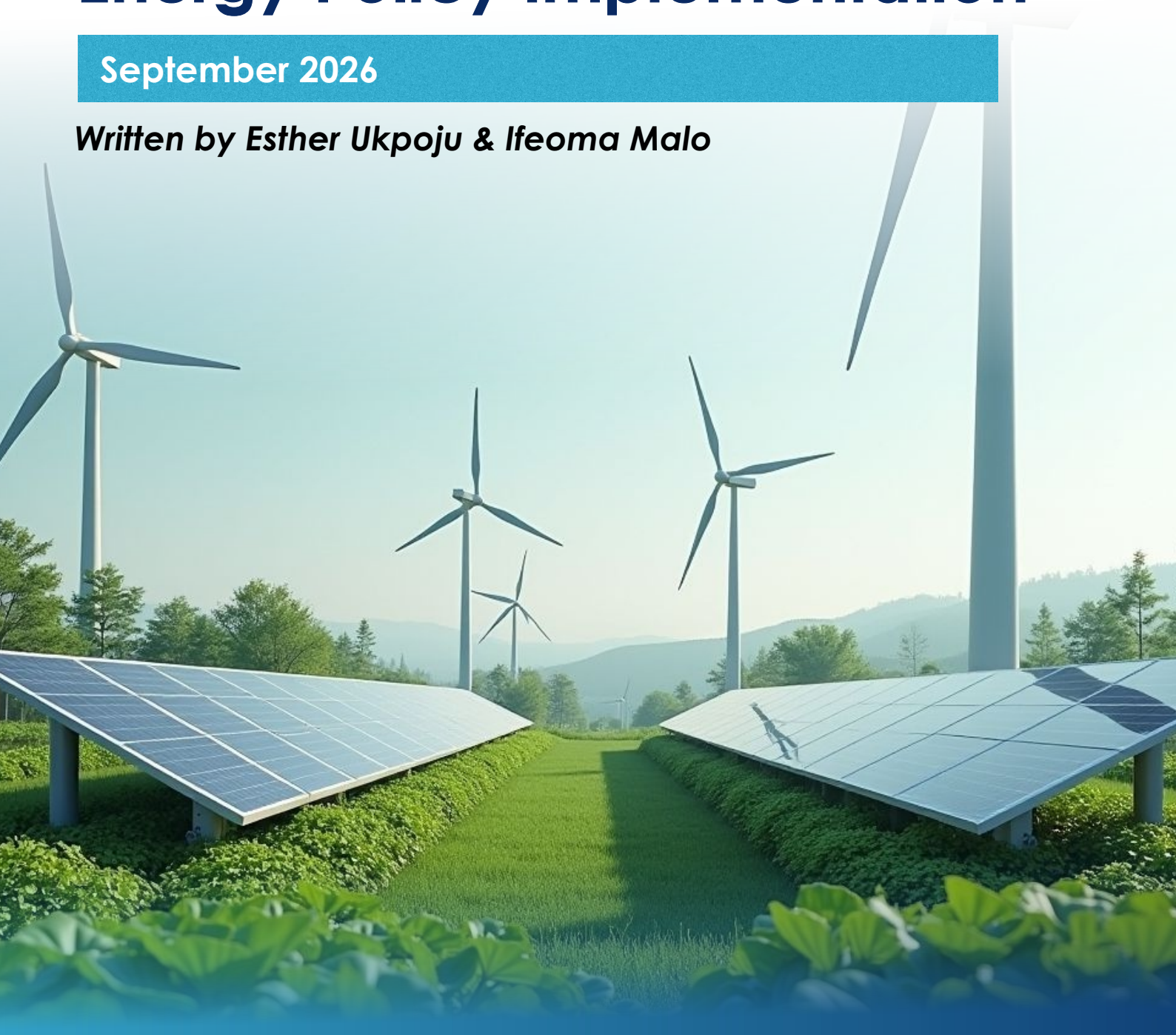
Clean Technology Hub
Energy Innovation Centre

Policy Brief

Effective Tracking and Monitoring Of DEI In Clean Energy Policy Implementation

September 2026

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Executive Summary

The clean energy sector is experiencing unprecedented growth and is projected to reach up to 38 million jobs globally by 2030[1] in an accelerated energy transition scenario, as nations pursue net-zero targets and just energy transitions. In Nigeria and across Africa, this expansion offers a historic opportunity to address energy access, drive economic development, and build resilient green economies. However, persistent gaps in **Diversity, Equity, and Inclusion (DEI)** undermine these benefits, limiting innovation, workforce talent pools, and equitable outcomes.

