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# COBENEFITS IMPULSE

October 2021

## Green employment for women

Towards gender-inclusive renewable energy careers





## Imprint

This COBENEFITS Impulse has been realised in the context of the project “Mobilising the Co-Benefits of Climate Change Mitigation through Capacity Building among Public Policy Institutions” (COBENEFITS). This project is part of the International Climate Initiative (IKI). The Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety (BMU) supports this initiative on the basis of a decision adopted by the German Bundestag. The COBENEFITS project is coordinated by the Institute for Advanced Sustainability Studies (IASS, lead) in partnership with the Renewables Academy (RENAC), the Independent Institute for Environmental Issues (UfU), and International Energy Transition GmbH (IET).

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**Authors:** Arunima Hakhu, Gender and Youth Inclusion, CGIAR Research Program on Water, Land and Ecosystems, and Sebastian Helgenberger, Institute for Advanced Sustainability Studies

**Editors:** Laura Nagel and Sebastian Helgenberger – IASS

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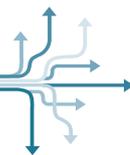
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# 1. Energy transitions as opportunities for pathbreaking in energy sector careers

For too long, professional careers in the energy sector have been male-dominated. Until recently, women accounted for a mere 1 per cent of top management positions and 6 per cent of technical staff in the fossil energy sector globally (Baruah, 2017). In comparison, the renewable energy sector has seen an increase in women employment over the past decade. However, men still outnumber women in the sector’s key functions in technical, managerial and policymaking positions (Vangchuay and Niklaus, 2021; IRENA, 2019).

Nevertheless, the renewables sector holds out high hopes. Renewable energy is increasingly promoted as an exemplary means of tackling climate change while simultaneously facilitating socioeconomic co-benefits and societal ownership in climate action. Vietnam’s National Determined Contribution exemplifies this exalted ambition:

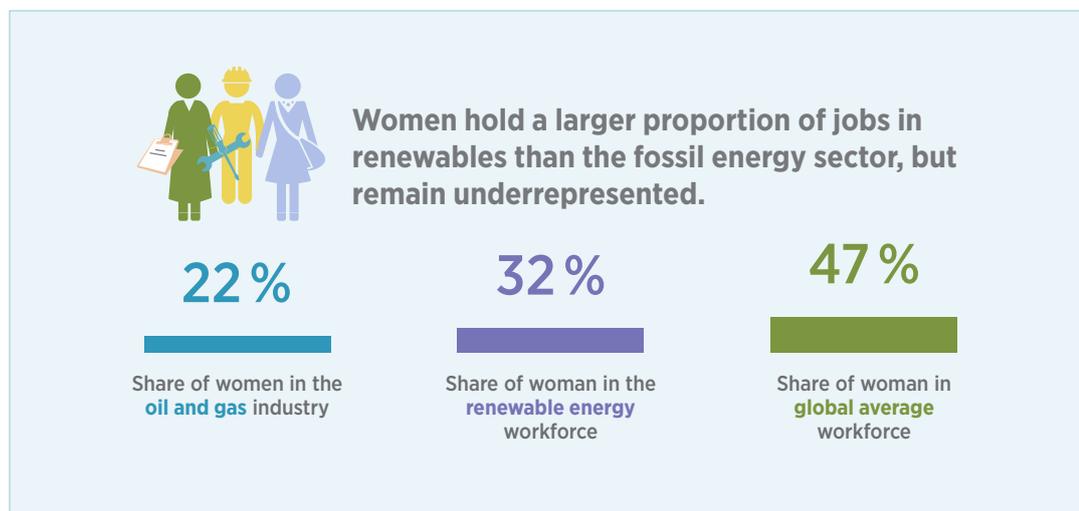
The energy mitigation measures proposed in this [National Determined Contribution] are also expected to contribute to socio-economic development by supporting the development of new industries, creating favourable conditions for investment, strengthening assembly and maintenance services, etc. Significantly, developing mitigation technologies in the power

sector, including renewable energies, will lead to more green jobs, higher incomes and greater economic prosperity.

Nguyen and Helgenberger (2020): Vietnam’s Updated Climate Goals Aim at Maximizing the Co-Benefits of Climate Action

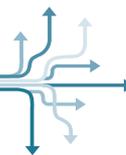
Even so, countries will fail to achieve the societal traction necessary for energy transitions if women remain unable to access such co-benefits in the same ways as men. The sustained masculinities—the prevalence of a greater proportion of men in the energy sector, especially in positions of power, and the ways in which policies on energy are framed (Connell 2014)—raise ethical issues related to gender justice, universal energy access and inclusiveness.

