



GWNET

Global Women's Network
for the Energy Transition

Women for Sustainable Energy

Strategies to Foster Women's Talent
for Transformational Change



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About the Global Women’s Network for the Energy Transition (GWNET)

GWNET aims to advance the global energy transition by empowering women in energy through interdisciplinary networking, advocacy, training, coaching and mentoring. GWNET seeks to address the current gender imbalances in the energy sector and to promote gender-sensitive action around the energy transition in all parts of the world.

GWNET’s work focuses on:

- **Networking:** facilitating connections among women working in the fields of renewable energy and energy efficiency to advance the energy transition, through events and the Women in Energy Expert Platform.
- **Advocacy:** generating and disseminating information on the role of women in the energy transition as well as organising conferences, seminars, and workshops which foster discussions and promote gender-sensitive action around the energy transition.
- **Mentoring:** leading the development of several regional and global women mentoring programmes as well as the matchmaking of mentors and mentees within the sustainable energy sector.

More information is available at <https://www.globalwomensnet.org/>.



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Foreword



We at the Global Women's Network for the Energy Transition (GWNET) believe that energy transitions – as they are unfolding in many places – open up new opportunities for employment, social justice and well-being of people in harmony with the natural environment.

Energy transitions are driven by political will and innovation; technological and social innovation that takes as a point of departure the actual situation in a given region, nation, municipality, company or household.

Women want and need to contribute fully to the transformational change necessary to implement our common blueprint for sustainable development, the 2030 Agenda, and to stabilise the global climate at below 1.5 degree Celsius of warming in line with the Paris agreement on climate change.

The present study which is mainly focused on corporate settings and calling for further exploration of other dimensions of sustainable energy shows impressively that there are many ways to overcome the obstacles that currently prevent women from contributing fully to sustainable energy.

GWNET hopes that the study will strengthen the resolve and passion of women already engaged in sustainable energy. And that it will trigger processes and decisions – collective and individual – that will enable women everywhere to work in sustainable energy on an equal footing with men in order to bring about carbon-neutrality at all levels, and to do so swiftly.

Dr Irene Giner-Reichl
GWNET President

Executive Summary

Energy transitions are underway globally and locally – guided by the threefold objective of SDG 7 to provide universal access to modern energy services, to double the uptake of renewables and to increase the efficiency improvement rates. Energy transitions have been initiated at national and sub-national levels, in the private sector, in large corporatised businesses just as much as in small scale community ventures, and at the household level.

A sustainable energy sector is emerging and projected to grow significantly, from a current 11 million to 42 million employees in 2050. For the energy transitions to be scaled up and accelerated as required to meet agreed climate goals and to overcome extreme poverty, sustainable energy needs to harness talent in all its forms and foster innovation across a vast array of skills, applications and specialisations.

The global energy transition – in addition to changing energy systems – offers a chance for deep societal transformation; it is an opportunity to transition to a more inclusive workforce and to societies that leave no one behind.

This study examines

- how well women are currently integrated into the corporate sustainable energy sector;
- which obstacles women encounter; and
- what recommendations – building on existing experiences and emerging best-practice – can be put forward to promote women’s participation on a par with men’s in sustainable energy.

As the study seeks to answer the question “*What can we do to increase women’s employment in sustainable energy?*” it initially looks at women’s employment in particular in corporate structures. This should not be construed as to belittle the countless examples of women moving with courage and vigour towards greater sustainability as they seek to achieve access to modern energy services in developing countries’ contexts, often leading their families and their communities along the way. More light needs to be shed on how to fully unleash women’s potential in the context of providing access to modern energy services to the currently non-served populations of approximately 840 million (for power) and 2.9 billion (for modern cooking facilities) in the future. The study also does not examine the situation of women entrepreneurs, be it in the formal or informal sector. To do them justice, clearly more research is needed.

Given significant evidence that the inclusion of women in leadership roles on corporate boards and executive levels is good for the bottom line – increasing company profitability, decreasing risk – AND that it enhances companies’ engagement with sustainability, the persistence of underrepresentation and undervaluation of women in sustainable energy companies is puzzling. This study makes comprehensive recommendations to better the situation.

The **Introduction chapter** sketches in a few broad strokes the **existing situation** regarding women’s participation in energy. Currently, far from being gender-balanced, with maximum estimates of only 22 % of women in the traditional energy sector and 32 % in the renewable energy workforce and with women traditionally underrepresented in STEM (science, technology, engineering and mathematics) disciplines, there is change afoot: sustainable energy attracts younger and often value-oriented employees; it is still emerging and therefore has the potential of creating structures and processes that are more inclusive and innovation-friendly than more established sectors which tend to be set in their ways. Energy transitions at scale require more than just switching fuels; they trigger deep change in patterns of consumption and production. The study advocates for leveraging this potential of sustainable energy to make societies more inclusive and just. **Policy goals for energy transitions** have been formulated in several countries; yet, the study finds only rare examples – e.g. by Kenya and ECOWAS – of public sector **gender or diversity policies** in the sustainable energy context.

Chapter 2 gathers convincing evidence of the **value of diversity**, as presented in international studies both from major consultancies or institutions such as the World Bank or the World Economic Forum. Benefits for companies are seen to range from increased profitability and sustainability concerns to decreased risk and environmental liability. Also the macro-economic case for gender parity is convincing. The findings from various independent sources are then contrasted with evidence of persisting experiences of **resistance to gender equality in the workplace – nourished by unconscious bias, outdated notions of leadership, lack of role-models and vested interests**. This resistance leads to significant attrition as women enter companies and try to move upwards: in industry after industry women are being left behind systematically when it comes to performance reviews and promotions resulting in female participation percentages of half or less at C-level than what they were at entry level. This resistance is systemic and the burden of change cannot be placed on individual women.

Chapter 3 takes a more in-depth look at **different business models, careers and diverse skills** needed in the energy transition – ranging from civil engineering to communication, from teaching to entrepreneurship, from marketing to science. The variety of occupations and the non-linear pathways characteristic of many careers in the nascent sustainable energy sector reflect the need to attract greater skills diversity and should send encouraging signals to women interested in these various lines of work.

In **Chapter 4**, in order to investigate ways to increase women's engagement specifically in sustainable energy, the study canvassed existing **literature and interviews** with 34 women and men from 14 countries across North America, South America, Oceania, Europe, Asia, Africa and the Middle East, who are currently working in the sustainable energy field. The authors asked them about their life journey, their experiences of barriers in the sector and what they would recommend to increase women's participation in sustainable energy. Respondents reflected that – often – the rapid development of the sector has drawn people from the conventional energy sector who bring with them a “boys club” culture that tends to be unfavourable to women as employees and their life journey, and difficult for families in general. The anecdotal evidence from the interviews is put in relation to a wealth of existing more general gender study insights and processed through an analytical lens – the so-called Structural Environmental Analysis, a tool initially developed by USAID.

The study in **Chapter 5** then lays out a rich and detailed set of **strategies** – underpinned by **selected good practice examples** – with a view to inspire women's equal inclusion in the sustainable energy workforce.

These strategies include:

- establishing and implementing quotas;
- attracting more women and girls to STEM;
- designing inclusive recruitment practices;
- strategies for an inclusive workplace;
- bringing more women into senior decision-making roles;
- building increased transparency and accountability;
- utilizing existing resources and toolkits; and
- supporting coalitions that aim at elevating the sector's inclusiveness.

Before presenting the final recommendations, **Chapter 6** summarises the **opportunities offered by sustainable energy** as a young sector where bad habits have not yet consolidated and which attracts environmentally conscious and value-driven workforce members. It is a sector that depends on innovation and must make the best use of a wide array of skills to overcome talent shortage and stay vibrant. Hence – in the context of profound energy transformations – the sustainable energy sector could well open up avenues towards more inclusive business practices resulting in more flexible work-places which are good for employees, families and communities and nurture more productive, innovative and happier work forces.

The study is clear on the fact that transformative change is the responsibility of the most senior person in the workplace and necessitates that objectives and initiatives are monitored and reported to the Board or organisational leaders as a matter of priority. Commitments of time, resources and personnel by Boards and organisational leaders are essential to drive and lead the change to achieve gender inclusive workplaces. Finally, coalitions between governments, industry and women's networks and associations and international organisations such as the UN and ILO must work together to ensure that a multi-level structural transformation is achieved.