Globally, women represent only 32%[2] of the full-time renewable energy workforce, higher than in fossil fuels (around 23%) but well below the overall economy's average of ~45%[3]. Representation drops sharply in technical and leadership roles: just 28% in STEM positions, 22% in medium-skilled jobs like installation, and 19% in senior management or boards[4]. Ethnic minorities and other underrepresented groups face similar barriers, with data showing underrepresentation in clean energy jobs relative to national demographics. In Nigeria's renewable energy sector (primarily solar), women comprise roughly 30% of the workforce, but only 8% hold STEM roles, with many concentrated in administrative positions (21%). Broader energy workforce figures indicate even lower female participation (~18% overall, 25% in leadership)[5], compounded by cultural, recruitment, and policy challenges such as unfavourable maternity provisions and limited investment in women-led initiatives.

These disparities result in lost potential: diverse teams drive higher innovation, better community engagement, and stronger project outcomes, yet inadequate tracking and monitoring allow inequities to persist, often masked by weak or inconsistent reporting. Without robust systems, DEI efforts risk becoming superficial, hindering Nigeria's Energy Transition Plan goals and global commitments to the SDGs.

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[1] International Energy Agency. (2025). *World energy employment 2025*. https://iea.blob.core.windows.net/assets/e5b9e908-26fe-4228-8978-e4ee36c555ed/WorldEnergyEmployment2025.pdf

[2] International Renewable Energy Agency. (2025, October). *Women's share of the renewable energy workforce remains at 32 percent* [Press release]. https://www.irena.org/News/pressreleases/2025/Oct/Womens-Share-of-the-Renewable-Energy-Workforce-Remains-at-32-percent

[3] International Renewable Energy Agency. (2025). *Renewable energy: A gender perspective* (2nd ed.). https://www.irena.org/Publications/2025/Oct/Renewable-Energy-A-Gender-Perspective

[4] Bellini, E. (2025, October 8). *IRENA renewable energy gender report: Women workforce*. pv magazine. https://www.pv-magazine.com/2025/10/08/irena-renewable-energy-gender-report-women-workforce

[5] Abubakar, S. D. (2025, April 25). *The role of women in Nigeria's renewable energy development: Challenges, opportunities, and impact*. Veriv Africa. https://www.verivafrica.com/insights/the-role-of-women-in-nigerias-renewable-energy-development-challenges-opportunities-and-impact

Effective tracking and monitoring of DEI through standardized metrics, regular audits, data dashboards, and accountability mechanisms is essential to close these gaps. This policy brief proposes a practical framework for the clean energy sector, including:

- **Key performance indicators** across diversity (demographic representation), equity (access to opportunities and pay parity), and inclusion (belonging and retention).
- **Data collection and monitoring tools** adapted for public-private partnerships, with safeguards for privacy and intersectionality (e.g., gender + rural/urban or disability factors).
- **Phased implementation** starting with baseline assessments, goal-setting, and transparent reporting.

By prioritizing measurable DEI progress, stakeholders can accelerate a truly just energy transition, one that harnesses Nigeria's vibrant talent pool, attracts ethical investment, and ensures clean energy benefits all communities. Immediate adoption of this framework will position Nigeria as a leader in equitable green growth.

Introduction

The global clean energy sector is undergoing rapid expansion, driven by the urgent need to achieve net-zero emissions, enhance energy security, and meet rising demand in developing economies. According to the International Energy Agency (IEA), global energy employment trends show clean technologies (solar PV, wind, EVs, batteries, and efficiency) driving significant job growth, with renewables projected to support around 30 million jobs by 2030 under aligned transition scenarios[6].

This growth presents a transformative opportunity, especially in emerging markets like Nigeria, where energy access remains a critical challenge. Over 85 million Nigerians lack reliable electricity, and the country's Energy Transition Plan (ETP), approved in 2022 and supported by the Energy Transition Office, targets universal access by 2030 and net-zero emissions by 2060. The ETP emphasizes scaling renewables (solar, wind, hydro, and bioenergy) alongside gas as a transitional fuel to drive industrialization, job creation, and economic resilience. Nigeria's renewable energy sector, primarily focused on off-grid solar solutions, is generating jobs in installation, distribution, and maintenance. However, this growth may reinforce existing inequalities if diversity, equity, and inclusion (DEI) are not prioritized.

