WOMEN IN WIND: A MISSING PIECE OF THE EU OFFSHORE RENEWABLE ENERGY TRANSITION
This publication was prepared by Helena Rodrigues, with contributions from Dr Antonia Leroy, Larissa Mile-Dale and Arnaud Van Dooren (WWF European Policy Office). Further advisory input was provided by Camille Maury, Michael Sicaud-Clyet and Mags Bird (WWF European Policy Office).

We’d like to thank colleagues across the WWF EU network for their support and guidance in producing this report.

**WWF**

WWF is an independent conservation organisation, with more than 36 million followers and a global network active through local leadership in over 100 countries. Our mission is to stop the degradation of the planet’s natural environment and to build a future in which people live in harmony with nature, by conserving the world’s biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption.

The European Policy Office contributes to the achievement of WWF’s global mission by leading the WWF network to shape EU policies impacting on the European and global environment. To learn more, please visit: www.wwf.eu

Design: Unit Graphics

Cover image: © Cinematographer / Shutterstock

Published in September 2023 by WWF – World Wide Fund For Nature (formerly World Wildlife Fund), Brussels, Belgium. Any reproduction in full or in part must mention the title and credit the above-mentioned publisher as the copyright owner.

© Text 2023 WWF. All rights reserved.
Climate change, driven by human behaviour, is increasingly affecting life on our planet with negative impacts on our economies and societies, and contributing to unprecedented biodiversity loss. Across sectors and regions, the vulnerability of nature and people to drastic global warming and rapid ecosystemic changes is interdependent with and driven by patterns of intersecting socioeconomic development and unsustainable activities, alongside historic and ongoing patterns of human inequity, marginalisation and governance. For the European Union (EU) to become climate neutral by 2040, its Member States must strengthen their commitments to the 2019 European Green Deal to achieve an inclusive, affordable and green energy transition. As the fastest growing renewable energy in the EU and one of the EU's most rapidly expanding maritime sectors, offshore renewable energy will play a key role in transforming the energy industry. In 2022, wind and solar energy generated a record 22.3% of the EU's electricity, surpassing nuclear (21.9%), gas (19.9%), coal (15.9%) and hydropower (10.1%). Of the currently installed 204 GW of wind capacity, 92% is onshore and 8% is offshore. However, commitments by North Sea and Baltic Member States to speed up the development of offshore wind means the sector is expected to represent approximately 27% of total wind capacity by 2030, which represents a 675% increase from 2022 levels. This would be enough to supply electricity to 122 million European homes (62% of the EU total) at 2022 consumption levels. Delivering on these impressive targets requires a high number of workers to enter the industry and the creation of skill development schemes to address the sector's increasing shortage of skilled workers. Women are not only absent in the energy workforce, they are missing from energy decisions and policy making. Presently, only four women sit in the European Council, and less than 10% of European Parliament climate and energy legislative files are led by women, despite 40% of women being Members of the European Parliament. Sidelining women from the energy transition is a huge misstep: companies with at least 30% of women engaged in high-level positions perform better at all levels. As half of all EU university graduates, women can be catalysts for change in the industry while addressing the sector's increasing shortage of skilled workers. Women are not only disproportionately disadvantaged by climate change, they remain absent from climate and energy decision-making processes. For the EU's energy transition to be truly just, it must secure fair and equitable employment for women, and ensure everyone stands to benefit from a climate-neutral economy. By embedding gender equality in all renewable energy policy forums, the EU can empower women to actively and effectively participate in the carbon-neutral transition while simultaneously addressing the interconnected social challenges we face as a global society, including the inequalities and injustices exacerbated by human-led climate change.
Gender interacts with but is different from sex, which refers to the different biological and physiological characteristics of females, males and intersex persons, such as chromosomes, hormones and reproductive organs. Gender and sex are related to but different from gender identity. Gender identity refers to a person’s deeply felt, internal and individual experience of gender, which may or may not correspond to the person’s physiology or designated sex at birth. As a social construct, gender varies from society to society and can change over time.11 In this publication, the term “women” refers to those who identify as women.

Gender equality, also known as sexual equality or equality of the sexes, is the state of equal ease of access to resources and opportunities regardless of gender, including economic participation and decision making. It is also the state of valuing different behaviours, aspirations and needs equally, regardless of gender.

If equality is the end goal, equity is the means to get there. According to the United Nations Educational, Scientific and Cultural Organization, gender equity is defined as fair treatment for men and women according to their respective needs. This may include equal treatment or different but which is considered equivalent in terms of rights, benefits, obligations and opportunities.

