previous learning, predictable pathways from education through career advancement, and quality maintenance with standards and accountability preventing deterioration. Individuals should see investments in their development justified through clear articulation of organizational benefits from their success, visible allocation of resources demonstrating commitment, celebration of achievements acknowledging contributions, transparency about challenges and plans for addressing them, and accountability when organizations fail to deliver promised support. Participants should contribute to improvement through feedback mechanisms enabling input on program quality, participation in evaluation providing data and perspectives, engagement in learning processes helping interpret findings and suggest adjustments, advocacy supporting continued investment and policy adoption, and mentorship of subsequent cohorts creating continuity and community. Success metrics include consistent availability of support over multiple years, student and employee reports of sustained quality, participation in improvement processes, and longitudinal outcomes showing benefits persist beyond initial program participation.

## Institutional-Level Implementation

VET institutions must embed gender equality permanently into operations and culture. Institutional leadership should provide sustained commitment through strategic plan integration establishing gender equality as core priority, budget allocation providing adequate stable resources from core operating funds, policy formalization with board approval creating protection and authority, public communication consistently emphasizing importance internally and externally, and personal engagement with leadership visibly participating in initiatives and accountability. Gender equality infrastructure should become permanent through establishment of dedicated units or offices with ongoing funding, appointment of personnel with expertise and authority in permanent positions, integration into organizational structure with clear reporting and authority, policy embedding into all relevant organizational procedures and requirements, and systems development including data infrastructure and quality assurance. Institutions should develop internal capacity through faculty and staff training ensuring widespread competency, distributed leadership developing champions throughout organization, knowledge management capturing and transferring expertise preventing loss when individuals leave, succession planning ensuring continuity when leaders change, and cultural embedding so commitment transcends individual champions. Financial sustainability should be achieved through core budget integration allocating gender equality resources in regular operating budgets, diverse funding portfolio reducing dependence on single sources, efficiency improvements optimizing resource utilization over time, value demonstration through return on investment analysis, and fundraising capacity maintaining ability to secure external resources. Evaluation should inform improvement through regular monitoring tracking progress and problems, data analysis identifying patterns and insights, participatory learning with stakeholders reflecting on findings, adaptive management adjusting strategies based on evidence, and accountability reporting transparently on progress and challenges. Success indicators include leadership sustained commitment evidenced through actions over years, infrastructure permanence through policies and structures, capacity distribution across organization, financial stability with adequate diversified funding, evaluation utilization for improvement, and demonstrable sustained outcomes over 5-10 years.

Employers must integrate gender equality into business strategy and operations. Organizational commitment should be long-term through board-level oversight with diversity and inclusion on governance agenda, executive accountability with senior leadership performance tied to equality outcomes, strategic integration with gender equality in business strategy and plans, resource allocation providing adequate ongoing investment, and public commitment with disclosure and transparency. Gender equality should integrate into human resource systems through recruitment processes eliminating bias and increasing diverse candidate pools, advancement systems ensuring equitable opportunity and transparent processes, compensation equity with regular pay audits and correction of gaps, workplace culture initiatives fostering inclusion and belonging, and monitoring tracking workforce composition, advancement patterns, and retention. Policies should formalize requirements through written policies adopted through governance, procedures operationalizing policies into specific practices, training ensuring all personnel understand requirements, accountability with compliance monitoring and consequences, and regular review updating policies based on experience. Employers should demonstrate business value through talent outcomes including recruitment, retention, and performance improvements, innovation benefits from diverse perspectives and problem-solving, reputation enhancement attracting customers and investors, risk mitigation reducing discrimination complaints and costs, and financial performance with equality linked to business results. Evaluation should assess effectiveness through workforce data monitoring demographic composition and patterns, climate surveys measuring inclusion and satisfaction, advancement analysis tracking career progression, retention analysis identifying who stays and leaves, and impact studies linking diversity to business outcomes. Success indicators include governance oversight establishment, executive accountability with measurable goals, human resource integration across functions, demonstrable business value, sustained workforce diversity improvements, and long-term commitment evidenced through continued investment over years.

Government agencies should institutionalize gender equality support through policy and funding. Policy frameworks should provide long-term stability through legislative foundations establishing requirements not vulnerable to administrative changes, regulatory standards specifying compliance expectations, multi-year plans providing continuity beyond electoral cycles, cross-party support building broad political backing, and international commitments creating external accountability. Funding should be sustainable through baseline appropriations integrated into regular budgets, formula funding with gender equality performance components, multi-year grants providing planning stability, adequate amounts enabling quality implementation not merely symbolic efforts, and geographic distribution ensuring availability across regions. Implementation support should build sector capacity through technical assistance helping institutions and employers implement, professional development training practitioners, research and evaluation generating evidence base, network support enabling peer learning, and innovation funding supporting pilot initiatives. Monitoring and accountability should track sector progress through comprehensive data collection on gender equality indicators, public reporting making progress visible, independent evaluation assessing policy effectiveness, regulatory enforcement ensuring compliance with requirements, and stakeholder engagement in oversight and advocacy. Government should lead by example through public sector employment demonstrating commitment, procurement policies leveraging purchasing power to incentivize equality, public messaging raising awareness and shifting attitudes, and interagency coordination aligning efforts across government. Success indicators include policy stability through legislation and cross-party support, funding sustainability with baseline appropriations, implementation support availability and utilization, monitoring comprehensiveness and transparency, and sector-wide improvements in gender equality outcomes over time.

### Systemic-Level Implementation

- Policy integration across levels and sectors creates enabling environment for sustained gender equality work. Vertical integration should align policies from international commitments

through national legislation to institutional regulations, ensuring coherence and mutual reinforcement across levels, clear responsibility assignment avoiding implementation gaps, adequate authority at each level for implementation, and accountability chains enabling oversight. Horizontal integration should coordinate policies across sectors through education policies addressing VET curriculum and student support, labor policies governing employment and workplace conditions, energy and industry policies shaping green energy sector development, gender equality policies providing frameworks and oversight, and economic policies including procurement and tax incentives. Policy coherence should be ensured through inter-ministerial coordination bodies, joint planning and strategy development, conflict resolution when policies contradict, shared indicators enabling integrated monitoring, and coordinated reporting showing cross-sectoral progress. Policy should establish requirements creating obligations through mandatory gender equality standards, compliance monitoring and enforcement, public funding conditionality linking resources to performance, accreditation integration making equality necessary for approval, and consequences for persistent non-compliance. Policy should provide resources enabling action through dedicated funding appropriations, technical assistance and capacity building support, research and evaluation resources, innovation funding for piloting and testing, and infrastructure support for networks and coordination. Success indicators include policy adoption across levels and sectors, policy coherence with aligned rather than contradictory requirements, requirement establishment with enforcement, resource provision adequacy, and demonstrable policy impact on sector practices and outcomes.