Diversity, Equity, and Inclusion (DEI) in the clean energy context refers to:

- **Diversity**: Representation of underrepresented groups (women, ethnic minorities, people with disabilities, rural/low-income communities, and youth) across roles and levels.
- **Equity**: Fair access to opportunities, training, pay, promotions, and resources, addressing structural barriers.
- **Inclusion**: Fostering environments where all employees feel valued, safe, and able to contribute fully, measured through belonging, retention, and engagement.[7]

Globally, women hold only **32%** of full-time jobs in the renewable energy workforce, a figure unchanged since IRENA's 2019 analysis despite sector growth[8]. Representation is higher in administrative roles (45%) but drops sharply in technical areas: **28%** in STEM-related positions,

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[6]International Energy Agency. (2025). *World energy employment 2025*. https://www.iea.org/reports/world-energy-employment-2025

[7] The Success Manual Editors. (2025, February 4). Diversity and inclusion (D&I). *thesuccessmanual.in*. https://www.thesuccessmanual.in/chapter/diversity-and-inclusion-di?utm

[8]International Renewable Energy Agency. (2025). *Renewable energy: A gender perspective* (2nd ed.). https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2025/Oct/IRENA_SOC_Renewable_energy_gender_perspective_2Ed_2025.pdf

22% in medium-skilled trades (e.g., installation and operations), and just **19%** in senior leadership or board roles. This underrepresentation limits innovation and community-aligned project design.

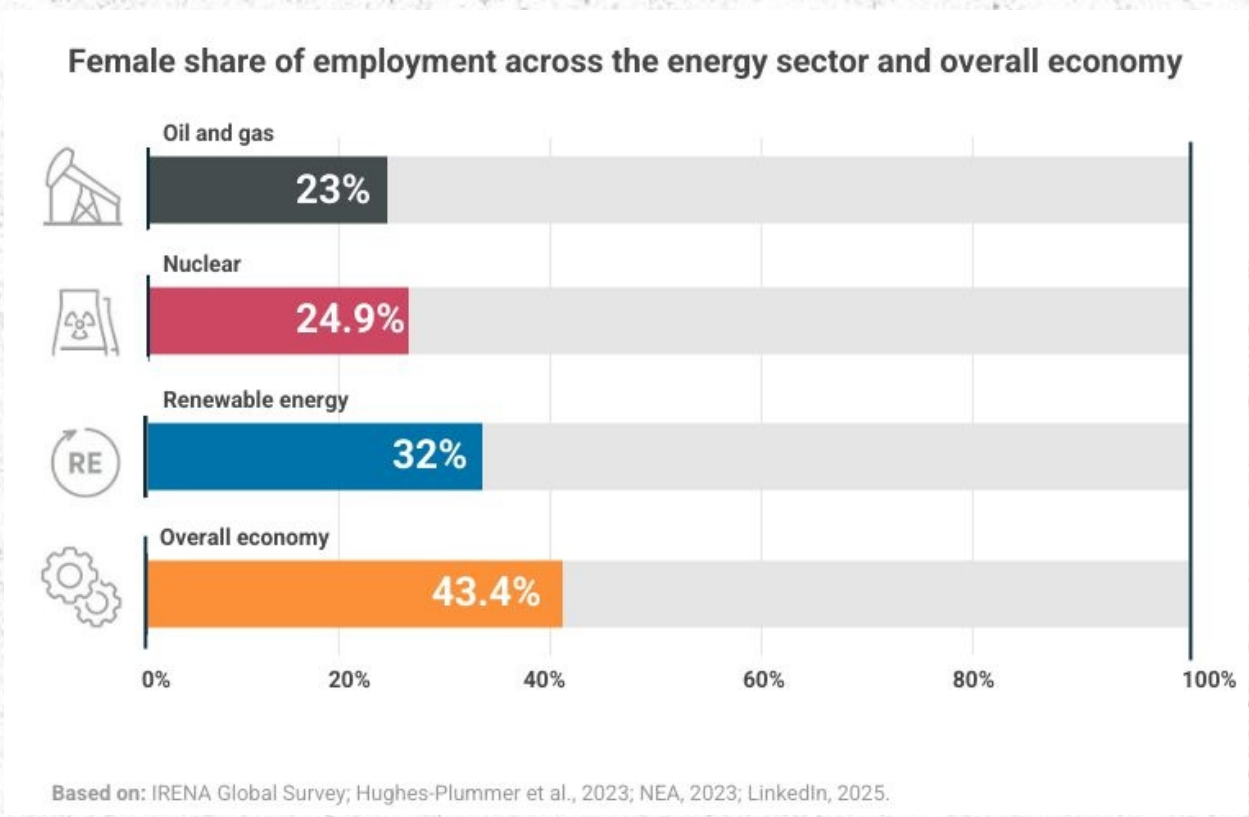


Fig 1: Female share of employment across the energy sector and overall economy. Source: IRENA.[9]

In Nigeria, the picture mirrors and intensifies global trends. Women comprise roughly **30%** of the renewable energy workforce (primarily solar), but only **8%** hold STEM roles, with **64%** in non-STEM positions and **21%** in administrative roles[10]. Barriers include cultural norms, limited access to technical training, unfavourable maternity policies, recruitment biases, and underinvestment in women-led initiatives. Intersectional factors, such as gender combined with rural location, ethnicity, or disability, further exacerbate exclusion, particularly in off-grid and community-based projects.