WHAT GENDER IMBALANCE HOLDS BACK THE EU ENERGY TRANSITION

Although transitions to low-carbon energy systems are essential for meeting global commitments to climate change mitigation, “greening” energy systems may not make them any fairer, inclusive or just.12 Socio-demographic inequalities – income, education, health and other – can persist in low-carbon systems when, during the policy and project development phases, stakeholders fail to address pre-existing inequalities or to prioritise the needs and concerns of local residents, particularly those of vulnerable groups such as women and children.

INDUSTRY

Historically, the global energy sector has been a male-dominated one, with 76% fewer women engaged in it than men.13 In the EU, wages are nearly 20% lower for women in the energy sector than for men, across all skill sets and levels of seniority, while in fossil-fuel related industries, women make up just 15% of senior roles (compared to over 20% in energy’s water, metal ore mining and chemical manufacturing divisions).14 It is not surprising, then, that a higher share of women leave the energy sector compared to men, while the opposite is true in non-energy industries.15

Globally, renewable energies have started to mark a positive shift in this trend: in 2019, women made up 32% of the total renewables workforce, significantly higher than the average 22% of women in the oil and gas sector. However, unlike other subsectors in renewables, only 21% of the wind workforce is made up of women (there is currently no disaggregated data between onshore and offshore wind),16 lagging behind male-dominated fossil fuels and failing to integrate gender diversity at all hierarchical levels.

As part of its energy transition, the EU is taking proactive steps to address gender balance: the EU’s Clean Energy Package calls on all Member States to respect, promote and consider their obligations to integrate gender equality in National Energy and Climate Plans, and to report how their implementation contributes to gender equality;17 the European Green Deal underscores that the EU can only successfully complete the energy transition if it is conducted in a fair and inclusive way;18 and the European Commission launched its Equality platform for the energy sector in 2021,19 which aims to strengthen the EU’s commitment to equality across all dimensions, notably by promoting workplaces that are more diverse and inclusive.

Despite these steps, the figures noted above demonstrate that European Green Deal policies are still falling short on achieving a level playing field for women, and have even been accused of being “gender blind”.20 It remains unclear, for example, how the Equality platform for the energy sector forum discussions will result in concrete changes to the sector.
**WOMEN IN WIND: THE MISSING PIECE OF THE EU OFFSHORE RENEWABLE ENERGY TRANSITION**

**TECH SERVICES**

**INTENSIVE HIGH-**

**KNOWLEDGE-**

**MANUFACTURING**

**IN HIGH-TECH**

**EMPLOYEES**

32.8%

**EDUCATION**

The continued lack of gender balance likely ties back to education. While women represent over 50% of university graduates and almost half of the labour force in EU Member States, they are underrepresented in Science, Technology, Engineering, and Mathematics (STEM) education and careers — in 2021, women were just 32.8% of those employed in high-tech manufacturing and knowledge-intensive high-tech services in the EU-27. Positively, various offshore renewable energy companies, such as Vestas and Siemens Gamesa, have committed to 25% of their leadership positions to be held by women by the end of 2023. Meanwhile, Ørsted is aiming for 40% women and 60% men across all corporate levels (senior director and above; people managers; all employees). Further, initiatives such as the Global Women’s Network for the Energy Transition (GWNET) have compiled career opportunities for women across the offshore renewables value chain, beyond traditional STEM backgrounds. In 2019, GWNET partnered with the Global Wind Energy Council to launch the Women in Wind Global Leadership Program, which is designed to accelerate the careers of women in the wind industry, support their pathways to leadership positions, and foster a global network of mentorship, knowledge-sharing, and empowerment. The EU must build on these private initiatives and, importantly, improve them — 25% and 40% targets still fail to achieve gender balance. Adopting cross-sectoral policies to address the diversity of gender roles and the underlying drivers of inequality in the offshore renewables sector will better empower women and help the EU achieve its gender equality objectives.

**POLITICS**

Beyond business, globally, female representation in the political sphere is lacking and the absence of women role models is even more acute in energy-related fields: a 2014 analysis of 72 countries found that women represented just 6% of ministerial positions responsible for national energy policies and programmes. This is also the case in the EU.

In June 2023, there were eight women (29%) sitting in the Energy Council meetings, which included Energy Ministers from all EU-27 countries. Further, only four women (17%) sit in the European Council, which includes all EU Prime Ministers plus the European Commission. In both cases, the European Commission was represented by women whereas the majority of Member States continue to nominate men to the high-level positions responsible for shaping the EU’s national climate and energy strategies.