The concluding **recommendations** in **Chapter 7** look at what can be done **to support women already engaged in sustainable energy** and what can be done **to make the sustainable energy sector as a whole more inclusive. Targeted special messages** suggesting concrete activities are addressed to individuals (**you and me**), **business and educational entities, governments, intergovernmental bodies and NGOs**. With this treasure trove drawn from studies and distilled from examples of what has been tried and tested, the study will be a good tool for policy makers and practitioners alike who want to accelerate an inclusive and far-reaching energy transition.

1 Introduction

1.1 Gender in the Sustainable Energy Sector

The energy sector is traditionally a fossil fuel-based centralised system, where men and women occupy roles divided along gender lines and participation favours men. Literature and empirical evidence vary, reporting that, ‘women account for no more than 14% of the workforce’ within the renewable energy (RE) sector and only 8% across the conventional energy sector.¹ The most optimistic recent scenario of women’s participation in renewable energy is 32% according to IRENA’s recent gender survey.² The variations are attributed to the different scopes and methodologies of the studies.

With the rapid emergence and future trajectory of renewable energy technologies and sustainable energy systems, the gender imbalance is naturally carried over. This ‘hangover’ legacy is especially relevant within large utilities and power plants. When combined with a well-documented technical global skills shortage³, the phenomenon stunts the potential of the transition.

“Diversity and inclusion are critical in the renewable energy transition. If intentional consideration of gender diversity is not prioritised, the changes have the potential to perpetuate and deepen, rather than reduce, gender inequality.”⁴

Many countries, subnational administrations, companies and individual households are recognising and embracing the necessity and potential of an energy transition, which in theory requires a radical shift from business as usual in terms of supply delivery and rethinking the approach of the traditional energy sector. Yet with women continuing to be underrepresented in the energy sector, could this shift to a growing sustainable energy sector provide an **opportunity for diversifying not just our energy mix, but also diversifying our workforce?**

Context: The Needed Global Energy Transition

Box 1: What Do We Mean by Energy Transitions?

“Around the world, countries with various backgrounds wish to reform their energy supply and energy systems – industrialised countries, major emerging economies, and ambitious developing countries. The focus is on climate targets and the need to meet a rising demand for energy, to give more people access to energy, and to reduce the damage caused by fossil fuels to the environment and to human health... The main focus is on issues like the roll-out of renewable energy, boosting energy efficiency, integrating renewables into the systems and grids, upgrading energy infrastructure, and rules for the electricity and energy market.”

Source: 2018 Annual Report – Energy Partnerships and Energy Dialogues of the German Federal Ministry of Economic Affairs and Energy, p.9

In practice, however, an energy transition looks different depending on the country context. Key considerations include a country’s socio-economic situation in terms of development priorities and the proportion of the population that has access to modern energy. The current profile of its energy mix – is it a nation abundant in fossil fuels or is it well situated geographically for renewable energy sources? And its energy needs, such as for domestic heating and cooling; whether its economic activity is dependent on heavy industry and transportation needs are all important. It is also necessary to examine how current scenarios are

1 Airswift and Energy Jobline, 2019. The Global Energy Talent Index Report 2019.

2 IRENA, 2019. Renewable Energy: A Gender Perspective. IRENA, Abu Dhabi.

3 See for example “The Global Skills Dilemma. How Can Supply Keep Up with Demand? The Hays Global Skills Index 2019/20”, https://www.hays-index.com/wp-content/uploads/2019/09/HAYS_GLOBAL_SKILLS_INDEX_2019-20_FINAL.pdf.

4 Pearl-Martinez, R. Stephens, J., 2016. Toward a gender diverse workforce in the renewable energy transition.

expected to shift through an energy transition and how these scenarios will adapt to increasing automation and technological advancement. Furthermore, and at the heart of this study, is the question about the current role of women in their energy systems and the opportunities for diversifying the workforce within sustainable energy through energy transitions (to increase the representation of women).

Box 2: A Note on Energy Access

About 840 million people are living without access to electricity and more than 2.9 billion cook with polluting and health-damaging solid fuels. The quality of supply and access to energy services compounds the severity of the issue. Since in many rural and urban situations women are responsible for fetching water and cooking meals, the lack of access to modern energy services puts a heavy burden on women and girls.

The SDG 7 progress reports (Tracking SDG7: The Energy Progress Report 2019, www.seforall.org) predicts that on current trends a projected 650 million people are likely to remain without access to electricity by 2030 and according to the International Energy Agency (IEA) 2.2 billion people will still be dependent on inefficient and polluting energy sources for cooking.

Providing access to modern energy services to these underserved populations is crucial for overcoming extreme poverty; it will contribute to empowering women and enable them to insert themselves in remunerated economic activities for their own sake⁵ and for the benefit of their communities.

The Current State of Gender Balance in the Energy Transition

Looking at a few of the countries endeavouring energy transitions does not reveal a positive picture. Whilst the renewable energy industry in **Germany** has provided an increase in employment opportunities – the wind power sector employed about five times more people than the country's coal industry in 2016⁶ – the renewable energy sector is mirroring the underrepresentation of women in Germany's broader energy industry, occupying just 12% of executive positions in the sector.

In **Australia** women fill less than a fifth of the roles responsible for planning, directing and controlling business activities across the Australian electricity supply industry. In fact, the federal government's Workplace Gender Equality Agency estimates that in 2017 only 10.3% of company directors in the energy industry were women. Whilst the value women bring to senior positions is clear, women are not adequately represented at a Board level across the renewables industry.⁷

India came 108th (out of 148) in the World Economic Forum (WEF) 2018 Global Gender Gap report; yet, the share of female students studying engineering and technology in India is over 30%. This percentage is one of the highest in the world,⁸ presenting a key opportunity for the energy sector to capitalise on this relatively strong representation of women with STEM skills.⁹

Similar to many countries, **South Africa's** rapid transition to adopt renewable energy technologies results in talent pools being drawn from utilities in the old economy, consequently carrying over the embedded gender imbalance.¹⁰ Unique to South Africa is the national recognition of gender imbalances and written in the national Energy Policy is a commitment to develop employment equity plans to help attract appropriately skilled people and correcting gender imbalances.¹¹ Despite imbalances, some large scale IPPs have reported

5 Pind, L., 2018. Sustainable infrastructure, a powerful driver for gender equality. International Alliance of Women Statement CSW63.

6 Clean Energy Wire, 2018. Wind power employed five times more people than coal in Germany in 2016 – report.

7 Plavina, J., 2017. Australian renewable energy sector lacks women on company boards.

8 IEA, 2019. Women working in the rooftop solar sector. A look at India's transition to clean energy.

9 The IEA study specifically focusing on women in the role out of solar rooftop PV indicates that in terms of gender representation, there are mixed reviews on whether this has been achieved.

10 Author's (Sarah Stands) personal professional experience between March 2012 and March 2017 working in skills acquisition for the RE sector.

11 Prebble, M. and Rojas, A. (2018). Energizing Equality: sub-Saharan Africa's integration of gender equality in national energy policies and frameworks. Washington, USA: IUCN, Power Africa and USAID.

recruiting a women workforce of 40%¹² to over 50%, many within top management structures.¹³ Independent research reports an average 33% women participation within the utility-scale RE value chain with one individual company reporting 60% female participation.¹⁴ The percentages are high in comparison to global sector averages of 14% to 32%, where success is a result of national policy mandates and private company commitments. That saying, it appears the accountability of gender equality starts and stops with the mandates of top management quotas. **Women CEOs, CFOs and Directors often report to a male board.**¹⁵ Reportedly, women's participation is harder to achieve regarding procurement from women business owners^{16, 17} and creating meaningful participation requires a multi-tiered approach across many levels.¹⁸

Kenya's Ministry of Energy recently launched a Gender Policy.¹⁹ The policy acknowledges energy as a pillar to economic development, to enhance the wellbeing and lives of its citizens and aiming to institutionalise the principles of gender mainstreaming into the Ministry's operations. While it touches on equal access issues primarily (similar to ECOWAS' gender policy for West African States²⁰) the policy is unique as it is the first state on the continent to integrate a gender framework within all the aspects of its work be it planning, budgeting and roll out of key programmes.