- Knowledge systems and evidence base enable learning and scaling of effective approaches. Research should generate comprehensive evidence through effectiveness studies assessing whether interventions achieve intended outcomes, implementation studies understanding how and why approaches work or fail, cost-effectiveness analysis comparing value of different investments, equity analysis examining who benefits and who is left behind, and long-term impact evaluation documenting sustained effects. Knowledge should be synthesized and accessible through systematic reviews aggregating findings across studies, meta-analyses quantitatively combining results, practice guidelines translating evidence into recommendations, toolkits providing implementation resources, and databases making research findings searchable and accessible. Dissemination should reach diverse audiences through academic publications for research communities, practitioner journals and guides for implementers, policy briefs for government officials, media engagement for public awareness, and conferences enabling presentation and discussion. Knowledge systems should support learning communities through online platforms enabling discussion and resource sharing, in-person networks for deeper relationship-building and exchange, peer learning arrangements where organizations support each other, collaborative inquiry projects investigating shared challenges, and action research where practitioners systematically study their own practice. Knowledge management should capture institutional learning through documentation of approaches and lessons learned, accessible repositories making resources available, expert directories connecting those with questions to those with expertise, succession planning ensuring knowledge transfer when personnel change, and continuous updating incorporating new learning. Success indicators include research volume and quality on gender equality in green energy education and employment, evidence synthesis availability and accessibility, dissemination reach across audiences, learning community participation and engagement, and demonstrated utilization of evidence for improvement and scaling.
- Accountability infrastructure and external pressure sustains commitment despite competing priorities and resistance. Independent oversight should provide external monitoring through regulatory bodies with authority to investigate and enforce, ombudspersons or human rights commissions receiving complaints, civil society organizations conducting monitoring and advocacy, media providing investigative reporting and public discussion, and international



bodies reviewing treaty compliance. Accountability mechanisms should include reporting requirements with comprehensive data collection and public disclosure, performance targets establishing clear expectations, regular reviews assessing progress and compliance, consequences for failure including corrective action requirements through sanctions, and recognition for excellence through awards and public acknowledgment. Stakeholder power should enable influence through governance representation with seats on boards and councils, participatory evaluation engaging in assessment and improvement, advocacy campaigns mobilizing pressure for action, litigation enforcing legal requirements when voluntary compliance fails, and consumer and investor pressure leveraging economic influence. Transparency should provide information enabling accountability through data accessibility with public reporting and open data, documentation of policies and practices, explanation of decisions and resource allocation, accessibility enabling stakeholder and public review, and responsiveness to inquiries and concerns. Accountability should be sustained over time through institutionalized oversight mechanisms, long-term stakeholder coalitions maintaining pressure, periodic evaluation examining enduring compliance, generational monitoring tracking whether commitment persists as leadership changes, and cultural embedding where accountability becomes normalized expectation. Success indicators include independent oversight establishment and operation, accountability mechanism comprehensiveness and utilization, stakeholder power and influence, transparency extent and accessibility, sustained accountability pressure over years, and demonstrable consequences when failures occur alongside recognition of successes.

#### **6.8.4 Success Indicators and Monitoring**

Effective monitoring requires clear, measurable indicators aligned with sustainability and evaluation objectives across infrastructure development, operational effectiveness, and long-term impact. Indicators should assess sustainability dimensions including financial stability, organizational embedding, and sustained outcomes, alongside evaluation dimensions including evidence generation, learning utilization, and demonstrated impact (table 21). Data collection must balance retrospective assessment of what has been achieved with prospective monitoring of whether sustainability mechanisms are in place and functioning. Monitoring should occur at three temporal scales: immediate output indicators measured within 12-18 months documenting infrastructure establishment, intermediate outcome indicators measured at 2-4 years assessing sustainability and evaluation system functioning, and long-term impact indicators measured at 5-15 years demonstrating enduring change and sector transformation.



Intervention Area	Immediate Outputs (0-18 months)	Intermediate Outcomes (2-4 years)	Long-term Impact (5-15 years)
<b>Sustainability planning and risk assessment</b>	<ul style="list-style-type: none"> <li>Sustainability plans developed with stakeholder input</li> <li>Risk assessments completed</li> <li>Mitigation strategies designed</li> <li>Transition plans created</li> </ul>	<ul style="list-style-type: none"> <li>Early sustainability indicators showing progress</li> <li>Risk mitigation implementation</li> <li>Stakeholder commitment sustained</li> <li>Transition progress toward operational status</li> </ul>	<ul style="list-style-type: none"> <li>Continuation beyond initial funding</li> <li>Resilience through challenges and changes</li> <li>Sustained stakeholder ownership</li> <li>Independence from extraordinary effort</li> </ul>
<b>Evaluation system design and baseline</b>	<ul style="list-style-type: none"> <li>Evaluation plans developed</li> <li>Baseline data collected</li> <li>Monitoring systems operational</li> <li>Evaluation capacity established</li> </ul>	<ul style="list-style-type: none"> <li>Regular monitoring data collection and reporting</li> <li>Evaluation studies completed</li> <li>Data quality and completeness</li> <li>Evaluation findings utilization</li> </ul>	<ul style="list-style-type: none"> <li>Comprehensive evidence base on effectiveness</li> <li>Long-term outcome documentation</li> <li>Demonstrated impact on individuals and organizations</li> <li>Evaluation culture and capacity</li> </ul>
<b>Resource mobilization and diversification</b>	<ul style="list-style-type: none"> <li>Funding sources diversified</li> <li>Initial multi-year commitments secured</li> <li>Business case articulated</li> <li>Fundraising capacity developed</li> </ul>	<ul style="list-style-type: none"> <li>Funding stability and adequacy</li> <li>Successful renewal and new funding</li> <li>Core budget integration progress</li> <li>Cost-effectiveness improvements</li> </ul>	<ul style="list-style-type: none"> <li>Financial sustainability with stable adequate funding</li> <li>Reduced dependence on external grants</li> <li>Demonstrated return on investment</li> <li>Efficient resource utilization</li> </ul>
<b>Institutionalization and policy integration</b>	<ul style="list-style-type: none"> <li>Policies adopted with governance approval</li> <li>Organizational structures established</li> <li>Designated personnel appointed</li> <li>Initial mainstreaming steps</li> </ul>	<ul style="list-style-type: none"> <li>Policy implementation across organization</li> <li>Infrastructure permanence and functionality</li> <li>Distributed responsibility and capacity</li> </ul>	<ul style="list-style-type: none"> <li>Deep embedding throughout organization</li> <li>Normalized practice not dependent on champions</li> <li>Cultural transformation evident</li> </ul>



	<ul style="list-style-type: none"> <li>▪ Cultural indicators of change</li> </ul>	<ul style="list-style-type: none"> <li>▪ Resilience through leadership changes</li> </ul>	
<b>Financial management and resource development</b>	<ul style="list-style-type: none"> <li>▪ Budget integration initiated</li> <li>▪ Financial systems established</li> <li>▪ Funding diversification strategy implemented</li> <li>▪ ROI analysis framework developed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Budget stability and adequacy</li> <li>▪ Funding source diversity maintained</li> <li>▪ Efficiency improvements documented</li> <li>▪ ROI demonstrated</li> </ul>	<ul style="list-style-type: none"> <li>▪ Financial sustainability achieved</li> <li>▪ Core budget integration complete</li> <li>▪ Demonstrated cost-effectiveness</li> <li>▪ Multiple revenue streams stable</li> </ul>
<b>Monitoring, learning, and adaptive management</b>	<ul style="list-style-type: none"> <li>▪ Monitoring systems operational</li> <li>▪ Learning processes established</li> <li>▪ Adaptive management framework adopted</li> <li>▪ Stakeholder engagement in learning</li> </ul>	<ul style="list-style-type: none"> <li>▪ Regular monitoring and analysis</li> <li>▪ Documented learning and reflection</li> <li>▪ Evidence-based adjustments implemented</li> <li>▪ Data quality sustained</li> </ul>	<ul style="list-style-type: none"> <li>▪ Continuous improvement culture</li> <li>▪ Systematic evidence utilization</li> <li>▪ Innovation and adaptation normalized</li> <li>▪ Demonstrable improvement over time</li> </ul>
<b>Stakeholder engagement and accountability</b>	<ul style="list-style-type: none"> <li>▪ Reporting systems established</li> <li>▪ Advisory bodies formed</li> <li>▪ Accountability mechanisms operational</li> <li>▪ Recognition and consequence frameworks adopted</li> </ul>	<ul style="list-style-type: none"> <li>▪ Transparent regular reporting</li> <li>▪ Active stakeholder oversight</li> <li>▪ Accountability dialogue quality</li> <li>▪ Recognition and consequences implemented</li> </ul>	<ul style="list-style-type: none"> <li>▪ Sustained external accountability</li> <li>▪ Strong stakeholder engagement over time</li> <li>▪ Demonstrable consequences shaping behavior</li> <li>▪ Public trust and legitimacy</li> </ul>
<b>Comprehensive mainstreaming</b>	<ul style="list-style-type: none"> <li>▪ Mainstreaming strategy developed</li> <li>▪ Integration into core functions initiated</li> <li>▪ Capacity building programs launched</li> <li>▪ Organizational identity evolution begun</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mainstreaming breadth across functions</li> <li>▪ Personnel capacity and responsibility</li> <li>▪ Routine integration into operations</li> <li>▪ Cultural transformation indicators</li> </ul>	<ul style="list-style-type: none"> <li>▪ Gender equality pervading all organizational functions</li> <li>▪ Organizational identity incorporating equality</li> <li>▪ Automatic consideration in all decisions</li> <li>▪ Cultural normalization complete</li> </ul>
<b>Policy frameworks and public funding</b>	<ul style="list-style-type: none"> <li>▪ Policy advocacy initiatives launched</li> <li>▪ Public funding proposals submitted</li> <li>▪ Policy adoption in some jurisdictions</li> </ul>	<ul style="list-style-type: none"> <li>▪ Policy adoption spread across jurisdictions</li> <li>▪ Public funding integration</li> <li>▪ Policy implementation and compliance</li> </ul>	<ul style="list-style-type: none"> <li>▪ Comprehensive policy frameworks established</li> <li>▪ Stable public funding as baseline</li> <li>▪ Sector-wide policy compliance</li> <li>▪ Policy sustainability across political changes</li> </ul>