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[9]*Women remain under-represented in renewable energy leadership: IRENA*. (2026b, January 22).Power Peak Digest. https://powerpeakdigest.com/women-remain-under-represented-in-renewable-energy-leadership-irena/

[10]Renewable Energy Association of Nigeria. (2021, August). *Women in unfavourable renewable energy baseline report*. Heinrich Böll Stiftung. https://rean.org.ng/wp-content/uploads/media/REAN_Women_in_Renewable_Energy_Baseline_Report_2.pdf

These disparities carry high costs. Diverse teams enhance innovation (e.g., better problem-solving and market reach), improve community trust in energy projects, and support just transitions by ensuring benefits reach marginalized groups. DEI further creates a stronger sense of belonging among employees. Fig 2 depicts how the interconnected DEI pillars (Diversity as foundation, Equity for fairness, Inclusion for belonging) facilitiates this.

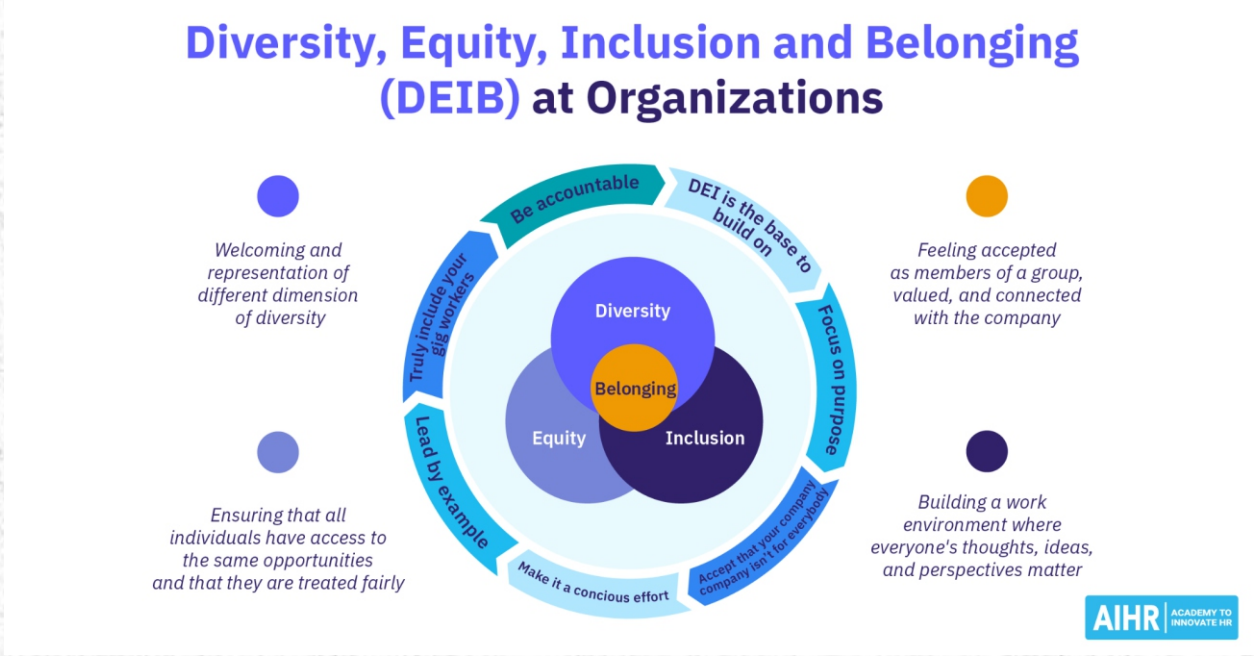


Fig 3: Diversity, Equity, inclusion and Belonging (DEIB) at organisations. AIHR

Despite the clean energy sector's rapid growth, potential to create millions of inclusive jobs, and the proven benefits of diversity, persistent **diversity, equity, and inclusion (DEI)** gaps undermine its ability to deliver a just and equitable energy transition. These disparities manifest in the underrepresentation of women, ethnic minorities, people with disabilities, rural communities, and youth, particularly in technical, leadership, and decision-making roles.

Inadequate tracking and monitoring exacerbate the issue, allowing inequities to persist without accountability, leading to talent shortages, reduced innovation, limited community buy-in for projects, and misalignment with Nigeria's Energy Transition Plan (ETP) goals of inclusive growth and universal energy access. Without effective tracking and monitoring, DEI efforts remain anecdotal or performative, risking talent shortages and investor skepticism. Robust systems, standardized metrics, regular audits, transparent reporting, and accountability are essential to close gaps, build trust, and maximize the sector's potential for equitable development.