By neglecting women, countries not only fail to benefit from their economic potential as a substantial proportion of the overall workforce, but also risk inadvertently perpetuating exclusionary traditional gender roles. Even though energy transitions towards renewables result in emerging new career paths in the sector, deliberate policy and corporate interventions are required to eliminate the glass ceiling that still pervades a male-dominated energy sector (IEA and CEEW, 2019; IRENA, 2019; ARE and ENERGIA, 2017).



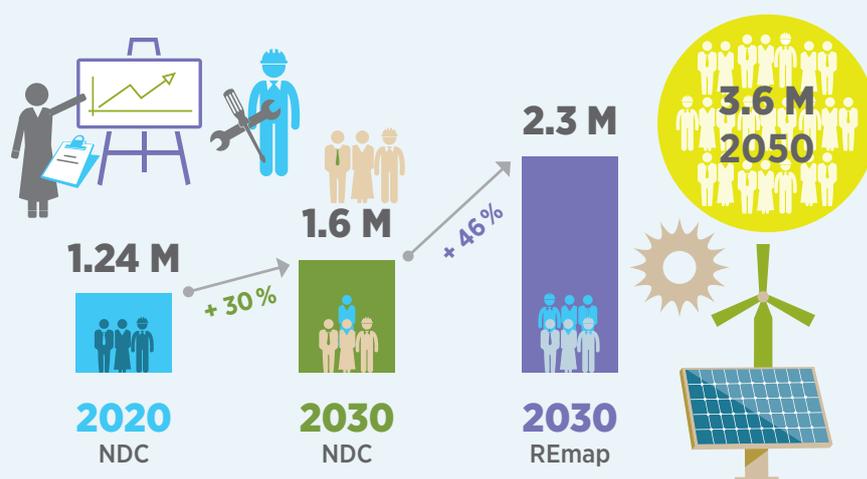
**Figure 1:** Share of female workers in the energy sector (fossil and renewable) and compared to global average

Source: Vangchuay & Niklaus 2021, IRENA 2019



## 2. Employment opportunities and gender inequality in the renewable energy sector

India can almost double the number of jobs through the power sector by **2030** by following an ambitious decarbonisation pathway.



**NDC:** Scenario that highlights the strategies necessary for achieving the targets laid out in India's international climate commitment (NDC)

**REmap:** High-ambition renewable energy roadmap for India by the International Renewable Energy Agency (IRENA)

**Figure 2:**  
Employment co-benefits  
of decarbonising the  
power sector in India

Source: IASS, UfU  
and TERI, 2020.

The International Renewable Energy Agency (IRENA) estimates that the number of worldwide jobs directly or indirectly related to the renewable energy sector passed 11.5 million in 2019, doubling its initial assessment of 5.7 million jobs in 2012 (IRENA, 2020 and 2013). The employment prospects for renewables are positive, not least because renewable energy generation tends to be more work-intensive than in the fossil energy sector (IASS, UfU and GreenID, 2020; IASS, UfU and TERI, 2020).

In Vietnam, for example, an estimated 1.94 million job years could be created in the country by transitioning the power sector towards larger shares of renewable energy between 2015 and 2030. Over that 15-year period, solar and wind would create 3.5 jobs and 2.8 jobs, respectively, per average installed MW capacity, whereas coal would create only 1.4 jobs (see Figure 3). Similar effects are predicted for other Asian countries. For

example, India can significantly increase employment through its power sector by increasing the share of renewable energy. The renewable energy sector is poised to become the largest employer in the future Indian power sector. By 2050 the renewable energy sector could potentially employ more than 3.2 million people – five times more than the entire Indian fossil-fuel sector employs today. This could increase the total number of jobs in India's power sector to 3.6 million by 2050 (IASS, UfU and TERI, 2020, see Figure 2). Nevertheless, the gender-distribution of employment opportunities, and how women are to participate in these opportunities, remain open questions.