	<ul style="list-style-type: none"> <li>Funding commitments from government</li> </ul>	<ul style="list-style-type: none"> <li>Sustained government resource allocation</li> </ul>
<b>Scaling and replication</b>	<ul style="list-style-type: none"> <li>Scaling strategy developed</li> <li>Replication sites identified</li> <li>Support infrastructure established</li> <li>Initial replications launched</li> </ul>	<ul style="list-style-type: none"> <li>Number of successful replications</li> <li>Quality maintenance at scale</li> <li>Reach expansion documented</li> <li>Policy enabling scaling adopted</li> </ul>
<b>Long-term impact evaluation</b>	<ul style="list-style-type: none"> <li>Long-term evaluation designed</li> <li>Longitudinal tracking established</li> <li>Impact evaluation resources secured</li> <li>Baseline for long-term comparison</li> </ul>	<ul style="list-style-type: none"> <li>Interim impact data collected</li> <li>Sustained outcomes documented</li> <li>Cost-benefit analysis completed</li> <li>Preliminary impact findings</li> </ul>
		<ul style="list-style-type: none"> <li>Widespread adoption across sector</li> <li>Mainstream practice integration</li> <li>Sector transformation achieved</li> <li>Sustained quality at scale</li> </ul>
		<ul style="list-style-type: none"> <li>Demonstrated sustained impact over 5-15 years</li> <li>Comprehensive evidence of transformation</li> <li>Return on investment validated</li> <li>Legacy effects documented</li> </ul>

Table 21. Core indicators for Axis F



Organizations should establish baseline measurements capturing starting conditions across sustainability and evaluation dimensions. Monitoring systems should track sustainability indicators including funding source diversity, budget allocation stability, organizational structure permanence, policy formalization and compliance, personnel continuity and capacity, and outcome sustainability over time. Evaluation systems should track evidence generation including evaluation studies completed, findings quality and credibility, cost-benefit analysis results, disaggregated impact analysis, and knowledge dissemination and utilization. Both monitoring and evaluation should be integrated into organizational information systems enabling routine data collection, automated reporting reducing burden, dashboard access for decision-makers, and longitudinal analysis tracking change over extended periods.

Annual sustainability and evaluation reports should synthesize findings across dimensions including sustainability assessment examining financial stability, organizational embedding, policy integration, and outcome persistence, evaluation summary presenting key findings from monitoring and evaluation studies, learning and improvement documenting adaptations made based on evidence, accountability reporting transparently on successes and challenges, and forward planning identifying priorities for continued development. Reports should be presented to multiple audiences including organizational governance bodies exercising oversight, funders demonstrating value and accountability, stakeholders including students, employees, and partners, policymakers informing policy decisions, and public creating transparency and enabling external accountability.

Longitudinal analysis should examine trends over extended periods including trajectory analysis assessing whether progress is accelerating, steady, or declining, persistence analysis examining whether outcomes are sustained when external support ends, cohort comparison assessing whether benefits extend to successive generations, leadership transition analysis examining resilience when champions change, and contextual analysis understanding how external factors influence sustainability and effectiveness. Comparative analysis should benchmark against relevant comparisons including peer institutions or organizations, geographic regions or jurisdictions, different intervention approaches, and past performance within same organization, providing context for interpreting findings and identifying areas for improvement.

Participatory monitoring and evaluation should engage diverse stakeholders throughout processes including design ensuring relevant questions and appropriate methods, data collection contributing information and accessing populations, interpretation providing context and assessing practical significance, learning reflecting on findings and identifying implications, and utilization applying findings to improvement and advocacy. Meta-evaluation should periodically assess evaluation system quality including methodological rigor, stakeholder engagement quality, utilization of findings, cost-effectiveness of evaluation investment, and contribution to broader knowledge. Continuous improvement of monitoring and evaluation systems should occur through regular review of indicator relevance and quality, methodology refinement based on experience, data system enhancement improving efficiency and accuracy, capacity development strengthening expertise, and adaptation to changing priorities and contexts.

### **6.8.5 Implementation Guidelines**

Successful implementation of Axis F interventions requires long-term perspective acknowledging that sustainability and demonstrable impact require years to develop, strategic investment in infrastructure before immediate results are visible, organizational culture prioritizing learning and improvement over defensiveness about problems, and sustained commitment despite competing priorities and pressures for short-term results. The following guidelines support actors in building sustainability and evaluation systems enabling lasting transformation.

Actor	Primary Responsibilities	Required Capacities
<b>Organizational Leadership</b>	<ul style="list-style-type: none"> <li>Provide strategic vision and sustained commitment;</li> <li>allocate adequate resources;</li> <li>champion culture change;</li> <li>ensure accountability;</li> <li>make sustainability and evaluation priorities</li> </ul>	Strategic thinking, resource authority, change leadership, political skill, long-term perspective, willingness to invest before immediate results visible
<b>Gender Equality Coordinators</b>	<ul style="list-style-type: none"> <li>Lead sustainability planning and implementation;</li> <li>coordinate evaluation activities;</li> <li>monitor progress and report;</li> <li>facilitate learning and improvement;</li> <li>advocate for continued commitment</li> </ul>	Project management, evaluation knowledge, strategic planning, relationship building, communication skills, persistence through challenges
<b>Financial Managers</b>	<ul style="list-style-type: none"> <li>Develop and manage budgets;</li> <li>pursue diverse funding;</li> <li>demonstrate return on investment;</li> <li>optimize efficiency;</li> <li>integrate into core budgets;</li> <li>ensure financial transparency</li> </ul>	Financial management expertise, fundraising capacity, budget advocacy skills, analytical capability, sustainability thinking
<b>Evaluation Specialists</b>	<ul style="list-style-type: none"> <li>Design and implement evaluation systems;</li> <li>ensure methodological rigor;</li> <li>analyze data and generate insights;</li> <li>facilitate learning processes;</li> <li>communicate findings effectively</li> </ul>	Research and evaluation expertise, methodological knowledge, statistical analysis capability, participatory evaluation skills, communication ability
<b>Program Implementers</b>	<ul style="list-style-type: none"> <li>Embed sustainability into program design and delivery;</li> <li>collect monitoring data;</li> <li>participate in learning processes;</li> <li>adapt based on evidence;</li> <li>advocate for continuation</li> </ul>	Implementation expertise, data collection capacity, reflective practice orientation, openness to feedback and change, commitment to quality
<b>IT and Data Managers</b>	<ul style="list-style-type: none"> <li>Develop and maintain data systems;</li> <li>ensure data quality and security;</li> <li>create dashboards and reports;</li> <li>integrate data sources;</li> <li>provide technical support</li> </ul>	Database management, data analysis tools, system integration capability, user support skills, data governance understanding
<b>Policy Advocates</b>	<ul style="list-style-type: none"> <li>Advocate for policy frameworks supporting sustainability;</li> <li>mobilize stakeholder support;</li> <li>engage policymakers;</li> <li>generate evidence for advocacy;</li> <li>sustain pressure over time</li> </ul>	Policy analysis and advocacy expertise, relationship building with policymakers, communication and persuasion skills, coalition building, strategic timing
<b>Funders and Resource Providers</b>	<ul style="list-style-type: none"> <li>Provide multi-year funding commitments;</li> <li>support infrastructure development;</li> <li>require evaluation and learning;</li> <li>enable adaptation;</li> <li>recognize long-term nature of change</li> </ul>	Long-term investment perspective, patience for results, appreciation for infrastructure investment, willingness to fund evaluation, flexibility enabling adaptation
<b>External Evaluators</b>	<ul style="list-style-type: none"> <li>Provide independent rigorous evaluation;</li> <li>validate internal monitoring;</li> <li>generate credible evidence;</li> <li>communicate findings;</li> <li>support evaluation capacity building</li> </ul>	Evaluation expertise, methodological rigor, independence and objectivity, contextual understanding, capacity building orientation