This policy brief examines current challenges in DEI tracking within the clean energy sector and proposes a practical framework to enable systematic monitoring. By adopting evidence-based approaches, stakeholders can transform Nigeria's energy transition into a model of fairness and opportunity for all.

Current DEI Landscape

Women hold only **32%** of full-time jobs in the renewable energy workforce, a figure stagnant since IRENA's 2019 analysis, despite sector expansion[11]. This is higher than in fossil fuels (23%) but below the global workforce average of ~43%. Representation varies by role and region: higher in administrative positions (45%) but sharply lower in technical and leadership areas, **28%** in STEM-related roles, **22%** in medium-skilled trades (e.g., installation and operations), and just **19%** in senior management or board positions. Regional differences show slightly higher participation in Africa and Asia-Pacific (33%) compared to Europe and North America (27%). Underrepresented groups face similar barriers, with ethnic minorities and youth often excluded from high-opportunity roles due to access, training, and networking gaps.

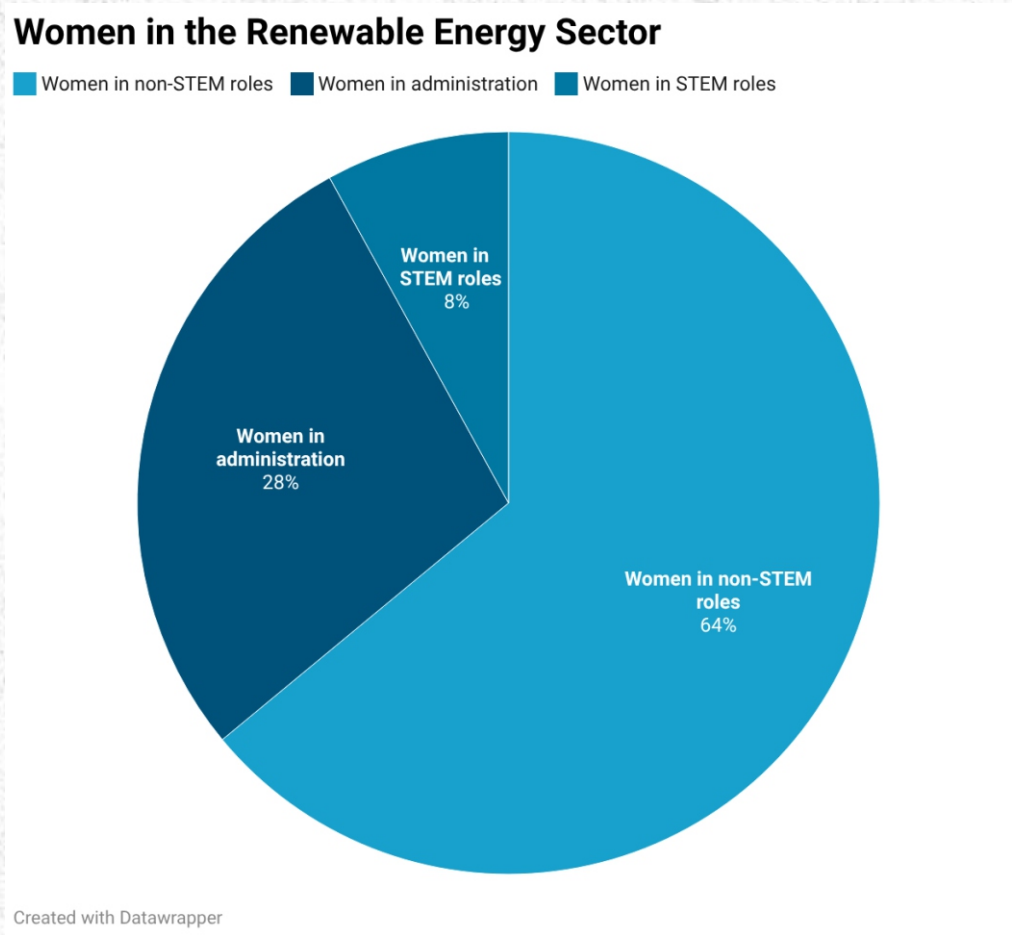


Fig 3: Percentage of women in the renewable energy sector. REAN[12].

[11]International Renewable Energy Agency. (2025). *Renewable energy: A gender perspective* (2nd ed.). https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2025/Oct/IRENA_SOC_Renewable_energy_gender_perspective_2Ed_2025.pdf

These patterns highlight a "glass ceiling" effect: women and marginalized groups enter entry-level or support roles but struggle to advance, limiting diverse perspectives in innovation, project design, and policy-making.