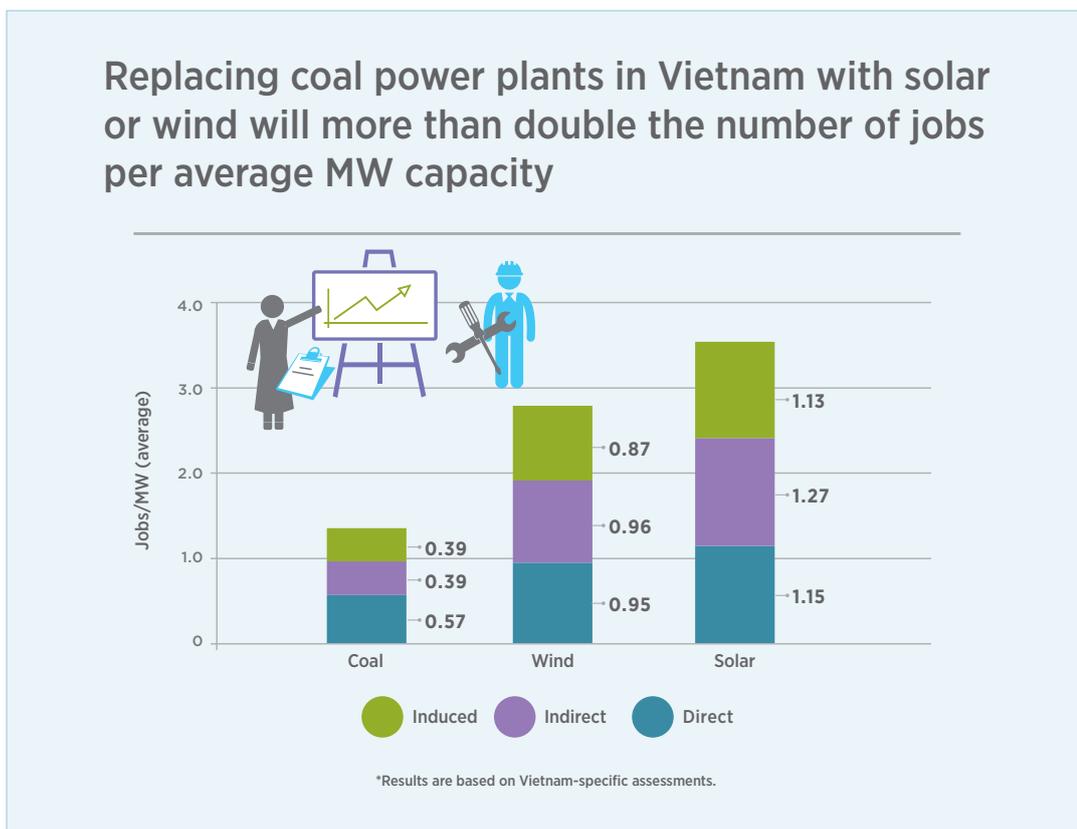
Women are estimated to hold 32 per cent of jobs in the renewable energy sector (IRENA, 2019). While this exceeds the 22 per cent across the oil and gas sectors, both are far below the 47 per cent average in the global

workforce estimated for 2019 (Vangchuay and Niklaus, 2021; IRENA, 2019, cf. Figure 1). Although women currently account for more than 50 per cent of science, technology, engineering and mathematics (STEM) university students in 144 countries surveyed, they occupy only 28 per cent of STEM jobs (such as facility operations and maintenance; equipment manufacturing, construction and installation project planning) in the renewable energy sector (ibid.). The share of women in non-STEM technical careers, such as finance, statistics and information technology, is slightly greater, at 35 per cent, but the bulk of these positions in the energy sector encompass administrative, non-leadership roles (ibid.).

Gender imbalance not only fails to tap economic potential, but also has implications for gender justice, equity, and inclusiveness. Given the lower participation of women in STEM and administrative jobs, neglecting to skill a female workforce in the rapidly growing renewable energy industry can be a disadvantage, particularly because the industry demands a greater share of high-skilled jobs than the fossil energy industry (IASS, UfU and

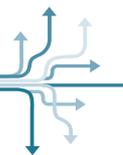
GreenID, 2020). There is also a risk that qualified maintenance will be neglected if a female workforce is not fully mobilized, such as when project developers attempt to reduce costs by focusing on the installation of renewable energy but reduce budgets for the integration of female workers (IASS, UfU and TERI, 2020).

At an organizational level, gender diversity tends to be associated with greater creativity, innovation and openness (Vangchuay and Niklaus, 2021). Abouzahr et al. (2018) also provide the example of women-owned start-ups, which generate “seventy-eight cents for every \$1 invested versus thirty-one cents from their male counterparts”. In view of the urgent need for climate action and decarbonization of the energy sector, a study by CRB (2012) found that “companies are more likely to increase investment in renewable energy and to decrease carbon emissions throughout their value chain when there are more women on the board of directors”. This conclusion may be highly context-dependent, but it is an interesting connection between gender diversity at top leadership levels and its impact on the ways that institutions function.



**Figure 3:** Employment co-benefits of decarbonising the power sector in Vietnam

Source: IASS, UfU and GreenID, 2020.



### 3. Overcoming barriers to gender-inclusive careers in the energy sector



**Figure 4:** Facilitating gender-inclusive careers in the energy sector

In order to facilitate gender-inclusive careers in the renewable energy industry and realize the associated social and economic opportunities, several action areas can no longer be underplayed: (i) awareness-raising for gender-inclusive careers; (ii) empowerment and skilling; (iii) recruitment; (iv) working environment; and (v) mentoring and role models.

**Awareness-raising and career guidance:** A gender-sensitive way of portraying and promoting education pathways (degrees, curricula, technical certifications) and career paths, including fresh formats for hands-on career guidance activities (such as career guidance in schools, internships and visiting programmes) can reduce existing inequalities. It can ensure that the energy sector offers attractive careers paths for both women and men and unleashes the full human potential for advancing the industry (IASS, UfU and TERI, 2020).