<b>Governance Bodies</b>	<ul style="list-style-type: none"> <li>▪ Exercise oversight ensuring sustainability;</li> <li>▪ hold leadership accountable;</li> <li>▪ allocate resources for long-term investment;</li> <li>▪ champion evaluation and learning;</li> <li>▪ maintain focus despite competing priorities</li> </ul>	<p>Governance authority, strategic perspective, willingness to ask difficult questions, commitment to evidence-based decision-making, long-term focus</p>
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Table 22. Implementation guidelines for Axis F

Implementation requires recognizing that sustainability and rigorous evaluation represent fundamental investments in long-term effectiveness and accountability rather than optional luxuries added if resources permit. Success depends on leadership commitment treating sustainability and evaluation as core responsibilities not peripheral activities, adequate resource allocation including personnel, funding, and time, cultural transformation valuing learning and continuous improvement, stakeholder engagement creating shared ownership of sustainability, and sustained attention over extended timeframes measured in years and decades not months and quarters. Axis F interventions create conditions for all other Blueprint axes to achieve lasting impact rather than temporary change, ensuring that investments in access, curriculum reform, mentoring, policy development, and community engagement produce transformation that endures and becomes self-sustaining rather than dependent on external pressure and extraordinary effort.

## 6.9 Coordinating Implementation Across Axes

### 6.9.1 The Need for Integration

The six Blueprint axes are designed as interdependent components of a systemic approach, not standalone interventions. Implementing only one or two axes while neglecting others significantly reduces effectiveness. For example, recruiting women into programs (Axis A) without transforming curriculum and pedagogy (Axis B) leads to high attrition when women encounter unwelcoming learning environments. Similarly, establishing mentorship programs (Axis C) proves insufficient without policy frameworks (Axis D) ensuring organizational commitment and resources. Effective implementation requires deliberate coordination across axes, ensuring interventions reinforce rather than contradict each other.

### 6.9.2 Practical Coordination Mechanisms

Coordination mechanisms should be established to enable practical implementation, indicatively:

1. **A coordination body** with representatives responsible for each axis meeting regularly to share progress, identify dependencies, and resolve conflicts. This body should have authority to allocate resources, make implementation decisions, and escalate issues to organizational leadership when necessary.
2. **An integrated implementation plan** that maps activities across all axes on a common timeline, identifies critical dependencies where progress in one axis enables or requires action in another, specifies resource allocation across axes, and establishes shared success indicators measuring overall gender equality outcomes rather than axis-specific outputs alone.
3. **Cross-axis working groups** addressing specific populations or implementation challenges. For example, a "Student Success" working group might coordinate access interventions, curriculum reforms, and mentorship provision ensuring women experience coherent support. A "Policy Implementation" working group might align policy requirements across access, curriculum, mentoring, and industry engagement.
4. **Shared data systems** tracking gender-disaggregated indicators relevant to multiple axes. Rather than each axis maintaining separate monitoring systems, integrated dashboards should display



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student enrollment (Axis A), retention and completion (Axes B and C), employment outcomes (Axes C and E), policy compliance (Axis D), and sustainability indicators (Axis F) together, enabling holistic assessment of progress.



# Annex I – The Validation Workshop material

July 2025 Athens Meeting

## Goals of the Co-design Workshop – 1<sup>st</sup> day

### Meeting Purpose

We gather in Athens to collaboratively finalize the research framework that will guide development of D2.1: Blueprint for Gender Equality in the Green Energy Transition. This foundational document will shape the entire GaTE project's approach to systemic change.

### Three Core Objectives

**1. Validate the Blueprint Framework – The "What"** Our first task is to confirm that the four Blueprint axes comprehensively address gender equality in green energy VET. We need to ensure each axis has clear, measurable components that align with our Theory of Change. Together, we'll define what success looks like and agree on the format and tone for the final deliverable. The key question: Does our framework capture all critical elements for advancing gender equality in this sector?

**2. Validate and Prioritize Research Tools – The "How"** Our research toolkit consists of desktop surveys and structured interviews with five stakeholder groups. We must finalize these tools, ensuring they're clear, culturally appropriate, and feasible across all partner countries. Most importantly, we need to identify which questions are essential versus supplementary, and confirm that our tools will generate comprehensive data for all Blueprint axes. The key question: Will these tools effectively capture both the current situation and pathways to improvement?

**3. Define the Pathway Forward – The "What's Next"** Our change model follows a clear progression: understanding the current state, identifying gaps, and mapping the path to a better situation. Desktop research will document existing baselines, policies, and programs. Interviews will reveal lived experiences and systemic barriers. Together, these will illuminate what's needed for transformative change. We'll assign clear responsibilities and establish how research findings will translate into actionable recommendations. The key question: How will our research inform concrete actions for systemic change?

### Expected Outcomes

By day's end, we should have a finalized Blueprint structure, validated research tools ready for implementation, a detailed work plan with national assignments, and most importantly, a shared vision of how our research will drive meaningful impact. Success means every partner leaves with clarity about their role in creating a robust evidence base that will guide gender equality initiatives in the green energy transition across Europe for years to come.

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## Blueprint Summary

### Blueprint for Gender Equality in the Green Energy Transition

The Blueprint for Gender Equality in the Green Energy Transition is an evidence-based strategic framework that serves as a comprehensive roadmap for promoting inclusivity and equal opportunities for women in the green energy sector. It provides a structured approach to addressing gender disparities through targeted policies, initiatives, and coordinated actions across VET providers, policymakers, industry partners, and civil society. The Blueprint is not a rigid plan but rather a strategic map that sets directions, priorities, and actionable recommendations based on research findings from desktop surveys and stakeholder interviews across five EU countries. It aligns all GaTE project activities—from awareness campaigns to mentorship programs—under a unified gender-equality strategy, ensuring systemic change toward gender balance in the green energy transition.