Gender equality in **Mexico** is rising, yet the country still lags behind many other Central and South American countries in terms of pay and participation, especially in the energy, infrastructure and agricultural sectors.²¹ Only 12% of women graduates study engineering compared to 35%²² of men and very few women hold senior positions across all sectors.²³ At a government level, Mexico became a top performer in 2018, with 49% of legislators being women, resulting from 15 years of work quotas and efforts to increase participation.²⁴

A study looking at the **United States and Canada** indicates that in 2017 women made up 32.6% of the solar energy workforce, and 32.1% of the wind workforce in the USA, and in Canada women held between 20 and 25% of jobs in the electricity generation sector.²⁵ The US based Solar Foundation recently reported that *"solar companies are doing a better job of tracking employee demographics and generally provide positive work environments for their employees, but senior leadership in the industry lacks diversity and gaps remain in wages and job satisfaction... Among all senior executives reported by solar firms, 88% are white and 80% are men."* This is based on a recent study with the Solar Energy Industries Association (SEIA).²⁶ The energy efficiency sector in the US is even worse; at the end of 2017 women represented only 23% of the workforce compared to the 47% national average across all sectors.²⁷

The **Women, Gender Equality and the Energy Transition in the EU report from 2019**, suggests that in Europe in 2016 women represented on average 35% of the workforce in the renewable energy sector. In terms of energy-related education within the European Union in 2012, there were 11% of women compared to 22% of men in the 22-29 year old age group who graduated in science and technology.²⁸ This report goes on to confirm that:

- 12 BioTherm, 2018. Women owned businesses in the renewable energy industry. Presentation, South African Department of Energy. Kimberley, Northern Cape: 29 May 2018.
- 13 Mulilo, 2018. Business Opportunities for Women Presentation to Women Entrepreneurs Kimberley, Northern Cape: 29 May 2018.
- 14 Parshotam, A. & Westhuizen, H., 2018. Women and The Energy Value Chain Opportunities for a More Inclusive Renewable Energy Sector in Africa. Discussion Paper. October 2018. Global Economic Governance Africa (GEGA).
- 15 Interviews with several South African Executives, September 2019.
- 16 In South Africa, only 3% of total spend was achieved across all IPPs in the utility-scale programme, with a minimum target of 5%; further, most businesses comprised of low-skilled services such as cleaning and administration.
- 17 Stuurman., N. F., 2018. Does the South African renewable energy programme exclude Black Woman owned businesses. Stellenbosch University, Masters Thesis.
- 18 Parshotam, A. & Westhuizen, H., 2018. Women and The Energy Value Chain Opportunities for A More Inclusive Renewable Energy Sector in Africa. Discussion Paper. October 2018. Global Economic Governance Africa (GEGA).
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- 24 O'Neil, K., 2018. Mexico's Female Legislators Are No Silver Bullet for Gender Inequality. Blog Post. September 4, 2018.
- 25 Allison J.E., McCrory, K. & Oxnevad, I., 2019. Closing the renewable energy gender gap in the United States & Canada, The role of women's professional networking.
- 26 The Solar Foundation, 2019. <https://www.thesolarfoundation.org/solar-industry-releases-new-diversity-and-inclusion-reports-with-a-diversitychallenge-for-energy-organizations/>.
- 27 Sophia Markowska S., & Scull, L., 2018. Winning Contracts and Developing Skills: Supplier Diversity and Workforce Development in the Midwest Energy Efficiency Industry, <http://www.mwalliance.org/sites/default/files/meea-research/supplier-diversity-sept2018.pdf?current=/taxonomy/term/11>.
- 28 Clancy, J. Feenstra, M., 2019. Women, Gender Equality and the Energy Transition in the EU.

“there is limited gender-disaggregated data in relation to employment in the renewable energy sector within the European Union. This makes monitoring of progress towards gender equality and evaluation of initiatives to move to gender equality difficult. Based on the limited data available, it is possible to discern that there is a significant gender gap in the number of women in positions in both public and private sectors (including civil society initiatives) to influence the energy transition.”

If it is purely a numbers game, the lack of diversity within the sector is slowing down the energy transition. For achieving the Paris Agreement goals,

“renewable energy needs to be scaled up at least six times faster.”²⁹

Yisha He, Chairwoman of UNISUN Energy Group, states,

“What’s the key driver of the renewable energy sector? Innovation. Innovation requires diversity... [Women’s] thought process, ideas, and feelings may be different from those of men. That is exactly what a workplace needs a wide range of views.”³⁰

Dr Rabia Ferroukhi, Director of the Knowledge, Policy and Finance division at IRENA states,

“Advancing equality and diversity in the energy sector is a compelling proposition. Establishing gender as a pillar of energy strategies will produce a swifter and more inclusive transition while accelerating the attainment of multiple Sustainable Development Goals.”³¹

Hence in the context of climate change, sustainability and human rights, understanding and increasing women’s participation and career opportunities is more important than ever.

Positive progress is being made to understand and mitigate the global gender gap in sustainable energy. The International Energy Agency (IEA) Clean Energy, Education, and Empowerment (C3E) report looks closely at OECD countries. The International Renewable Energy Agency (IRENA) collects empirical evidence through global surveys in multiple languages and the GETI global talent energy index and survey annually reviews the global energy talent pool including renewable and conventional sources.

C3E Technology Collaboration Programme (TCP), a joint initiative of the Clean Energy Ministerial and the International Energy Agency has published its second annual Status Report on Gender Equality. They emphasise that *“it is critical for countries and organisations to join efforts to improve systematic data collection in order to understand trends and identify actions aimed at increasing women’s presence and participation in the energy sector.”³²*

- The proportion of female energy ministers across 7 C3E countries³³ was 11-31%;
- CEOs of energy companies across 7 C3E countries ranged from 0-17%; and
- at a higher education level, female STEM graduates across 7 C3E countries ranged from 21-52%.

The **Equal by 30 Campaign** launched under the C3E initiative in 2018, also includes a focus on increasing data. Initial statistics on women’s employment in the energy sector from a database held by the International Energy Agency³⁴ include:

- company board composition was collected on 153 companies. Within that total, women held an average 20% of seats;
- based on data for 135 companies, women made up an average of 23% of total employees; and
- only 68 companies provided reliable data on women’s representation in management. Within that group, women held an average of 18% of management positions.

IRENA’s recently completed global gender study collected empirical evidence of over 1,500 respondents regarding women’s participation, supportive policies and barriers working in renewable energy. The study concludes that renewable energy outperforms conventional energy, reporting 32% women participation in

29 IRENA, 2018. Global Energy Transformation: A roadmap to 2050, International Renewable Energy Agency, Abu Dhabi.

30 Sorenson R., 2019. How gender inclusiveness will change China’s renewable energy future: An interview with Yisha He, Chairwoman of UNISUN Energy Group. The Beam Magazine.

31 GWNET Webinar Presentation, 14 November 2019.

32 IEA & C3E International, 2019. Second Annual Status report on gender equality in the energy sector.

33 Countries include: Australia, Austria, Canada, Chile, Finland, Italy and Sweden

34 IEA & C3E International, 2019. Second Annual Status report on gender equality in the energy sector.

the renewable energy sector, and the fossil fuel industry sitting at a mere 22%. One reason for the higher participation is “because of its multi-disciplinary dimension, the renewable energy field appeals to women in ways that the fossil fuel industry does not.”³⁵

While this seems positive, when broken down further, the jobs held by women are mostly administrative roles (45%) closely followed by women working in non-STEM (35%) and finally STEM (28%).³⁶ So, if administration roles are removed, the ratio drops to about a 20% participation rate for women. The recent GETI global survey reported much lower numbers, where women only represent 14% of the RE workforce.³⁷ The most prominent barriers to participation are familiar across studies and other industries and sectors, such as perception of gender roles, cultural and social norms, and prevailing hiring practices.