**Empowerment and skilling:** In and of itself, skilling increases women's confidence to participate in workspaces (Power for All, 2018; Barefoot College, 2017). Contracted local self-help groups represent a community-centred way to provide operational and maintenance skills to women involved in renewable energy projects (Hakhu, 2020). Harnessing social networks can also increase employment continuity by creating and sustaining demand for local energy solutions (Hakhu, 2020; Chatterjee and Ghosh, 2012) and can provide additional co-benefits such as increasing study hours for schoolchildren (Kumar et al., 2019; Barefoot College, 2017; Venkatesh, 2010).

**Recruitment:** Particularly among senior positions and STEM technical positions, recruitment remains biased in favour of men. Given that gender imbalance at the leadership level will further limit opportunities for recruiting more women, human resource departments and recruiters need to invest in gender-inclusive recruitment processes by diversifying their shortlisting and selection panels and deliberately debunking antiquated leadership myths (Vangchuay and Niklaus, 2021; GWNNet, 2020).

**Working environment:** Addressing exclusionary practices in the energy industry, such as the lack of day-care facilities for working parents, inflexible working hours or unpaid maternity and paternity leave, is essential for facilitating gender-inclusive employment opportunities in the renewable energy sector. Female participation in shaping an enabling working environment, particularly for women, is an essential initial step in overcoming business-as-usual practices and challenging underlying power relations, masculinities and exclusionary value systems (Hultman and Anshelm, 2017; Connell, 2014).

**Mentoring and role models:** Younger generations of women are encouraged to take on more leadership responsibilities when they observe and learn from the successes of female role models, such as through mentoring programmes (IEA and CEEW, 2019; IRENA, 2019; ARE and ENERGIA, 2017). Leadership experience enhances the sociopolitical status of women as they earn more—income becomes an entry point to challenging sociocultural norms within and outside of their households and thus contributes to gender-inclusiveness beyond the sphere of labour economics (ARE and ENERGIA, 2017; Jyothi, 2016).

## 4. The bigger picture: Gender inclusiveness and social sustainability of energy transitions

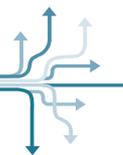
Given that women are still underrepresented in the energy industry, the ongoing energy transitions in many countries offer huge opportunities to overcome outdated career patterns and make energy careers an option for everyone. The opportunities go beyond promoting women and gender-inclusiveness—they make important contributions to the Sustainable Development Goals of the United Nation’s 2030 Agenda and to the social sustainability of energy transitions:

The Social Sustainability of a policy intervention, project development or investment allows for continuity and long-term perspective by identifying and harnessing social opportunities and by preventing and mitigating social conflicts and community unrest. Social sustainability is facilitated through prioritizing the well-being of people and communities for current and future generations and by pursuing inclusivity and broad political and economic ownership in the development process and its results.

Although inclusivity and ownership are essential aspects of SDG 8 [Decent Work and Economic Growth] in relation to securing decent working conditions, the push for economic growth has been criticized for its “weak underpinning of gender and labour rights”, with critics suggesting that a “gender-inclusive energy transition will require, at the very least, indicators which measure progress beyond GDP” (Vangchuay and Niklaus, 2021). More studies are emerging, on the status and progress of gender-inclusiveness in the renewable energy workforce and related supply chains. But the lack of country-specific data and measurements of the issue remain obstacles to supporting the necessary adjustments in Asia and elsewhere.

Mbungu and Helgenberger, 2021





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### Mobilising the Co-Benefits of Climate Change Mitigation through Capacity Building among Public Policy Institutions

COBENEFITS works with national authorities and expert organisations in countries across the globe such as Germany, India, Kenya, Mexico, South Africa, Vietnam, and Turkey to quantify and unlock the social and economic co-benefits of early climate action in these countries. With a focus on renewable energy COBENEFITS supports efforts for enhanced NDCs with the ambition to deliver on the Paris Agreement and the 2030 Agenda on Sustainable Development (SDGs). COBENEFITS facilitates capacity building and cross-country learning among policymakers, expert organisations, CSOs and the private sector through a set of connected measures: Country-specific socio-economic assessments, an international COBENEFITS training programme, policy dialogues and briefings on enabling political environments and overcoming barriers to maximise co-benefits of renewable energy and climate action for people, communities and businesses.

### COBENEFITS Impulse October 2021

## Contact

Sebastian Helgenberger, Institute for Advanced Sustainability Studies,  
sebastian.helgenberger@iass-potsdam.de

Arunima Hakhu, CGIAR Gender Transformative Approaches,  
A.Hakhu@cgiar.org

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