The Blueprint is organized around **six interconnected axes**:

- **Axis A: Access & Participation** - Removing barriers to women's entry into green energy education and careers
- **Axis B: Curriculum & Pedagogy Reform** - Creating inclusive, gender-sensitive training content and delivery
- **Axis C: Mentoring & Career Support** - Building sustained support systems for women's career development
- **Axis D: Policy & Governance** - Aligning with and influencing policy frameworks at all levels
- **Axis E: Community & Industry Engagement** - Building multi-stakeholder partnerships to support women's pathways
- **Axis F: Sustainability & Evaluation** - Ensuring long-term impact and continuous improvement

### Blueprint Coverage

Blueprint Axis	Desktop Survey Coverage	Stakeholder Interview Coverage	Gaps/Missing Elements
<b>Axis A: Access &amp; Participation</b>	<p><b>Strongly Covered</b></p> <ul style="list-style-type: none"> <li>Green energy sector overview</li> <li>Gender participation baseline</li> <li>Educational landscape mapping</li> <li>Access barriers (educational &amp; career level)</li> <li>Challenges for marginalized groups</li> </ul>	<p><b>Strongly Covered</b></p> <ul style="list-style-type: none"> <li>Barriers to enrollment (Educational Institutions)</li> <li>Recruitment/retention practices (Industry)</li> <li>Student motivations &amp; experiences (Female VET Students)</li> <li>Career pathways and industry collaboration</li> </ul>	<p><b>Minimal gaps</b></p> <ul style="list-style-type: none"> <li>Community-level barriers</li> <li>Family/social influences</li> </ul>
<b>Axis B: Curriculum &amp; Pedagogy Reform</b>	<p><b>Not Covered</b></p>	<p><b>Partially Covered</b></p> <ul style="list-style-type: none"> <li>Gender balance in faculty (Educational Institutions)</li> <li>Support measures for female students</li> <li>Student experiences of support</li> </ul>	<p><b>Major gaps</b></p> <ul style="list-style-type: none"> <li>Curriculum content analysis</li> <li>Teaching methodology assessment</li> <li>Pedagogical approaches</li> <li>Learning materials review</li> </ul>
<b>Axis C: Mentoring &amp; Career Support</b>	<p><b>Partially Covered</b></p> <ul style="list-style-type: none"> <li>Existing mentorship initiatives</li> <li>Support programs inventory</li> </ul>	<p><b>Partially Covered</b></p> <ul style="list-style-type: none"> <li>Career pathways facilitation (Educational Institutions)</li> <li>Professional development practices (Industry)</li> <li>Role of mentors (Female VET Students)</li> </ul>	<p><b>Gaps</b></p> <ul style="list-style-type: none"> <li>Mentoring program structures</li> <li>Career guidance effectiveness</li> <li>Long-term support mechanisms</li> </ul>
<b>Axis D: Policy &amp; Governance</b>	<p><b>Strongly Covered</b></p> <ul style="list-style-type: none"> <li>National policy framework</li> <li>EU policy alignment</li> <li>Institutional policies</li> <li>Implementation effectiveness</li> </ul>	<p><b>Strongly Covered</b></p> <ul style="list-style-type: none"> <li>Policy awareness and impact (All groups)</li> <li>Internal organizational policies</li> <li>Policy effectiveness ratings</li> <li>Recommendations for change</li> </ul>	<p><b>Minimal gaps</b></p> <ul style="list-style-type: none"> <li>Policy enforcement mechanisms</li> <li>Budget allocations</li> </ul>



<p><b>Axis E: Community &amp; Industry Engagement</b></p>	<p><b>Not Covered</b></p>	<p><b>Partially Covered</b></p> <p>Industry-education collaboration (Educational Institutions)</p> <p>Employer practices (Industry Representatives)</p> <p>Workplace culture assessment</p>	<p><b>Major gaps</b></p> <p>Civil society partnerships</p> <p>Community outreach strategies</p> <p>Multi-stakeholder coordination</p> <p>Local ecosystem mapping</p>
<p><b>Axis F: Sustainability &amp; Evaluation</b></p>	<p><b>Not Covered</b></p>	<p><b>Not Covered</b></p>	<p><b>Complete gap</b></p> <p>Sustainability planning</p> <p>Impact measurement frameworks</p> <p>Scaling strategies</p> <p>Evaluation methodologies</p>

## Blueprint Validation Questionnaire - All Axes

Partner Country: \_\_\_\_\_

Completed by: \_\_\_\_\_

Date: \_\_\_\_\_

### AXIS A: ACCESS & PARTICIPATION

#### A.1 Framework Completeness

Is the Axis A framework missing something important for your country?

No, comprehensive  Yes, missing: \_\_\_\_\_

#### A.2 Barrier Assessment

Rate each barrier for your country (1=Very Low, 5=Very High):

Barrier	Relevance	Severity	Blueprint Attention Needed
Gender stereotypes and bias	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Lack of role models and mentors	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Limited access to information/guidance	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Socio-cultural barriers	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5

#### A.3 Missing Barriers

Important barriers NOT listed above: \_\_\_\_\_

#### A.4 Priority Actions

Top 5 challenges to address FIRST in your country:

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_  
\_\_\_\_\_

### AXIS B: CURRICULUM & PEDAGOGY REFORM

#### B.1 Framework Completeness

Is the Axis B framework missing something important for your country?

No, comprehensive  Yes, missing: \_\_\_\_\_

#### B.2 Challenge Assessment

Rate each challenge for your country (1=Very Low, 5=Very High):

Challenge	Relevance	Severity	Blueprint Attention Needed
Lack of inclusivity in technical curricula	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Limited gender-responsive teaching methods	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Scarcity of female role models in materials	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Unconscious bias in teaching materials/methods	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Underrepresentation of female instructors	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5

### B.3 Missing Challenges

Important challenges NOT listed above: \_\_\_\_\_

### B.4 Priority Actions

Top 5 challenges to address FIRST in your country:

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_

## AXIS C: MENTORING & CAREER SUPPORT

### C.1 Framework Completeness

Is the Axis C framework missing something important for your country?

No, comprehensive  Yes, missing: \_\_\_\_\_

### C.2 Challenge Assessment

Rate each challenge for your country (1=Very Low, 5=Very High):

Challenge	Relevance	Severity	Blueprint Attention Needed
Lack of structured mentoring frameworks	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Insufficient career guidance for women	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Limited professional development pathways	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Weak peer support networks	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Discontinuity from education to employment	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Underutilization of successful women mentors	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5

### C.3 Missing Challenges

Important challenges NOT listed above: \_\_\_\_\_

### C.4 Priority Actions



1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5.  
\_\_\_\_\_

## AXIS D: POLICY & GOVERNANCE

### D.1 Framework Completeness

Is the Axis D framework missing something important for your country?

No, comprehensive  Yes, missing: \_\_\_\_\_

### D.2 Challenge Assessment

Rate each challenge for your country (1=Very Low, 5=Very High):

Challenge	Relevance	Severity	Blueprint Attention Needed
Lack of inclusive VET policy reforms	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Insufficient gender mainstreaming strategies	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Weak monitoring and accountability	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Policy gaps at multiple levels	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Limited incentives for institutional change	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5

### D.3 Missing Challenges

Important challenges NOT listed above: \_\_\_\_\_

### D.4 Priority Actions

Top 5 challenges to address FIRST in your country:

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5.  
\_\_\_\_\_

## AXIS E: COMMUNITY & INDUSTRY ENGAGEMENT

### E.1 Framework Completeness

Is the Axis E framework missing something important for your country?

No, comprehensive  Yes, missing: \_\_\_\_\_

### E.2 Challenge Assessment

Rate each challenge for your country (1=Very Low, 5=Very High):

Challenge	Relevance	Severity	Blueprint Attention Needed
Industry stereotypes and gender bias	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Limited employer engagement/inclusive workplaces	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Weak community outreach and collaboration	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Lack of networking and role models	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Cultural and social norms	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Work-life balance challenges	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Unequal access to resources/opportunities	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5
Inadequate incentives for industry participation	1-2-3-4-5	1-2-3-4-5	1-2-3-4-5

### E.3 Missing Challenges

Important challenges NOT listed above: \_\_\_\_\_

### E.4 Priority Actions

Top 5 challenges to address FIRST in your country:

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_  
\_\_\_\_\_

## OVERALL BLUEPRINT PRIORITIES

### Cross-Axis Priority Ranking

From ALL challenges across all axes, rank the TOP 10 that need immediate attention in your country:

Rank 1 (Most Urgent): \_\_\_\_\_

Rank 2: \_\_\_\_\_

Rank 3: \_\_\_\_\_

Rank 4: \_\_\_\_\_

Rank 5: \_\_\_\_\_

Rank 6: \_\_\_\_\_

Rank 7: \_\_\_\_\_

Rank 8: \_\_\_\_\_

Rank 9: \_\_\_\_\_

Rank 10: \_\_\_\_\_

### Resource Allocation

What percentage of Blueprint focus should each axis receive? (Total = 100%)

Axis A (Access & Participation): \_\_\_\_\_%

Axis B (Curriculum & Pedagogy): \_\_\_\_\_%



# Annex II – On line Survey questionnaire

Live at: <https://ec.europa.eu/eusurvey/runner/418de382-abb1-97f6-d303-230d6fd6f862>

## Introduction

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### Welcome to the GaTE Project Survey!