Another obstacle with regard to women’s inclusion is the acceptance and limited awareness of the imbalance. Just 40% of men, as opposed to 71% of women observe the existence of gender related pay-gap differences.³⁸

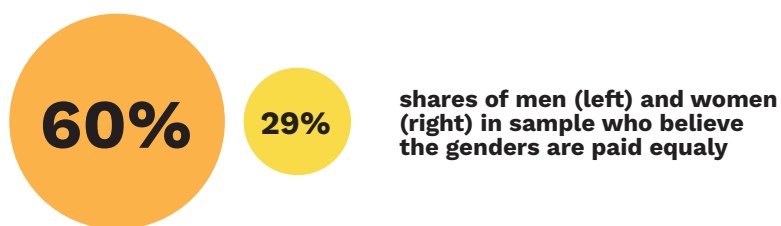


FIGURE 1: PERCEPTIONS OF GENDER-BASED PAY GAP
Source: IRENA, 2019. Renewable Energy. A Gender Perspective

The energy industry does not think attracting women is a solution to closing the skills shortage gap. The **GETI survey** asked respondents to prioritise where companies should look to increase the talent. In the oil and gas sector only 17% suggested attracting more female talent, yet when divided by gender more than 50% of women agreed compared to just 14% of men.³⁹ The ratios for improving diversity policy were only 15% for both genders. One can conclude that the obstacles of women moving into the sector are compounded by the perceptions of people already in the sector, where the demographics tell us this is generally men in decision-making roles unaware that there is a gender gap and also not seeing that more women can be a solution to the talent shortage.

Other sources of information come from NGOs, women-focused industry associations, and academics in energy, policy and women’s studies. Questions revolve around demographics and field of work, but also include perceptions and qualitative statistics. For example, over **130 respondents in the Brazil PV Sector** provided information on discrimination, sexual harassment, and family support.⁴⁰

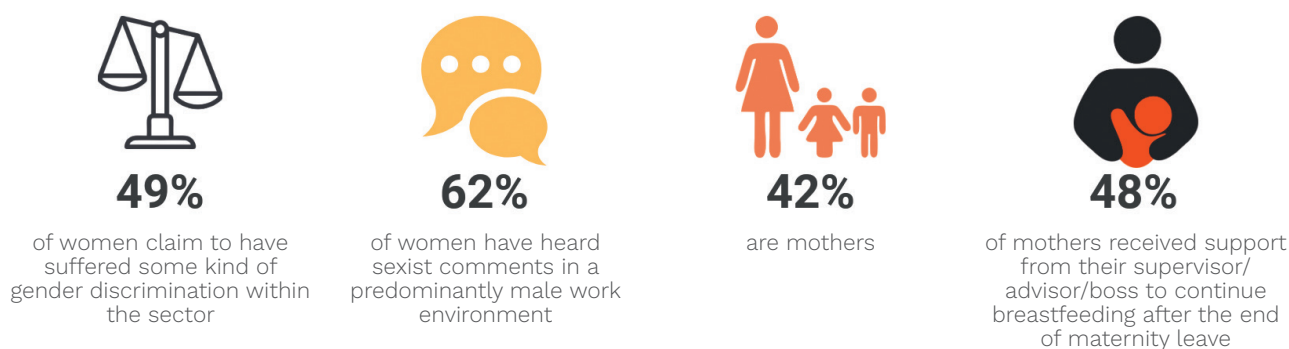


FIGURE 2: SURVEY RESULTS OF WOMEN IN THE BRAZILIAN SOLAR SECTOR
Source: 2019 Survey, Brazilian Women’s Network in Solar Energy

35 IRENA, 2019. Renewable Energy: A Gender Perspective. IRENA, Abu Dhabi.

36 Ibid.

37 Airswift and Energy Jobline, 2019. The Global Energy Talent Index Report 2019.

38 IRENA, 2019. Renewable Energy: A Gender Perspective. IRENA, Abu Dhabi.

39 Airswift and Energy Jobline, 2019. The Global Energy Talent Index Report 2019.

40 2019 Survey from the Brazilian Women’s Network in Solar Energy.

While we understand there is a gap in women's participation in the sector, there are limitations on accurate data and indicators need to be improved so that strategies can be based on reliable data and progress can be measured against an established baseline. Obtaining accurate statistics of women participating in the sustainable energy sector is challenging due to the lack of disaggregated data: both in terms of distinguishing between 'energy sector' data and 'sustainable energy' data as well as data that render a proportional breakdown of women within an organisation or sector, but not provide details of the actual positions held in the workforce (i.e. no distinction between a personal assistant, technical consultant or management). Sometimes the sample sizes are limited (to less than 100 participants), are country focused or too narrow in focus, and they depend on the distribution and access to individual respondents. Similarly, the actual boundaries of the sustainable energy sector are very broad – anything that relates to the production and supply of energy, from renewable energy, energy efficiency, smart grids, and transport through to climate policy, multilateral organisations and so forth.

At any rate, even if statistics are not satisfactory, we know that a significant gender gap exists in sustainable energy which – until now – has not been adequately addressed by various policies to promote the energy transition.

Our next step, then, is to understand the reasons behind the gender imbalances. The good news is that much research has been done and tools have been created to correct the imbalance. Such strategies are often framed within the employment cycle of recruitment, e.g. retention, leadership, advancement and promotion. The most successful strategies aim at correcting the unconscious bias of the social, cultural and leadership dynamics of the company or organisation rather than the quotas themselves.

Differences Between Industrialised and Emerging Economies

Industrialised and emerging economies face sustainable energy challenges of very different kinds. SEforALL calculates that there are currently some 840 million people without access to electricity; in many countries load-shedding and the accompanying disruptions are a weekly, if not daily occurrence. There are 2.9 billion people who rely on solid fuels and inefficient cook stoves to cook their meals. Severe energy poverty makes it almost impossible for the people affected to work themselves out of misery thus perpetuating extreme poverty. This study does not deal with situations in which providing access to modern energy is the task at hand. This is an opportune moment, however, to acknowledge the outstanding importance of resolving the access challenge in a sustainable fashion, in line with the sustainable development objective 7.

Differences are significant also in how countries approach the energy transition and what importance they give to gender equality in this context. National policy and programmes set the structural tone for gender equality, incentivizing economic transformation and increased participation of women. Opportunities for women and gender diversity in developing states may be more common, where national policy exists for socio-economic justice, inclusion and equality based on a strong national human rights agenda, and embedded with the just transition. For instance, a recent USAID report concluded that regionally sub-Saharan Africa substantially outperforms all other regions in terms of gender mainstreaming within energy sector policy development (see Figure 3).⁴¹ The Global Economic Governance Africa (GEGAFRICA) cautions in this regard that there is often 'a disconnect between policy formulation and implementation'⁴², a problem not only encountered by African nations.

41 Prebble, M. and Rojas, A., 2017. Energizing Equality: the importance of integrating gender equality principles in national energy policies and frameworks. Washington, USA: IUCN and USAID

42 Parshotam, A. & Westhuizen, H., 2018. Women and The Energy Value Chain Opportunities for A More Inclusive Renewable Energy Sector in Africa. Discussion Paper. October 2018. Global Economic Governance Africa (GEGA).

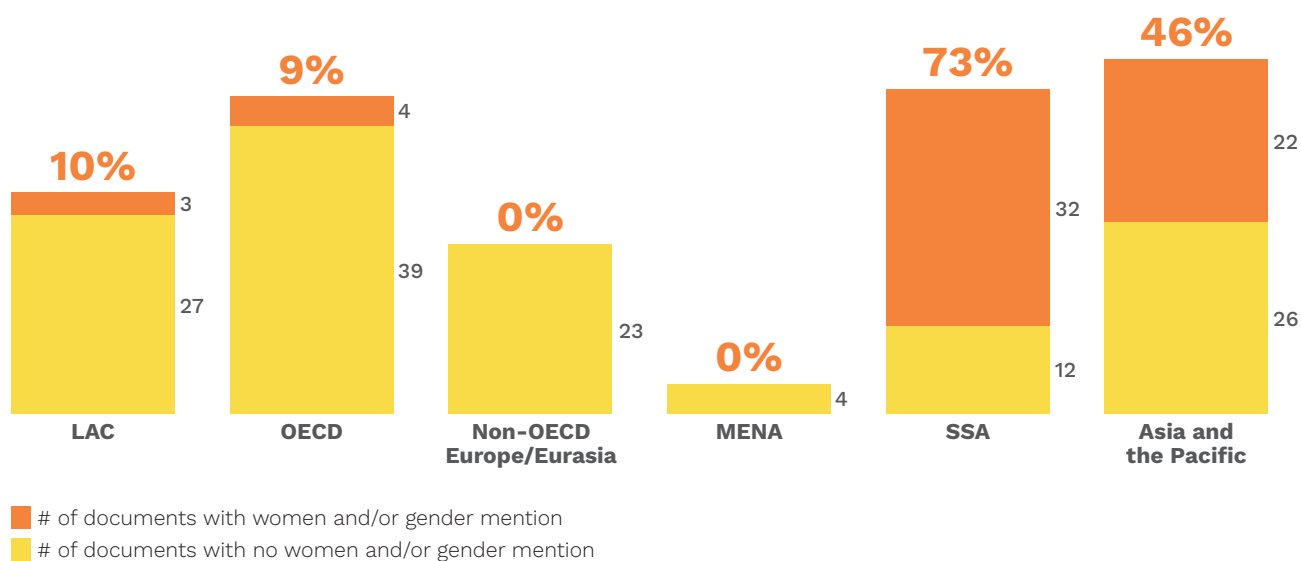


FIGURE 3: A REGIONAL COMPARISON OF GENDER CONSIDERATIONS IN NATIONAL-LEVEL ENERGY DOCUMENTS
 Source: IUCN, 2017. Energizing Equality⁴³