As the first woman President of the European Commission, Ursula von der Leyen nominated the first woman Commissioner for Energy, Kadri Simson, and both are leading by example when it comes to breaking the glass ceiling in the EU energy policies field. However, in the European Parliament, all Committees leading or providing opinions on energy files are still chaired by men. Further, key political files such as the Parliament’s own-initiative procedures on the EU Strategy for offshore renewable energy sources and the REPowerEU plan were also led by men, despite the European Parliament Committee on Industry, Research and Energy — and the European Parliament as a whole — being comprised of 40% women, on average. This limits how women can actively contribute to the energy transition and is a huge misstep for policies that aim to set the standards for speeding up the deployment of renewable energy in Europe.

Supporting the role of women in the EU’s energy transition is not straightforward as it requires leaders to challenge cultural and social norms. WWF is calling on the EU and its Member States to amplify the Equality platform for the energy sector and to actively strengthen the visibility of the diverse roles women play, both currently and in the future, supporting women to become agents of socioeconomic transformation in their communities.

**Figure 1: Women employed in global energy sectors**

<table>
<thead>
<tr>
<th>Sector</th>
<th>% of Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil &amp; Gas</td>
<td>25%</td>
</tr>
<tr>
<td>Renewable Energy</td>
<td>32.8%</td>
</tr>
<tr>
<td>Wind Industry</td>
<td>40%</td>
</tr>
</tbody>
</table>

**Figure 2: Women leadership in EU energy policy**

<table>
<thead>
<tr>
<th>Country</th>
<th>% of Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU Energy Council</td>
<td>29%</td>
</tr>
<tr>
<td>European Parliament ENVI</td>
<td>17%</td>
</tr>
<tr>
<td>European Parliament ITRE</td>
<td>0%</td>
</tr>
</tbody>
</table>

NB: Each circle represents 10%; for every ten percentage points, one circle is filled (concrete figures are mentioned throughout the text)
WOMEN IN WIND: THE MISSING PIECE OF THE EU OFFSHORE RENEWABLE ENERGY TRANSITION

Changes in Emissions Trading System (EU ETS)
Revision of the Renewable Energy Directive (RED II-IV)
Revision of the Energy Efficiency Directive
Regulation setting new CO₂ emission standards for cars and vans
Regulation on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry (LULUCF)
Revision of the Energy Taxation Directive
Carbon border adjustment mechanism (CBAM)
The opinion (INI report) on a European Strategy for Hydrogen
The opinion (INI report) on the EU Strategy for offshore renewable energy sources

Review of the Effort Sharing Regulation (ESR)

List of Renewable Energy files led by women in the European Parliament between 2019-2023

CLOSING THE GENDER GAPS

From solely an economic standpoint, the case for gender parity is clear: research demonstrates that women bring new perspectives to their workplaces which help improve collaboration, while increasing the number of qualified women in an organisation’s leadership yields better performance overall. A 30% “critical mass” threshold of women as executive officers and board members has been found to have a positive effect on company performance across all sectors.

Furthermore, teams with inclusive leaders are 17% more likely to report that they are high performing and 20% more likely to say they make high-quality decisions. The Intergovernmental Panel on Climate Change has also found that climate, energy and environmental policy packages that are carefully designed and implemented with due consideration for equity, gender, equality and justice better support multi-scale policies and activities, and help build consensus for climate action among diverse stakeholder groups.

Yet, gender inequality is most evident at decision-making levels: across the world women are under-represented on company boards and senior management positions, as well as in policymaking and governance. Worryingly, these discrepancies are not experienced similarly by both genders – 75% of women see it, whereas only 40% of men do.

Given that men occupy the majority of leadership positions, it is urgent that a greater understanding of the wind industry’s gender gap is equally understood by all, so that appropriate measures can be implemented to secure gender parity.

The EU’s energy transition can support both a more diverse energy workforce and increase levels of employment across Member States, but proactive efforts to improve gender diversity are required. Because the value chain of renewable energy is more labour intensive than that of fossil fuels (i.e. all non-fossil fuel technologies create more jobs per unit of energy than coal and natural gas), the transition to a fossil-free economy promises net employment gains. In short, this means that new jobs in renewables more than make up for the loss in coal and gas extraction employment, and other related sectors. For example, in Poland, one of the EU’s primary coal producers, the shift from coal to renewables is expected to create 34,000 jobs (assuming proper levels of investment in economic diversification) by 2030. However, because neither companies nor governments make gender-disaggregated data publicly available, it is nearly impossible to understand how women fare in this transition. Ensuring women are engaged in these emerging energy sector opportunities under fair and equitable working conditions is imperative for the success of both EU climate and gender targets.