The **GaTE** (Gender and Transition to Green Energy) project is an EU-funded initiative working to increase women's participation and leadership in the green energy sector. We are developing a Blueprint for Gender Equality in the Green Energy Transition that will guide transformative changes across vocational education and training (VET) programs in five European countries.

**Why Your Input Matters:** this questionnaire focuses on solutions and change strategies. We want to know:

- What changes would have the greatest impact?
- Which interventions should be prioritized?
- How committed are stakeholders to implementing change? What bold ideas could accelerate progress?

**Time Required:** 15-20 minutes

**Confidentiality:** All responses are anonymous and will be reported in aggregate

### Project Details:

- Funding: Erasmus+ Programme, European Policy Experimentation Call (ERASMUS-EDU-2024-POL-EXP)
- Duration: 24 months (2024-2026)
- Partners: 10 organizations across Greece, Spain, Belgium, Norway, and Portugal
- Grant Agreement: GAP10119596285158





## Section A: Demographics

Your answers will help us to understand the demographic profile and organisational context of respondents, enabling us to analyse responses by stakeholder type, experience level, and existing engagement with gender equality initiatives. This baseline data will help identify which sectors/roles are most ready for change and where targeted support is needed most.

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### 1 Your role:

- VET Institution Administrator/Director
- VET Instructor/Teacher
- Industry Representative/Employer
- Policy Maker/Government Official
- NGO/Women's Organization Representative
- Current VET Student
- Career Counselor/Advisor
- Other: \_\_\_\_\_

### 2 Your organisation:

- Public VET Institution
- Private VET Institution
- Green Energy Company
- Energy Company (Non Green Sector)
- Government Agency
- Policy Actor
- Non-Profit Organization
- Association

### 3 Country:

### 4 Gender:

- Male
- Female

### 5 Size of your organisations (number of employees)



## Section B. Vision and Goals

Your answers will help us to establish consensus on ambitious yet achievable targets for female participation and identify what stakeholders see as the most critical changes needed. The open-ended responses will reveal diverse perspectives on priorities that may not have emerged in our structured interviews, helping shape the Blueprint's overarching vision.

1 What should be our target for female participation in green energy VET programs by 2030?

2 In your opinion, what is the single most important change needed to achieve gender equality in green energy?

3 Rate the importance of these success indicators for gender equality in green energy education (scale: 1 not important, 5- Extremely Important):

	1	2	3	4	5
Equal enrollment rates in VET programs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Equal completion/graduation rates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Equal job placement rates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Equal starting salaries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Equal representation in leadership roles (within 5 years)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gender-balanced teaching staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inclusive learning environment scores	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4 Other Comments



### Section C: Priority Interventions

Your answers will help us to validate and rank potential interventions based on perceived effectiveness from diverse stakeholder perspectives. This data will guide resource allocation recommendations and help identify which interventions should be piloted first, while the open-ended question captures innovative ideas from the field.

**1 Rate the potential effectiveness of these EDUCATIONAL interventions to achieve gender equality in green energy: (1 = Not Effective, 5 = Highly Effective)**

	1	2	3	4	5
Redesign curriculum with female role models and case studies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Implement mandatory unconscious bias training for all instructors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create women-only preparatory/foundation courses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Develop flexible learning schedules for work-life balance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Introduce gender-sensitive teaching methodologies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**2 Rate the potential effectiveness of these SUPPORT SYSTEMS to achieve gender equality in green energy: (1 = Not Effective, 5 = Highly Effective)**

	1	2	3	4	5
Establish structured mentorship programs with industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Provide dedicated career counseling for women	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create peer support networks/communities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Offer childcare support during training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Develop re-entry programs for career changers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**3 Rate the potential effectiveness of these FINANCIAL INCENTIVES for achieving gender equality in Green energy: (1 = Not Effective, 5 = Highly Effective)**

	1	2	3	4	5
Offer scholarships specifically for women	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Provide paid internships with partner companies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guarantee job placement upon completion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create tax incentives for companies hiring female graduates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**4 Other Comments**



### Section D: Change Readiness and Commitment

Your answers will help us to assess organisational capacity and willingness to implement change, identifying gaps between intention and capability. Understanding specific support needs and likelihood of action will help design realistic implementation timelines and necessary support structures for the Blueprint.

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1 What specific support would your organization need to implement gender equality initiatives effectively?

2 What is the likelihood your organization would implement these changes within 12 months? (1 = Very Unlikely, 5 = Very Likely)

	1	2	3	4	5
Review and revise curriculum for gender inclusivity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Set specific targets for female enrollment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Establish partnerships with women's organizations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Allocate budget for gender equality initiatives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create a gender equality action plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3 Other Comments



## Section E: Barriers and Solutions

Your answers will help us to identify the most significant implementation barriers across different contexts and evaluate which strategies stakeholders believe will be most effective in overcoming them. The context-specific insights will ensure the Blueprint addresses real-world challenges with practical solutions.

1 What level of annual investment or other resources is realistic for gender equality initiatives in your organisation?

2 Rank the following barriers to implementing change, in order of significance:

Use drag&drop or the up/down buttons to change the order or accept the initial order.

- Lack of funding
- Resistance from staff
- Industry reluctance
- Cultural/social attitudes
- Policy/regulatory constraints
- Lack of female role models
- Limited evidence of what works

3 What is the most challenging barrier in YOUR specific context, and how could it be overcome?

4 Rate the potential of these strategies to overcome barriers: (1 = Low Potential, 5 = High Potential)

	1	2	3	4	5
Government mandates/quotas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial incentives for institutions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Public awareness campaigns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Industry-led initiatives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peer pressure/competition between institutions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Success stories and case studies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



5 Describe one "game-changing" idea that could radically improve women's participation in green energy, even if it seems unrealistic today:

6 Rank the potential impact of these innovative approaches to overcome the barriers:

Use drag&drop or the up/down buttons to change the order or [accept the initial order](#).

- Virtual reality training to reduce gender bias in technical learning
- All-female cohorts for first year, then integration
- Industry sponsors assigned to each female student
- Gamification of technical subjects
- Family engagement programs to shift cultural attitudes
- Green energy career exposure starting in primary schools

7 Other Comments





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## Section G: Conclusions

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1 Describe one specific partnership or collaboration that could make a significant difference in your region:

2 If you could guarantee ONE change would happen in the next year to improve women's participation in green energy, what would it be?

3 Any other comments:

**Thank you for shaping the future of gender equality in green energy! Your responses will directly influence the GaTE Blueprint and create lasting change across Europe.**

# Annex III – Structured Interview Questionnaire

The WP2 Structured Interview questionnaire that we designed and sent to all partners can be found below:

## WP2 – Structured Interviews

The structured interview questionnaire is a comprehensive data collection instrument designed to gather in-depth insights from five key stakeholder groups (Educational Institutions, Industry Representatives, Female VET Students, Policymakers, and Women's Organizations) across the four participating EU countries. The primary goal is to systematically assess the current state of gender equality in green energy VET programs and career pathways, identifying barriers, enablers, and gaps that will inform the development of the Blueprint for Gender Equality in the Green Energy Transition (Deliverable D2.1). Through semi-structured interviews targeting two or more representatives per stakeholder group in each country, the questionnaire addresses four critical Blueprint axes: Access & Participation, Curriculum & Pedagogy Reform, Mentoring & Career Support, and Policy & Governance. The questionnaire combines quantitative baseline questions to establish measurable benchmarks with open-ended qualitative questions that capture nuanced perspectives, experiences, and recommendations from diverse stakeholders. This dual approach ensures that the Blueprint will be grounded in both empirical evidence and lived experiences, providing a robust foundation for evidence-based policy recommendations and strategic interventions that can effectively promote women's participation in the green energy transition across participating countries.