Priorities for the energy transition may also be different in industrialised and emerging countries. In industrialised countries sustainable energy may be seen sometimes mainly as a necessary retrofit – for an existing complex socio-economic machinery – primarily in order to achieve carbon reduction objectives; in emerging economies sustainable energy might be seen as one dimension of a multi-faceted development strategy to bring about socio-economic transformation, including gender equality and inclusion. Employment creation and the goal of leaving no-one behind, however, are imperatives that both industrialised and emerging countries pursue as they embark on energy transitions.

In developing and emerging economies, studies found, that most opportunities for women are within the rural low-skilled temporary work contexts of construction and sub-contracting during construction etc. Baruah states that while there is not much data to support the inequalities, it seems that:

“developing countries and emerging economies are, broadly speaking, creating much larger volumes of employment for women, even if the jobs created are poorly paid and unstable. On the other hand, in many industrialized countries, such as Canada, there is a lot of attention paid to RE technology and financing, but very little to employment equity.”⁴⁴

While there are opportunities in the emerging sector there are also risks for women holding a majority of the ‘lower skilled jobs’. The ILO reports in a modern energy context, where technology, digitisation and automation have become mainstream, women are in a more vulnerable position than men in terms of their employment, as they dominated the occupations ripe for automation through technological advancement.⁴⁵

Does gender inclusion for the sake of inclusion result in a meaningful outcome for women? How can gender metrics, indicators and reporting be changed to be more inclusive? Are there opportunities in the developing and emerging economy context that are meaningful?

The relevancy becomes apparent when looking at the case of South Africa’s Renewable Energy Independent Procurement Program as one example:

43 Prebble, M. and Rojas, A. (2017). Energizing Equality: the importance of integrating gender equality principles in national energy policies and frameworks. Washington, USA: IUCN and USAID.

44 Baruah, B., 2016. Renewable inequity? Women’s employment in clean energy in industrialized, emerging and developing economies. Natural Resources Forum. 10.1111/1477-8947.12105.

45 ILO, 2019. Quantum Leap for Gender Equality.

Box 3: Public Sector Example – South African Government Programme Indicators: Women's Participation in the South African Utility-Scale Renewable Energy Independent Power Producer Procurement Programme (REIPPPP)

Within the South African REIPPPP, women's participation is mandated within the bid documents, requiring quarterly reporting on commitments and actual women's participation. This includes indicators such as employees from local communities and employees who are women; black females in top management; women owned vendors and enterprise procurement spending.⁴⁶

The result improves greater inclusivity and visibility. However, besides top management, the result is more women being employed in lower paid unskilled jobs or traditional gender roles.⁴⁷ This is also the case with procurement. Procurement is primarily from traditional women services such as cleaners, administration and marketing.⁴⁸

Like many developing contexts, in South Africa there is a greater need for occupations that are not conventional to the renewable energy sector. These roles require more intensive local engagement where the quality of the engagement is crucial to the success of project. In industrialised nations, the land ownership component and direct beneficiaries of large projects can be one or two people (generally a single land owner or farmer); in the developing context there can be hundreds and even thousands of people to engage in the community, sometimes from different ethnicities, languages, cultures and economic status. The quality of these engagements can either secure or revoke a social license to operate. More often than not, women hold the responsibility of Community Engagement Manager, Project Development Manager, Economic Development Managers, Socio-Economic Project Coordinator and Community Liaison.⁴⁹

Another difference lies in women's own perceived barriers to participation in the renewable energy sector. Women in industrialised countries indicated the workplace culture of the renewable energy industry as being a primary barrier, yet in emerging/developing countries, the barrier is access to financing and training.⁵⁰ Does that mean there are no cultural issues in emerging economies? No, but respondents in emerging economies are more provoked by not having access to appropriate training than the barriers within the work environments themselves. It must also be noted that more people, especially women, work in the informal sector than in corporations within developing and emerging economies when compared to industrialised economies. Therefore, appropriate finance and training to enter the formal labour market may resonate as a greater priority for the sector as a whole. While there is not enough data to make concrete conclusions, this difference deserves greater attention for further qualitative study for the sole purpose of unlocking more meaningful opportunities for women and greater gender balance.

1.2 Girls in STEM

The diversity of value chains in sustainable energy makes it clear that:

- a. not all roles in the future sustainable energy sector will require formal or higher education; and
- b. of those that do, not all will require engineering or STEM related education.

46 Republic of South Africa Department of Energy, 2018. Annexure A of bidding documents. REIPP Procurement Programme (not publicly accessible).

47 Stands, S.R., 2015. Utility-Scale Renewable Energy Job Creation: An investigation of the South African Renewable Energy Independent Power Producer Procurement Programme (REIPPPP). Thesis presented in partial fulfilment of the requirements for the degree of Master of Philosophy in Sustainable Development in the Faculty of Economic and Management Sciences at Stellenbosch University, March 2015.

48 Ibid.

49 Author's (Sarah Stands) personal experience, see also upcoming IRENA study on community engagement in Sub-Saharan Africa.

50 IRENA, 2019. Renewable Energy: A Gender Perspective. IRENA, Abu Dhabi.

However, it is true that, to a large extent, existing roles within the sustainable energy sector are occupied by men with engineering and STEM related qualifications, and if women are to have a fair chance at occupying those roles in the future, they must also have greater access and incentive to enrol in engineering and STEM related subjects. Thus, the under-representation in STEM subjects deserves investigation.⁵¹

This underrepresentation of women, particularly in STEM disciplines, occurs before they reach the job market, as they enrol in tertiary education.

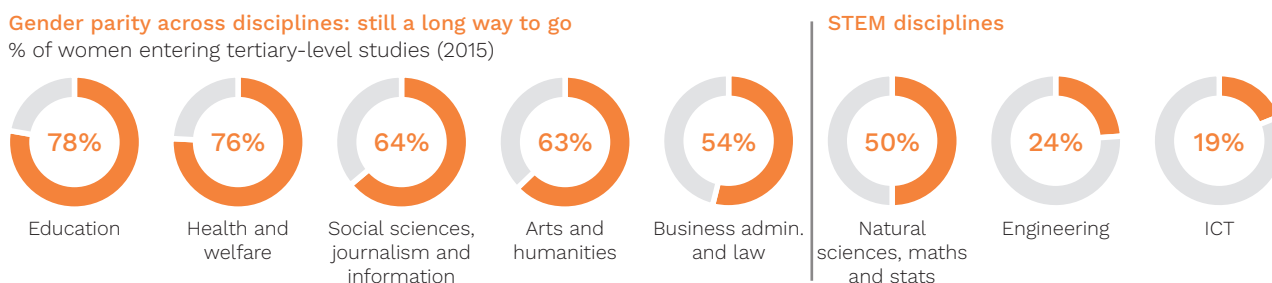


FIGURE 4: WOMEN REMAIN UNDERREPRESENTED IN STEM DISCIPLINES

Source: Education at a Glance 2017, OECD Indicators

The evidence around girls and STEM subjects is curious. The OECD Programme for International Student Assessment (PISA) provides standardised analysis of the testing of 15 year-olds, in reading, science and mathematics across 67 nations. The 2019 data demonstrate that while girls universally do better than boys in reading, they also do better than boys in sciences in two out of three countries⁵². Boys do marginally better than girls in maths, which is attributed to perceptions of confidence with learning maths and science.