Understanding the current state-of-play of gender balance across all energy sectors is the first step to design policies that answer the particular challenges that women face to enter and remain in the industry. To overcome these data gaps, the EU and its Member States should establish a cross-sectoral framework for monitoring and reporting on workforce performance, inclusivity and direct outputs by gender. Once data is available, it will be possible to establish baseline metrics of gender representation and monitor progress towards equality.

Figure 3: Gender disparity in the European Parliament’s energy and climate legislative processes

Figure 4: Perceived gender disparity

% of women in the renewable energy industry that perceive gender disparities

% of men in the industry that perceive gender disparities

NB: Each circle represents 10%; for every ten percentage points, one circle is filled (concrete figures are mentioned throughout the text)
The next step in gender-responsive actions is to address barriers to entering and remaining in the workforce. National governments and universities should tailor educational and training programmes to adopt curricula that are better suited to women’s needs and strengthen mentoring opportunities as enabling conditions for more women to enter the energy industry. In addition, companies should invest in jobs that have clear career progression and equal pay to retain women in the industry. EU and national investment in “soft” infrastructure such as education, healthcare, childcare facilities and other social services can help address the double burden women still face of balancing work and family life, thus supporting women’s long-term presence in the workforce.

Overcoming the glass ceiling women face requires them to have a seat at the table in both EU institutions and national authorities. The EU should lead by example and establish clear equity, diversity and inclusion objectives in its policymaking. Further, when using public funds for the acceleration of clean energy in Europe,1 decision makers should adopt a gender-responsive approach that actively tries to ameliorate gender disparities in the renewables sector. This can be achieved by, for example, factoring in socioeconomic considerations in the list of non-price criteria used to assess bids for offshore wind farms, and requiring greater participation of women in the participatory process for offshore wind farm site-selection and the community compensation schemes funded by developers.

As with all blue sectors, effective stakeholder consultation during the development of offshore wind farms can contribute to increased public awareness about job opportunities and lower opposition to renewable energy technologies. However, ensuring these benefits are equally shared by all requires enhancing the position of women, minority groups, and other disadvantaged or marginalized members of society in such consultations and subsequent negotiations. National governments must ensure that women’s associations and groups are always invited to participate in such processes; they must also conduct social impact assessments that highlight how projects can better support the transfer of skills to the offshore wind sector and empower women in the EU’s energy transition.

The global energy transition requires substantial amounts of materials to deploy renewable technologies. However, it is important to note that the transition to renewables is estimated to require vastly less materials and mining than the existing fossil fuel energy system – more than 500 times less than the global fossil fuel industry mines each year.2 In addition, with new technology, circular economy models and recycling, demand for critical minerals can be reduced by at least 58% between 2022 and 2050.3

Even so, securing a nature-friendly deployment of renewable energies requires improvements at all stages of the infrastructure life cycle. This must include a strategic approach to materials procurement that gives due consideration to the key role women can play in a just energy transformation.

Currently, the extraction of rare earth elements (REEs) is often associated with the release of highly toxic chemicals into groundwater or waterways4 and human rights abuses.5 Across mines around the world, labourers report being overworked, underpaid and at higher risk of severe health problems due to mining-based pollution.6 However, these factors don’t impact all stakeholders along the REE value chain equally; research has shown that men are more likely to reap benefits from mining operations through employment, higher income and compensation,7 while women are more likely to bear the harms of extractive industries, such as gender-based violence and discrimination, without receiving benefits such as training opportunities and better-paid jobs.8 In addition, women remain absent from decision-making processes in the mining industry and often do not receive the compensation payments that result from community negotiations with mining operators, nor do they have access to ownership rights that would allow them to exploit minerals from underneath a property. This poor distribution of benefits exacerbates gender inequalities between men and women in the renewable energy supply chain.9

As women become engaged in delivering energy solutions, they take on more active roles in their communities and, consequently, facilitate a gradual shift in the social and cultural norms that previously acted as barriers to their agency.10 Addressing gender disparity in the REEs mining sector can therefore contribute to more equitable and inclusive management of natural resources, key components of a socially fair climate-neutral society.