In Nigeria, the renewable energy sector (heavily solar-focused) mirrors global trends but with intensified challenges. Women comprise roughly **30%** of the workforce, yet only **8%** hold STEM roles, with **64%** in non-STEM positions and **21%** in administrative roles[13].

Barriers include cultural norms, limited technical training access (especially in rural areas), unfavourable maternity policies, recruitment biases, and underinvestment in women-led initiatives. Intersectional factors, such as gender combined with rural location, ethnicity, disability, or youth status, worsen exclusion, particularly in off-grid solar and community projects. Youth (who make up ~60% of Nigeria's population) and women-led startups receive disproportionately low funding and opportunities, hindering equitable participation in the ETP's renewable scaling.

Challenges in Tracking and Monitoring DEI

Effective DEI progress requires systematic tracking, yet the current landscape reveals significant gaps. Globally and in Nigeria, data collection remains inconsistent: many organizations rely on voluntary self-reporting, leading to incomplete, non-comparable datasets. Privacy concerns (e.g., under Nigeria Data Protection Act 2023 or global standards) deter disclosure of demographic information, while the lack of standardized metrics hinders benchmarking. Commercial entities often report lower female shares (28%) than non-commercial ones (37%)[14], reflecting varying definitions of the "renewable sector" and limited incentives for transparency. Few companies conduct regular audits or utilize dashboards for real-time monitoring, and intersectional data, such as gender combined with disability or rural status, is seldom collected. This leads to performative Diversity, Equity, and Inclusion (DEI) efforts, increases the risk of greenwashing, and creates challenges in linking initiatives to outcomes like employee retention or innovation. In Nigeria, the fragmented reporting among public utilities, private companies, and NGOs further entrenches silos, with limited national oversight or mandated disclosure regarding clean energy incentives.

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[12] Renewable Energy Association of Nigeria. (2021, August). Women in renewable energy baseline report. https://rean.org.ng/wp-content/uploads/media/REAN_Women_in_Renewable_Energy_Baseline_Report_2.pdf.

[13] Renewable Energy Association of Nigeria. (2021, August). *Women in renewable energy baseline report*. Heinrich Böll Stiftung. https://rean.org.ng/wp-content/uploads/media/REAN_Women_in_Renewable_Energy_Baseline_Report_2.pdf

The challenges are not insurmountable. Successful models already exist, such as gender-focused training programs in Senegal[15] and Mali, and corporate diversity, equity, and inclusion (DEI) tracking at Iberdrola. However, without strong and standardized tracking and monitoring systems, the sector cannot fully leverage DEI to promote a just transition. The following sections will propose a practical framework to address these gaps and drive measurable change.

Framework for Effective Tracking and Monitoring

To address the DEI gaps outlined, this brief proposes a structured, phased DEI Tracking and Monitoring Framework for the clean energy sector. The framework is evidence-based, adaptable to public, private, and NGO entities, and aligned with Nigeria's Energy Transition Plan (ETP) goals for inclusive growth. It emphasizes standardized metrics, privacy-compliant data collection, regular monitoring, and accountability to turn DEI from aspirational to measurable and impactful.

The core components of a DEI tracking and monitoring framework include:

1. **Metrics and Indicators:** Clear, quantifiable KPIs benchmarked against global standards (e.g., IRENA data) and national baselines.
2. **Data Collection and Tools:** Methods that ensure accuracy, privacy (compliance with the Nigeria Data Protection Act), and real-time insights.
3. **Monitoring and Accountability:** Ongoing processes, dashboards, audits, and reporting.
4. **Phased Implementation:** Step-by-step rollout for feasibility in resource-constrained settings.

The framework applies across three pillars:

Pillar 1: Diversity (Representation of underrepresented groups across roles and levels)

Focus: Closing demographic gaps, such as women's underrepresentation in technical/leadership roles (global: 19% senior; Nigeria renewables: ~8% STEM).

Pillar 2: Equity (Fair access to opportunities, pay, and resources)

Focus: Addressing structural barriers like pay gaps, training access, and funding for women/youth-led clean energy initiatives.

Pillar 3: Inclusion (Belonging, retention, and engagement)

Focus: Creating environments where diverse talent thrives, measured via surveys and retention rates.