The **5 stakeholder groups** identified for the GaTE project interviews are:

1. **Educational Institutions** (VET providers offering green energy programs)
2. **Industry Representatives/Leaders** (Companies and organizations in the green energy sector)
3. **Current Female VET Students** (Women currently enrolled in green energy VET programs)
4. **Policymakers** (Government officials and policy development entities at local, regional,
  - i. national, and EU levels))
5. **Women's Organizations** (Civil society organizations, NGOs, and advocacy groups focused on women's empowerment and gender equality)

**Interview Target:** 2 representatives per stakeholder group × 5 groups × 4 countries  
= **40 total interviews**

This project has been funded with the support from the European Commission. The document reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

### **Basic guidelines**

- Reach out to at least 2–3 individuals per stakeholder group and set firm deadlines for confirmation (yes or no) to ensure timely coordination. Make sure to include the project's overall scope as well as practical details such as meeting duration in your invitation.
- Once confirmed, and the slot is confirmed, you can send the questionnaire in advance, as well as the consent form to ensure stakeholders are fully informed and prepared.
- Each country is expected to produce five short reports, one per stakeholder group (2-3 pages per stakeholder group), summarizing curated notes and key findings (total of 15 pages per country). Please make sure the quantitative data for each stakeholder group are clearly noted.

### **Sample consent form**

#### **Interview Consent Form**

##### **Introduction**

You are being invited to participate in an interview designed to systematically assess the current state of gender equality in green energy VET programs and career pathways, identifying barriers, enablers, and gaps that will inform the development of the Blueprint for Gender Equality in the Green Energy Transition.

The GaTE project aims to increase women's participation and leadership in the green energy sector through training programmes, mentoring opportunities and support networks. It addresses systemic barriers and promotes collaboration between companies, government, civil society and individuals. Its key activities include mentoring programmes and an AI platform with career mentoring opportunities, jobs and institutional lobbying tools.

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may be made of the information contained therein.

##### **Voluntary Participation**

Participation in this interview is entirely voluntary. You are free to withdraw at any time without any negative consequences. If you decide to withdraw, any information you provided will be excluded from the research.

##### **Confidentiality**

All information shared in this interview will remain confidential. Any identifying information will be removed, and all data will be presented in aggregate form. Your responses will not be attributed to you personally in any reports or publications resulting from this research.

##### **Recording**

This interview is likely to be recorded for research purposes. These recordings will be used solely to transcribe and analyze the data for the research. Recordings will be stored securely and will not be shared with third parties. If you do not consent to being recorded, please inform the facilitator before the start of the session, and we will make arrangements for your participation without recording.

##### **Duration**



The interview will take approximately 1 hour to complete.

### Contact Information

If you have any questions or concerns about the interview or the research, please do not hesitate to contact us at:

[Name]

[Email Address]

[Phone Number]

By signing below, you are acknowledging that you have read and understood the information provided above and agree to participate in this interview

### Participant Consent

I have read and understood the purpose and details of the research. I consent to participate in the interview, including the audio recording of the session.

**Participant Name (Printed):** \_\_\_\_\_

**Participant Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

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### Educational Institutions

#### T2.1 – Baseline Assessment

**Purpose:** Understand their current engagement and challenges in promoting women's participation in green/clean energy VET programs.

#### Quantitative questions:

1. Does your institution currently offer VET programs related to green or clean energy technologies? (Yes/No) | Axis A
2. (if yes) In the last 3 years, has the proportion of female students in these programs increased? (Yes/No/Not sure) | Axis A
3. On a scale from 1 to 5, how actively does your institution take measures to attract female students into green energy fields? (1 = Not at all, 5 = Very actively) | Axis A

#### Open ended questions:

1. What are the main barriers that prevent more women from enrolling in green energy VET programs? | Axis A
2. How important do you consider gender balance in green energy VET fields? | Axis A 3. Have you

implemented any specific actions or campaigns to promote gender balance? What were the results? | Axis A

3. What percentage of female students who enrol in the program(s) also graduate | Axis C
4. Do you collaborate with the energy industry to facilitate career pathways for female students? | Axis C
5. How gender equitable and inclusive do you find the green energy sector to be, as a career choice? | Axis A
6. What kind of support (policy, funding, partnerships) would help you attract more women to these fields? | Axis E
7. What is the gender balance in the faculty of your green energy VET program(s) | Axis F 9. How do you assess whether your current curriculum content and teaching methods are gender-inclusive? What specific examples can you provide? | Axis B (Annex)

## T2.2 – Policy and Regulatory Framework Analysis

**Purpose:** Assess awareness and alignment with gender equality policies related to GET education and training.

1. Are you aware of national or EU policies that promote gender equality in the energy sector? (Yes/No) | Axis D
  - If yes: Which policies are you familiar with, and how have they affected your organization?
  - If no: Where do you think the gaps in awareness or communication lie?
2. Does your organization have internal policies or quotas to promote gender equality in GET roles? (Yes/No) Axis D
  - If yes: What do these policies include, and how are they
3. implemented?
4. If no: What prevents your organization from adopting such policies?
5. What specific actions or policy changes do you believe would be most effective in promoting gender equality in green energy education? (Can you give examples of successful practices you've seen elsewhere? | Axis D
6. Who do you think should be primarily responsible for implementing these changes – government bodies, educational institutions, industry partners, or others? | Axis D

## Industry Representatives / Leaders

### T2.1 – Baseline Assessment

**Purpose:** Explore recruitment, retention, and development practices for women in green energy roles.

1. Approximately what percentage of employees in technical roles related to green energy in your organization are women? | Axis A
2. What types of roles do they occupy?
3. If the percentage is relatively small: What do you think are the reasons for the absence of women in these roles?
4. Over the past 3 years, has the number of women in technical GET positions increased? (Yes/No/Remained the same/ I don't know) | Axis A
  - If yes: What do you think contributed to this increase?
  - If no/remained the same: What barriers continue to prevent growth in women's participation?
5. On a scale from 1 to 5, how actively do you implement strategies to attract or retain women in green energy jobs? | Axis C
6. Why did you choose this score?

7. Can you describe any strategies or actions your organization has taken in this area?
8. What would help you do more to support women in these roles?
9. What input do you provide to educational institutions about the skills and competencies needed for women to succeed in your workplace? | Axis B (Annex)
10. How do you assess and improve your workplace culture to ensure it's welcoming for women in technical roles? | Axis E (Annex)
11. How do you measure the ROI of your gender diversity initiatives in technical roles? | Axis F (Annex)

## T2.2 – Policy and Regulatory Framework Analysis

Purpose: Examine the impact of policies on workplace equality and organizational practices.

1. Are you aware of national or EU policies that promote gender equality in the energy sector? (Yes/No) | Axis D
  - If yes: Which policies are you familiar with, and how have they affected your organization?
  - If no: Where do you think the gaps in awareness or communication lie?
2. Does your organization have internal policies or quotas to promote gender equality in GET roles? (Yes/No) | Axis D
  - If yes: What do these policies include, and how are they
3. implemented?
  - If no: What prevents your organization from adopting such policies?
4. On a scale from 1 to 5, how effective do you find current regulations in supporting gender equality in your sector? | Axis D
  - Why did you give this rating?
  - What has worked well, and what hasn't, in terms of policy impact?
  - What kind of policy changes would make the biggest difference?