Although girls are on a par with boys with regard to talent, far fewer pursue further studies in STEM. The OECD has suggested that the elevated reading scores of girls relative to boys' lead to the perception of reading as a relative strength over maths and science⁵³, yet this would appear to be a convenient interpretation. The more likely explanation is that girls, like everyone else, believe the cultural stereotype that we all encountered as children, 'that maths and science is the domain of men, if this were not the case why don't more women win the Nobel Prize?': a completely ahistorical interpretation of the centuries of barriers to the pursuit of education and excellence for girls and women. The evidence that girls are as good at maths and science and significantly better in other subjects seems to have no place in the discussion.

1.3 Summary

The energy sector workforce is faced with a significant gender gap. As stated in the recent report *Renewable Energy: A Gender Perspective* by the International Renewable Energy Agency (IRENA), the energy industry is far from being gender-balanced with only 22% of women in the traditional energy sector workforce and 32% in the renewable energy workforce. While STEM careers are – as will be demonstrated – by no means the only possibility to contribute to the energy transition, the notorious under-representation of girls and women in STEM is an important fact.

The energy transition and the trend towards renewable energy, however, present unprecedented opportunities for women both directly interested in the industry and working within the auspices of a decarbonized global economy. According to the newly released *Renewables 2019 Global Status Report* of the Renewable Energy Policy Network for the 21st Century (REN21), the year 2018 saw renewables' global capacity grow by 8% or 181 GW. For the fourth consecutive year renewable power outpaced fossil fuels in terms of net capacity additions of more than 50% and now delivers more than 26% of global electricity. While this development sounds promising, a lot remains to be done to achieve a sustainable energy future.

51 There are huge regional differences in STEM (as the OECD data partially shows), and the risks and potentials of these differences should be researched further in follow up studies.

52 Stoet, G., & Geary, D., 2018. The Gender-Equality Paradox in Science, Technology, Engineering, and Mathematics Education. *Psychological Science*. April, Vol 29(4), pp. 581-593.

53 OECD, 2019. Why don't more girls choose to pursue a science career? PISA in Focus, n° 93, OECD Publishing, Paris.

Women have a lot to offer for the energy sector, especially in times of change. Scientific research in other sectors has found that a diversified workforce delivers better results, not only in terms of increased creativity and innovation potential, but also related to better decision-making and greater profits. Initial research findings have also led to conclude that companies with more women on their board of directors are *inter alia* more likely to invest in renewable power generation, mitigate climate change and proactively address environmental concerns.⁵⁴ Still, this potential has not yet translated into a substantially narrower gender gap in the energy sector. Taking into account that the workforce in the renewable energy sector is predicted to rise from 11 million jobs today to about 42 million jobs in 2050⁵⁵, the attraction of female talent will be crucial to ensure a thriving sector.

Energy transitions show different pathways from one country to another. Some countries – such as South Africa or Kenya – make special efforts to address gender imbalances as they get their energy transitions under way. Networks – such as C3E for OECD countries – urge for more systematic data collection to understand trends and identify actions aimed at increasing women’s presence and participation in the energy sector. Energy transitions also have different characteristics depending on whether we look at industrialised countries – where addressing carbon reduction commitments is often the driving factor – or developing and emerging economies in which the energy transition is a dimension of a multi-faceted endeavour towards socio-economic transformation.

54 McElhane, K. A. and Mobasser S., 2012. Women create a sustainable future, UC Berkeley Haas School of Business.

55 IRENA (forthcoming). Measuring the socio-economics of transition: Focus on jobs. IRENA, Abu Dhabi.

2 Evidence of the Value of Diversity and Gender Equality in the Workplace

2.1 The Power of Diversity

This document is focused on strategies to ensure women have full access to future workforce engagement in sustainable energy. We have given preference to evidence that is inclusive of diversity, because we recognise that the women we wish to attract to the sector, will also be women of diverse ethnicities, language backgrounds, religions, abilities and so on. The intersectionality of these diverse levels of difference can compound the biases they experience in workplace engagement and we are seeking a level playing field for all. We also acknowledge that every country context is diverse, but in producing this document, we have relied on the best available evidence from larger scale systematic review studies, usually from the global North and from corporate settings. In some instances, your country context will be more advanced than the norm, in some instances, less. We have tried to present the evidence of global trends so that the reader can gain insights in trends that may be useful to understand and apply to their own context.

If there were ever any doubt, the global financial crisis proved it: companies with more women in executive and board positions survived and thrived both during and after the crisis. The McKinsey Global Institute began publishing its global surveys exploring the potential benefits of women in leadership positions in their *Women Matter* series 2007⁵⁶ just prior to the global financial crisis. By 2009, their *Women Matter 3* survey produced evidence derived from research conducted with over 800 business leaders worldwide, describing women leaders as the ‘competitive edge in and after the crisis’⁵⁷.

McKinsey is not alone in this belief – with evidence of the value of women’s inclusion in business coming from every part of the globe and every type of business.^{58,59} The World Bank, for example, publishes a widely respected and used Development Report on an annual basis. The Development Report of the year 2012 was focused on Development and Gender. These are some of the main messages⁶⁰:

- gender equality is a core development objective in its own right;
- greater gender equality is also smart economics, enhancing productivity and improving other development outcomes, including prospects for the next generation and for the quality of societal policies and institutions; and
- economic development is not enough to shrink all gender disparities; corrective policies that focus on persisting gender gaps are essential.

The report points to four priority areas for policy going forward. First, reduce gender gaps in human capital, specifically those that address female mortality and education. Second, close gender gaps in access to economic opportunities, earnings, and productivity. Third, shrink gender differences in voice and agency within society. Fourth, limit the reproduction of gender inequality across generations.

Increased Company Profitability

There is specific and measurable evidence globally of the economic value of women to businesses that pervades business literature and continues to expand.

The literature around women’s inclusion as executives is clear. Companies run by female CEOs have lower leverage, less volatile earnings and a higher chance of survival than otherwise similar firms run by male CEOs.⁶¹ A long-term US study of Fortune 500 companies established in 1980 demonstrated in 2001 that the best 25 firms for women’s representation in leadership roles produced 34% higher profits overall when calculated for overall revenue; 18% higher for assets and 69% higher with respect to equity than comparable firms run by male CEOs.⁶²

56 McKinsey & Company, 2007. *Women Matter: Gender Diversity, a Corporate Performance Driver*.

57 McKinsey & Company, 2009. *Women Matter 3 Women Leaders: a competitive edge in and after the crisis*.

58 Eswaran, V., 2019. The business case for diversity in the workplace is now overwhelming. World Economic Forum.

59 Smith, G., 2014. Building a Business Case for Gender Diversity. The Centre for Ethical Leadership, University of Melbourne.

60 <https://openknowledge.worldbank.org/handle/10986/4391>.

61 Faccio, M., Marchica, M., & Mura, R., 2016. CEO gender, corporate risk-taking, and the efficiency of capital allocation. *Journal of Corporate Finance*. Vol 39, pp. 193–209.

62 Adler, R., 2009. Profit, thy name is...woman? The consistent correlation between women executives and high profitability. *Pacific Standard*.

Corporate risk taking seems to be a recurring theme, with women CEOs less likely to do it and firms benefiting financially because of that fact: male executives engage in more acquisitions and issue debt more often than female executives, resulting in announcements of approximately 2% lower returns.⁶³ Another study of 345 companies in six Latin American countries reported a 44% higher return on equity for companies with one or more women on executive committees versus those companies with no women on executive committees.⁶⁴

Decreased Risk and Overconfidence

Overconfidence among male executives is a strong theme in the global literature. The evidence suggests men exhibit relative overconfidence in significant corporate decision-making compared with women at both the executive and the board level. The combination of gender among executives and board members is also significant: male CEOs at firms with female directors exhibit less overconfidence.