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[14]International Renewable Energy Agency. (2025). *Renewable energy: A gender perspective* (2nd ed.). https://www.developmentaid.org/api/frontend/cms/file/2025/10/IRENA_SOC_Renewable_energy_gender_perspective_2Ed_2025.pdf

[15]TrainingCred. (n.d.). *Gender sensitive community development training*. https://www.trainingcred.com/sn/training-course/gender-sensitive-community-development-training

Metrics and Indicators(Tailored for Clean Energy)

DEI Pillar	Key Metrics (Examples)	Data Sources	Monitoring Frequency	Target/Benchmark (Global/Nigeria Context)
Diversity	• % workforce by gender, ethnicity, disability, age, rural/urban origin • % in STEM/technical roles • % in leadership/senior positions	HR databases, anonymous surveys, census data	Quarterly/Annually	Global: ≥32% women overall (IRENA 2025); Nigeria: Aim to increase from ~30% to ≥40% overall, ≥20% STEM
Equity	Pay equity ratio (by gender/ethnicity) • Promotion rates by demographic group • Access to training/funding (e.g.,% women/youth PWDs in apprenticeships or grants)	Payroll audits, grant reports, promotion logs	Annually	Zero pay gap; ≥ equal promotion rates; Align with ETP inclusive targets
Inclusion	• Employee engagement/belonging scores (surveys) • Retention/turnover rates by group • Harassment/incident reports (resolved rate)	Anonymous surveys, ex it it interviews, HR systems	Biannually	≥80% positive belonging scores; Low differential turnover

Data Collection and Tools

Effective DEI tracking in the clean energy sector requires reliable data systems, inclusive methodologies, and ethical data management practices to ensure transparency, accountability, and informed decision-making.

Tools: Integrated HR/DEI software (e.g., dashboards like those in Energy Trust of Oregon's 2025 plans); anonymous platforms for surveys; AI-assisted bias detection in hiring.

Methods: Annual DEI audits (third-party if possible); baseline assessments; partnerships with NGOs (e.g., Women In Energy Network in Nigeria) for intersectional data.

Privacy & Ethics: Anonymize data, comply with NDPR/GDPR; obtain consent for demographic self-reporting.

Best Practices Examples: Iberdrola (Spain) invests in women-only electrician schools; Schneider Electric empowers women in green skills (Senegal/Mali/Niger); Nigeria's NEP trains women in solar PV installation.

The data collected and monitored on a dashboard may be managed according to best practices (Fig 4).