### Current Female VET Students | T2.2 ONLY

**Purpose:** Understand motivations, experiences, and barriers faced by girls/women in green energy VET tracks.

Why did you choose your VET program? (Select all that apply) | Axis A

- I have a strong interest in green or clean energy
- I believe it offers good job opportunities in the future
- It aligns with my personal values (e.g., sustainability, climate action)
- It was recommended by teachers, family, or career advisors
- I wanted to gain practical, hands-on skills
- It was one of the few available options in my area

4. Do you feel equally encouraged and supported as your male peers in this program?

(Yes/No) | Axis C

○ Can you share an example of when you felt (or didn't feel) supported? ○ What role do teachers or mentors play in your experience of support? ○ What would help make this program more supportive or inclusive for women?

5. On a scale from 1 to 5, how confident are you that this program will lead to employment in the green energy sector? | Axis F

- Why did you choose this level of confidence?
    - What kinds of job opportunities do you see for yourself after the program?
  - What would increase your confidence in finding work in this field
6. Do you find the teaching methods and learning materials in your program equally relatable and engaging for women? Can you give specific examples? | Axis B (Annex)

### Policy Makers | T2.2 ONLY

**Purpose:** Map awareness, ownership, and policy gaps in advancing gender equality in the green energy transition.

1. Does your institution/office currently have a policy or strategy in place to promote gender equality in the green energy sector? (Yes/No) | Axis D
  - If yes: What does the policy include and how is it being implemented?
  - If no: Are there any plans to develop such a policy? What challenges might be involved?
2. In your view, are gender considerations currently mainstreamed in green energy transition policies at your level (local/regional/national)? (Yes/No) | Axis D
  - If yes: In what ways are they embedded? Are they effective?
  - If no: Why do you think gender is not yet fully integrated into these policies? ○ What could be done to strengthen gender mainstreaming in your area?
3. On a scale from 1 to 5, how much priority is given to gender equality within green energy policymaking? | Axis D
  - What factors influence the level of priority given to this issue?
  - Who are the main actors advocating for gender inclusion in this policy area?
  - What would it take to increase the priority of gender equality in energy transition strategies?
4. How do current policies facilitate multi-stakeholder collaboration (education-industry-community) for gender equality in green energy? | Axis E (Annex)
5. What frameworks exist for monitoring and evaluating the long-term impact of gender equality policies in the green energy sector? | Axis F (Annex)

### Women's Organizations | T2.2 only

**Purpose:** Gather insights from civil society on how inclusive and effective current policies are for women in GET.

1. Has your organization been involved in any advocacy or programming related to women in green energy? (Yes/No) | Axis E
  - If yes: What types of initiatives have you led or participated in?
  - What impact have you seen, if any?
  - If no: Is this a sector your organization is interested in engaging with more actively? Why or why not?
2. Do you believe the current policy environment is supportive of women entering or advancing in green energy careers? (Yes/No) | Axis D

- Why do you think the environment is (or isn't) supportive?
  - Can you point to any policies or programs that are particularly helpful or harmful?
  - What is missing from current policies from your perspective?
- 3. On a scale of 1 to 5, how inclusive are current national/regional GET strategies in addressing women's needs? | Axis F
  - Why did you choose this rating?
  - Whose needs are currently being overlooked?
  - What would a more inclusive strategy look like from your organization's point of view?
- 4. What mentoring or support models have your organization found most effective for women in male-dominated fields? | Axis C (Annex)

## Other Critical Questions to consider by Stakeholder Group

### 1. Educational Institutions

#### Axis B: Curriculum & Pedagogy Reform (Major Gap)

- How do you assess whether your current curriculum content and teaching methods are gender-inclusive? What specific examples can you provide?
- Have you reviewed your learning materials (textbooks, case studies, examples) for gender bias? What changes have been made or are needed?
- What pedagogical approaches do you use to ensure all students, regardless of gender, feel engaged and capable in technical subjects?

#### Axis C: Mentoring & Career Support (Gap)

- Do you have a structured mentoring program for female students? If yes, how is it organized and what are the measurable outcomes?
- How do you track the long-term career progression of your female graduates in the green energy sector?

#### Axis E: Community & Industry Engagement (Major Gap)

- How do you engage with local communities and families to address cultural barriers that might prevent girls from pursuing green energy careers?
- What formal partnerships do you have with industry for internships, apprenticeships, or job placements specifically targeting female students?

#### Axis F: Sustainability & Evaluation (Complete Gap)

- How will you ensure the sustainability of gender equality initiatives after project funding ends?
- What metrics do you use to evaluate the impact of your gender equality efforts, and how often do you review them?



## 2. Industry Representatives/Leaders

### Axis B: Curriculum & Pedagogy Reform (Major Gap)

- What input do you provide to educational institutions about the skills and competencies needed for women to succeed in your workplace?
- Have you identified any gaps between what VET programs teach and what skills women actually need in your industry

### Axis C: Mentoring & Career Support (Gap)

- Do you offer structured mentorship programs for women entering or advancing in technical roles? What is the structure and success rate?
- What career advancement pathways exist for women in technical roles, and how are these communicated?

### Axis E: Community & Industry Engagement (Major Gap)

- How do you assess and improve your workplace culture to ensure it's welcoming for women in technical roles?
- What partnerships do you have with community organizations or women's groups to improve recruitment and retention?
- How do you engage with schools and communities to change perceptions about women in green energy careers?

### Axis F: Sustainability & Evaluation (Complete Gap)

- How do you measure the ROI of your gender diversity initiatives in technical roles?
- What is your 5-year plan for achieving and maintaining gender balance in technical positions?

## 3. Current Female VET Students

### Axis B: Curriculum & Pedagogy Reform (Major Gap)

- Do you find the teaching methods and learning materials in your program equally relatable and engaging for women? Can you give specific examples?
- Are there enough female role models, case studies, or examples used in your coursework?
- What changes to the curriculum or teaching style would make the program more appealing to other women?

### Axis C: Mentoring & Career Support (Gap)

- Have you been assigned a mentor? If yes, how helpful has this been for your career planning?
- What specific career guidance or support services would be most valuable for your transition to employment?

### Axis A: Access & Participation (Minor Gap)

- How did your family and community react to your choice to study green energy? What influenced their attitudes?
- What role did social media or community outreach play in your decision to pursue this field? **4.**

## Policymakers

### Axis D: Policy & Governance (Minor Gap)

- What mechanisms exist to enforce gender equality policies in VET and industry? How effective are they?
- What budget allocations are specifically designated for promoting women in green energy education and careers

### Axis E: Community & Industry Engagement (Major Gap)

- How do current policies facilitate multi-stakeholder collaboration (education-industry-community) for gender equality in green energy?
- What policy incentives could encourage stronger industry-education partnerships focused on women's participation?

### Axis F: Sustainability & Evaluation (Complete Gap)

- What frameworks exist for monitoring and evaluating the long-term impact of gender equality policies in the green energy sector?
- How can policies ensure the sustainability of gender equality initiatives beyond project-based funding?
- What indicators should be used to measure policy effectiveness in promoting women's participation in green energy?

## 5. Women's Organizations

### Axis E: Community & Industry Engagement (Major Gap)

- What role can your organization play in bridging the gap between VET institutions, industry, and communities to support women in green energy?
- What community-level interventions have proven most effective in changing attitudes about women in technical careers?
- How can we better coordinate efforts between women's organizations, educational institutions, and industry?

### Axis C: Mentoring & Career Support (Gap)

- What mentoring or support models have your organization found most effective for women in male-dominated fields?
- How can women's organizations contribute to sustained career support for women transitioning into green energy careers?

### Axis F: Sustainability & Evaluation (Complete Gap)

- Based on your experience, what are the key factors for ensuring long-term sustainability of gender equality initiatives?
- What evaluation methods has your organization used to measure the impact of interventions in male-dominated sectors?