Female directors are shown to matter more in industries with high overconfidence prevalence as demonstrated by the smaller drop in performance during the global financial crisis of firms with higher proportions of female directors.⁶⁵ Board decision-making proves to be enhanced through closer monitoring of finances and decreasing overconfidence, resulting in increased cash holdings.⁶⁶ Others have shown a decreasing pay gap between men and women executives; lower executive pay, lower corporate risk and better performance when the proportion of women on the executive team is higher.⁶⁷

Increased Environmental Concern and Decreased Environmental Liability

There is good evidence from a large sample of countries globally that female representation in the political sphere leads countries to adopt more stringent climate change policies and lower carbon emissions.⁶⁸

In the EU, female Members of Parliament express greater concern about the environment, regardless of party ideology and alignment, being significantly more likely to support environmental legislation.⁶⁹ This trend is beginning to be investigated in the corporate world as well and it appears to hold true: Glass and colleagues established that regardless of CEO gender, women who have multiple board positions are more likely to influence those boards, ensuring stronger environmental practices.^{70,71} Globally, companies with greater numbers of women directors are less likely to have legal action for environmental breaches against them, a fact compounded when aligned with female CEOs.⁷²

Presented in this section is a fraction of the current, available and rapidly expanding global body of evidence of the value, in an economic sense, of women in executive and leadership roles, but this is not the whole story.

63 Huang, J. & Kisgen, D., 2013. Gender and Corporate Finance: Are Male Executives Overconfident Relative to Female Executives? *Journal of Financial Economics*. Vol 108, pp. 822-839.

64 McKinsey & Company, 2013. *Women Matter*. Latin America, May 2013.

65 Chen, J., Leung, W., Song, W. & Goergen, M., 2019. Why female board representation matters: The role of female directors in reducing male CEO overconfidence in corporate decisions. *Journal of Empirical Finance*. Vol 53 Sept 2019, pp. 70-90.

66 El Kalak, I. & Tosun, O., 2019. Female Directors, CEO Overconfidence and Excess Cash. *SSRN Electronic Journal*. April 5.

67 Perryman, A., Fernando, G. & Tripathy, A., 2016. Do gender differences persist? An examination of gender diversity on firm performance, risk, and executive compensation. *Journal of Business Research*. Vol 69(2), pp. 579-586.

68 Mavisakalyan, A. & Tarverdi, Y., 2019. Gender and climate change: Do female parliamentarians make difference? *European Journal of Political Economy*. Vol 56(C), pp. 151-164.

69 Ramstetter, L. & Habersack, F., 2019. Do women make a difference? Analysing environmental attitudes and actions of Members of the European Parliament. *Environmental Politics*.

70 Glass, A., Cook, A., and Ingersol, A., 2015. Do Women Leaders Promote Sustainability? Analysing the Effect of Corporate Governance Composition on Environmental Performance. *Business Strategy and the Environment* (2015).

71 McElhaney, K., & Mobasser, S., 2012. *Women Create a Sustainable Future*. Haas School of Business. UC Berkeley.

72 Lui, C., 2018. Are women greener? Corporate gender diversity and environmental violations. *Journal of Corporate Finance*. Vol 52, pp. 118-142.

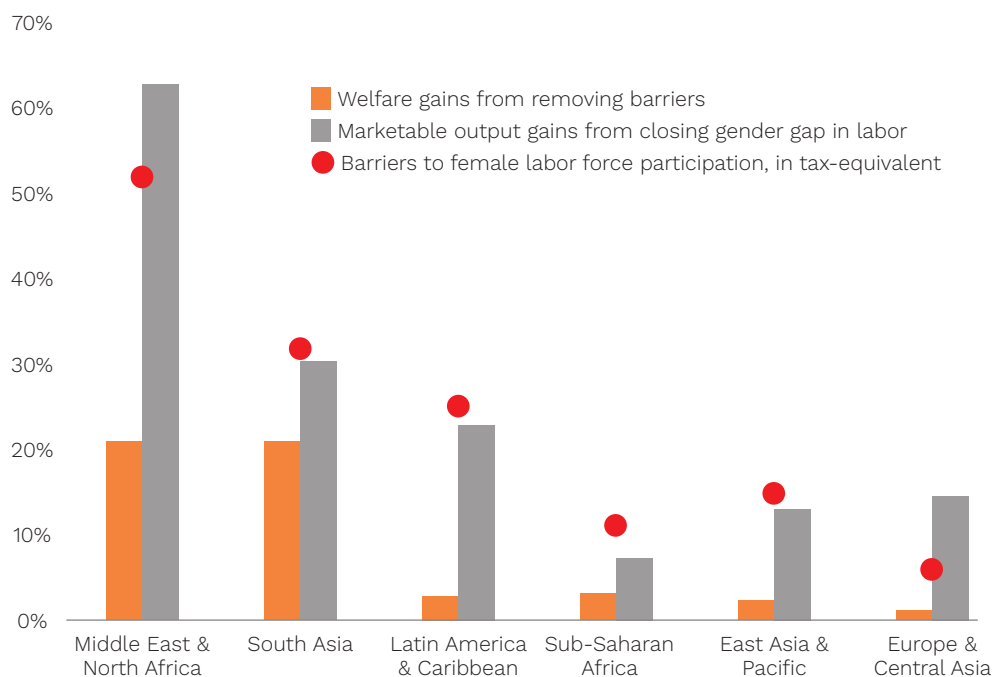


FIGURE 5: ECONOMIC GAINS FROM GENDER INCLUSION – REDUCING BARRIERS TO WOMEN IN THE WORKPLACE SIGNIFICANTLY BOOSTS WELFARE AND GROWTH

Source: IMF, 2018.⁷³ See also IMF Discussion Note No.18/06

The value of women's inclusion in the global workforce, at all levels, and under the right circumstances, has demonstrable benefits to women, their families and communities and to their national economies (see Figure 5). Those 'right circumstances' focus on equitable, inclusive, safe and flexible workplace practices, which are discussed fully in Section 5. The value to the global economy of women in the workforce is discussed below.

The Value of Gender Equality to the Global Economy

In their 2015 'Power of Parity' report⁷⁴, the McKinsey Global Institute mapped gender equality indicators in 95 countries. They first provided a clear definition of what they meant by gender equality, on the basis of four categories of indicators:

- Equality at Work;
- Essential Services and Enablers of Economic Opportunity;
- Legal Protection and Political Voice; and
- Physical Security and Autonomy.

Their economic projection demonstrates that if the entire world closed the gender gap on these points to the same extent as the most gender equal country on earth (at that time and still, Iceland ranked 1st on the World Economic Forum Gender Gap Index) by 2025, it would add 28 trillion USD to the annual global economy. This is equivalent to the combined annual GDP of China and the USA in 2014.

73 IMF, 2018. <https://blogs.imf.org/2018/11/28/economic-gains-from-gender-inclusion-even-greater-than-you-thought/> (accessed 11 October 2019).

74 McKinsey Global Institute, 2015. The Power of Parity: How Advancing Women's Equality Can Add 12 Trillion to Global Growth.

Recognising that within 10 years, it was unlikely that many countries would be able to reach this target, a similar calculation for reaching the same level of gender equality as the highest placed country in a region by the same deadline would add 12 trillion USD to the annual global economy. It is important to recognise that this report of **Gender Equality** indicators is **far from simply adding more jobs for women to do**⁷⁵, which is a complaint about the narrow focus of ‘smart economics.’⁷⁶

Yet with proper integration of women into the workforce, as Christine Lagarde, President of the European Central Bank and former Managing Director of the International Monetary Fund (IMF) says,