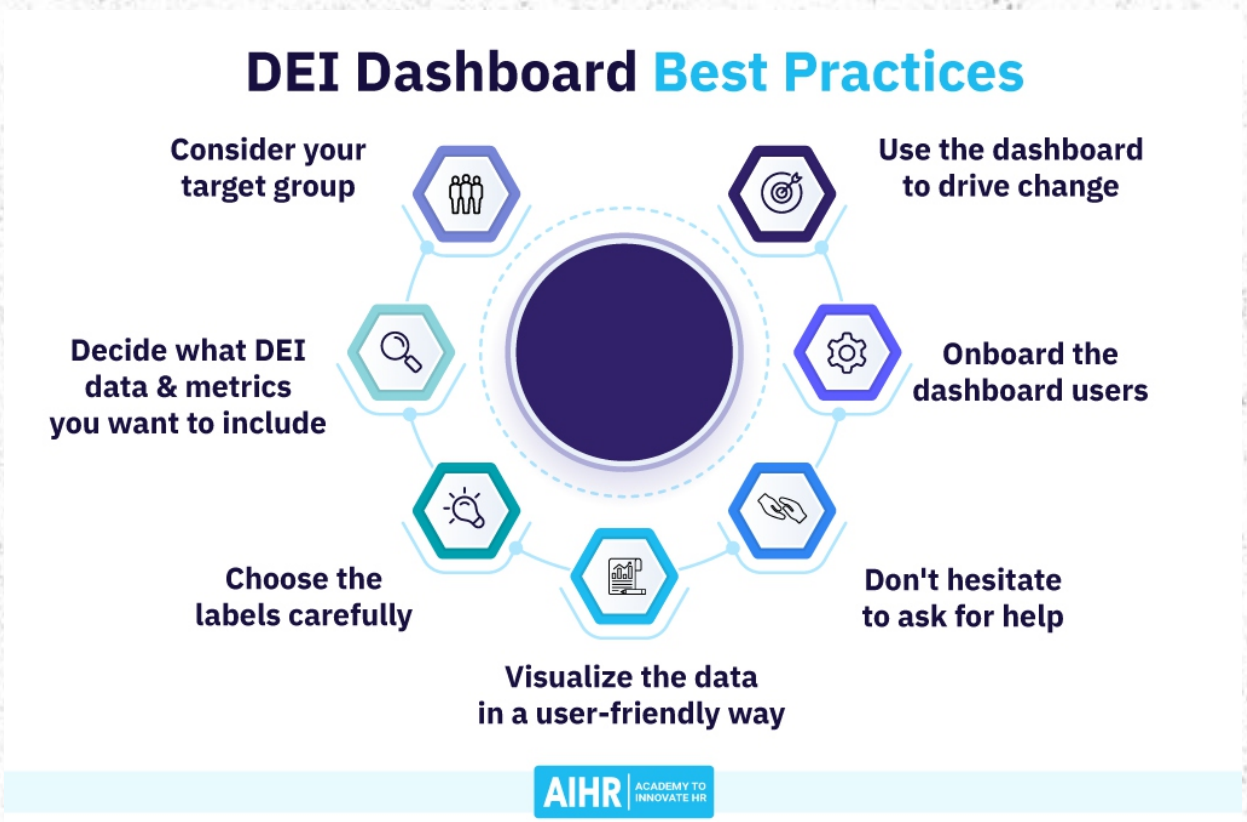


Fig 4. DEI dashboard best practices. Source: AIHR

Phased Implementation

To ensure effective and sustainable integration of Diversity, Equity, and Inclusion (DEI) within Nigeria's clean energy sector, the implementation will be carried out in three strategic phases focused on assessment, action, and accountability.

Phase	Description of Activities	Key Stakeholders	Expected Outcomes
Phase 1: Baseline & Target Setting	Conduct baseline surveys and audits of workforce, procurement, and leadership in clean energy organisations. Analyse gender, age, and diversity representation in STEM and energy roles.- Set realistic DEI targets (e.g., 10% annual increase in women in STEM/energy roles).	Ministry of Energy / Renewable Energy Agencies- Industry Associations (e.g., Nigeria Solar Energy Association), DEI consultants/researchers- Private clean energy companies	Comprehensive understanding of current DEI status.- Clear, measurable DEI targets to guide implementation.Stakeholder alignment on priorities and goals.
Phase 2: Implementation & Capacity Building	Deploy monitoring tools and dashboards for DEI metrics. Launch inclusive training and apprenticeship programs for youth and women in solar and other clean energy technologies. Integrate DEI requirements into recruitment, procurement, and HR practices.	Clean energy companies, Training institutions / technical colleges, NGOs supporting women and youth in STEM, Technology partners for dashboards	Enhanced capacity of underrepresented groups. Real-time tracking of DEI indicators. Increased participation of women and youth in clean energy roles.
Phase 3: Reporting & Accountability	Conduct annual DEI reporting and audits; share reports publicly. Integrate DEI performance into government incentives (e.g., grants, subsidies, tax breaks). Hold annual stakeholder reviews with accountability mechanisms.	Federal and state regulators (e.g., Ministry of Environment, Energy). Funding agencies/donors, Clean energy companies and industry associations. Civil society watchdogs	Transparent tracking of DEI progress. Evidence-based adjustments to programs. Accountability tied to incentives, leading to sustained improvement.

The framework is based on three interconnected pillars: Diversity, Equity, and Inclusion. It also integrates cross-cutting elements such as intersectionality (e.g., gender combined with rural/urban, disability, youth, or ethnicity) and adaptations specific to sectors (e.g., off-grid solar in Nigeria). It enables stakeholders, government (e.g., Energy Transition Office), companies (e.g., solar firms), and NGOs, to track progress systematically, attract ethical investment, and ensure Nigeria's clean energy boom benefits all. It positions the sector as a leader in just transitions.

Conclusion

Nigeria stands at a pivotal moment in its energy journey. With the clean energy sector poised to create millions of jobs globally and drive economic resilience at home, the Energy Transition Plan (ETP) offers a roadmap to achieve net-zero by 2060 while lifting 100 million Nigerians out of poverty and ensuring universal energy access. Yet, as IRENA's 2025 analysis underscores, persistent DEI gaps, women at just 32% of the global renewable workforce (dropping to 19% in leadership) and even sharper disparities in Nigeria (e.g., 8% women in STEM roles), threaten to undermine innovation, community trust, and equitable benefits.

Robust tracking and monitoring of DEI, as outlined in this policy brief's framework, is not optional; it is essential for a truly just transition. By implementing standardized metrics, regular audits, inclusive training, and accountability mechanisms, stakeholders can close representation gaps, foster belonging, and harness diverse perspectives to accelerate project success and attract ethical investment.

The recent validation of Nigeria's Just Transition Guidelines and Action Plan (JT-GAP) in 2025 signals a strong commitment to inclusive green growth, integrating gender, youth, and social protection into the energy shift. Adopting this framework will align with these priorities, positioning Nigeria as a continental leader in equitable renewables.

The path forward is clear: Policymakers, regulators, private sector leaders, and NGOs must take action now. They need to mandate reporting, incentivize diverse hiring, establish monitoring hubs, and scale inclusive programs. Immediate steps should include piloting the framework in clean energy initiatives and integrating diversity, equity, and inclusion (DEI) into energy transition plan updates. A just energy transition powered by diverse talent will not only help achieve climate goals but also build resilient communities, drive innovation, and ensure that the benefits of clean energy reach all Nigerians.