As a major stakeholder in the global REEs market given the projected 65% growth in offshore wind energy by 2050 (compared with 2022 levels), the EU and its Member States have a non-negligible role in securing resources derived from sources that are both sustainable and fair. EU and national policymakers, as well as industry stakeholders, should urgently develop fair trade standards for REEs imported to the EU. Further, women should be involved as co-designers, co-implementers and co-evaluators of mining projects, thus ensuring performance is measured against a broad set of socioeconomic indicators. Finally, an “inclusive energy infrastructure age” is increasingly decommissioned, opportunities for women to participate in waste management and recycling of REEs should be highlighted and supported by national governments.

The REEs industry and renewable energy partners are standing at a crossroads: as the industry expands, to not repeat the environmental and social mistakes of the mining industry, they must apply the principles for a socially fair and just energy transformation,11 promoting synergies between social and climate goals in EU policies and plans.
WAY FORWARD

Improving gender balance in the EU’s rapidly expanding offshore renewable energy sector is crucial to ensure everyone can benefit equally from the energy transition and to attract the additional talent urgently needed to scale up activities. This is a key element of the EU achieving its European Green Deal and Gender Equality Strategy 2020-2025 targets, as well as fulfilling its commitments to the United Nations Sustainable Development Goal for gender equality. To succeed, both bottom-up and top-down approaches are needed.

From the community level to top-tier government positions, the more women break the glass ceiling, the easier it is for others to visualise themselves partaking in the benefits of the energy transition, and pursuing educational opportunities aligned with these careers in politics as much as industry.

Finally, by embedding gender equality in all renewable energy policy forums, the EU can empower women to actively and effectively participate in the carbon-neutral transition while simultaneously addressing the interconnected social challenges we face as a global society, including the inequalities and injustices exacerbated by human-led climate change. Proactively raising the roles and profiles of women in the global fight against the climate crisis would set the EU apart, providing a positive example for countries all over the world to follow.

Ultimately, the shift to a clean, renewables-based energy system should affirm the social values we want for our future society, including the fundamental human right of gender equality.

WWF calls on the EU, national governments, companies and civil society to:

- Ensure women have an equal seat at the table in EU institutions and national authorities by, for example, establishing clear equity, diversity and inclusion targets for energy policymaking at both the EU and Member State levels.

- Implement a common framework for collecting gender-disaggregated data, and establish standards for monitoring and publicly reporting on diversity and inclusion in the energy sector.

- Promote the involvement of women in STEM by adapting curricula in technical and non-technical subjects, and establishing mentoring opportunities for women looking to enter in the renewable energy sector, which mostly relies on technical workers.

- Mandate gender-balanced stakeholder participation in all renewable energy project consultations, including site selection, non-price criteria in auctions and the development of community compensation schemes offered by developers.

- Challenge cultural and social norms by strengthening visibility of the diverse roles women already play in the energy sector and can play in the future, and help women become agents of economic and social change in their communities by empowering them to assume decision-making positions.

- Develop fair trade standards for rare earth elements imported to the EU while addressing how the poor distribution of benefits exacerbates gender inequalities between men and women in the renewable energy supply chain.
REFERENCES


5 WWF, 2023, State of play and projections for offshore and onshore wind energy in the EU.

6 UN Climate Change, 2023, Five Reasons Why offshore and onshore wind energy in the EU.


15 Ibid


29 Wei, M., et al., 2020, Putting renewables and energy efficiency to work: How many jobs can the clean energy industry generate in the US? Retrieved from https://ecompass.repe.org/article/successes/v_3a38_3ay_3a2010_3ai_3a2_3ap_3a919-931.html


34 Simas et al., 2022, The Future is Circular – Circular Economy and Critical Minerals for the Green Transition, SINTFEP https://sintef.brage.unit.no/sintef-xmil/handle/11250/9392049


41 WWF, 2019, Seven Golden Rules for open and inclusive climate planning at the regional level. Retrieved from https://wwf.eu/assets/papers/02153-z

42 WWF, 2019, Seven Golden Rules for open and inclusive climate planning at the regional level. Retrieved from https://wwf.eu/assets/papers/02153-z

43 WWF, 2019, Seven Golden Rules for open and inclusive climate planning at the regional level. Retrieved from https://wwf.eu/assets/papers/02153-z
OUR MISSION IS TO STOP THE DEGRADATION OF THE PLANET’S NATURAL ENVIRONMENT AND TO BUILD A FUTURE IN WHICH PEOPLE LIVE IN HARMONY WITH NATURE