*“when more women join the workforce, everyone benefits.”*⁷⁷

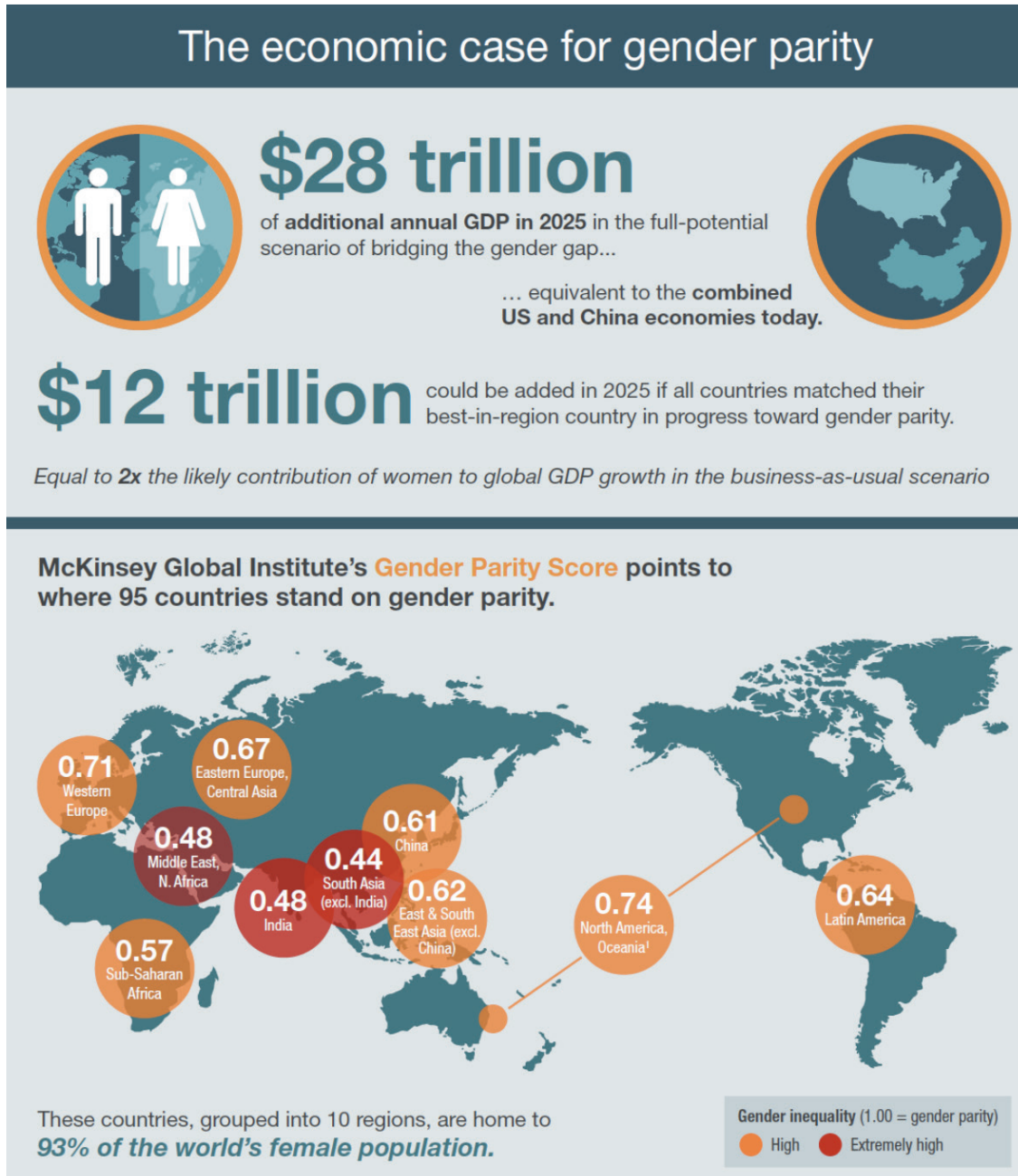


FIGURE 6: THE ECONOMIC CASE FOR GENDER PARITY
 Source: McKinsey Global Institute, 2015

75 IWDA, 2016. Double Burden. The Impact of Economic Empowerment Initiatives on Women’s Workload.

76 World Bank, 2006. Gender Equality as Smart Economics: A World Bank Group Gender Action Plan (Fiscal years 2007–10).

77 Lagarde, C. & Ostry, J., 2018. When more women join the workforce, everyone benefits. Here’s why. World Economic Forum Blog.

The Use of the Term ‘Diversity’

An important point to make about the literature is the nature of the word ‘diversity’. Much of the literature about diversity in the business sense comes from Human Resources language and is used inconsistently. In the first instance, the terms ‘diversity inclusion’ and ‘gender diversity’ referred to ‘not just men’, in other words, the inclusion of women.⁷⁸ More correctly, the term ‘gender diversity’ should include people of diverse sexual orientation, gender identity and expression, but there is little evidence of that.

Finally, genuine overall ‘diversity’ refers to people of all sexual orientation, gender identity and expression, along with diverse ethnicity (called race in the USA), age, ability, religion, language background, caste, socio-economic status, educational status and many more contextually relevant ways of grouping people in society.

Of the literature that focuses on genuine diversity, it is important to acknowledge that it is not only the inclusion of women that enhances business performance. Literature contains examples where the inclusion of people of diverse gender identity and ethnicity has been shown to considerably improve decision making and boost results.⁷⁹ Generally, the value diversity brings to teams is discussed extensively in the literature and covers a broad range of – partially divergent – insights.⁸⁰

Inclusion is the process of ensuring equity of access to all people. This is based on the presumption that all people have a right to equal and full enjoyment of their human rights.

When speaking of inclusion in this document, it is to this presumption of the right to equal and full enjoyment of human rights to which we refer.

Box 4: Private Sector Example – US, The Impact of Gender-balanced Teams in the Food Service and Facilities Management Industries

Companies in the food service and facility management industry report that achieving gender balanced teams improves performance. *“Sodexo is focused on increasing the number of women executives globally by 2020, the company aims to have women comprise 35% of its top 1,200 executives, with the goal of 40% by 2025. To help meet these goals, Sodexo looked at the gender composition of its own teams and their associated business results to make a stronger case for why managers and leaders should consider gender diversity in hiring and promoting talent. The company found that **gender-balanced teams—those with 40%–60% women in management—had higher key performance indicator (KPI) results than other teams. ... Specifically, these teams were more engaged; had higher brand awareness; had better client retention (12% more); and had more positive profit and growth over three consecutive years.**”⁸¹*

78 Turban, S., Wu, D. & Zhang, L., 2019. When Gender Diversity Makes Firms More Productive. Harvard Business Review. February 11, 2019.

79 Cloverpop, 2017. Hacking Diversity with Inclusive Decision-making.

80 For further reading, review for instance Luring, Jakob; Villesèche, Florence (2019): The Performance of Gender Diverse Teams: What Is the Relation between Diversity; Attitudes and Degree of Diversity? European Management Review, Vol.16(2), pp.243-254; However, I.J.; Zhou, J.; Knippenberg, D.V.A.N. (2018): Different strokes for different teams: The contingent effects of positive and negative feedback on the creativity of informationally homogeneous and diverse teams, Academy of Management Journal, Vol.61(6), pp.2159-2181; and Li, J.; Meyer, B.; Shemla, M.; Wegge, J., 2018. From being diverse to becoming diverse: A dynamic team diversity theory. Journal of Organizational Behavior. Vol.39(8), pp.956-970.

81 Catalyst, 2019. Sodexo: the business impact of gender balanced teams, <https://www.catalyst.org/research/sodexo-the-business-impact-of-gender-balanced-teams/>.

2.2 Resistance to Gender Balance

The question therefore becomes, if the inclusion of women and people of diverse ethnicities and gender identities is proven in evidence from reputable sources to:

- reduce corporate risk & improve governance^{82,83};
- improve a company's ability to survive financial shocks⁸⁴;
- increase innovation⁸⁵;
- demonstrate greater corporate responsibility^{86,87};
- increase return on assets⁸⁸;
- improve corporate performance^{89,90,91};
- improve team leadership, motivation and performance^{92,93,94}; and
- improve use of available talent^{95,96},

why isn't inclusion a global corporate priority? And yet, this is precisely what we see. Not only is the representation of women and men in executive and board positions not equal, to a large extent it is going backwards. So how can we explain this?

Business is Gendered Cultural Practice with Deep Historical Roots

Though people may perceive global market processes as independent, self-regulating, and most importantly gender and diversity neutral, this is clearly not true. People and governments interfere with the market on a daily basis with national and global regulation. A clear example is the idea that some businesses are 'too big to fail' as asserted during the global financial crisis. Global business and economics is a manifestation of human culture, like any other, with deep historical roots.

The culture of global business has its own language, meanings and symbols and practices and rather than being gender neutral it is a highly masculine practice. Western business practice was born in the days when only men worked outside the family home or farm, the practices of increasingly big business were tailored to suit masculine gender norms. Because there was a wife at home to attend to the family sphere, work was increasingly conducted outside the home for extended periods in large offices staffed only by men. In some countries, this is still the case. Men took on the leadership in business and politics, giving both a masculine form and persona.

For many men this space and practice feels like a perfect fit, that it is the logical, natural, normal and most appropriate manifestation of the workplace. Those men, therefore, may have little understanding that it feels unwelcoming and even hostile to others.

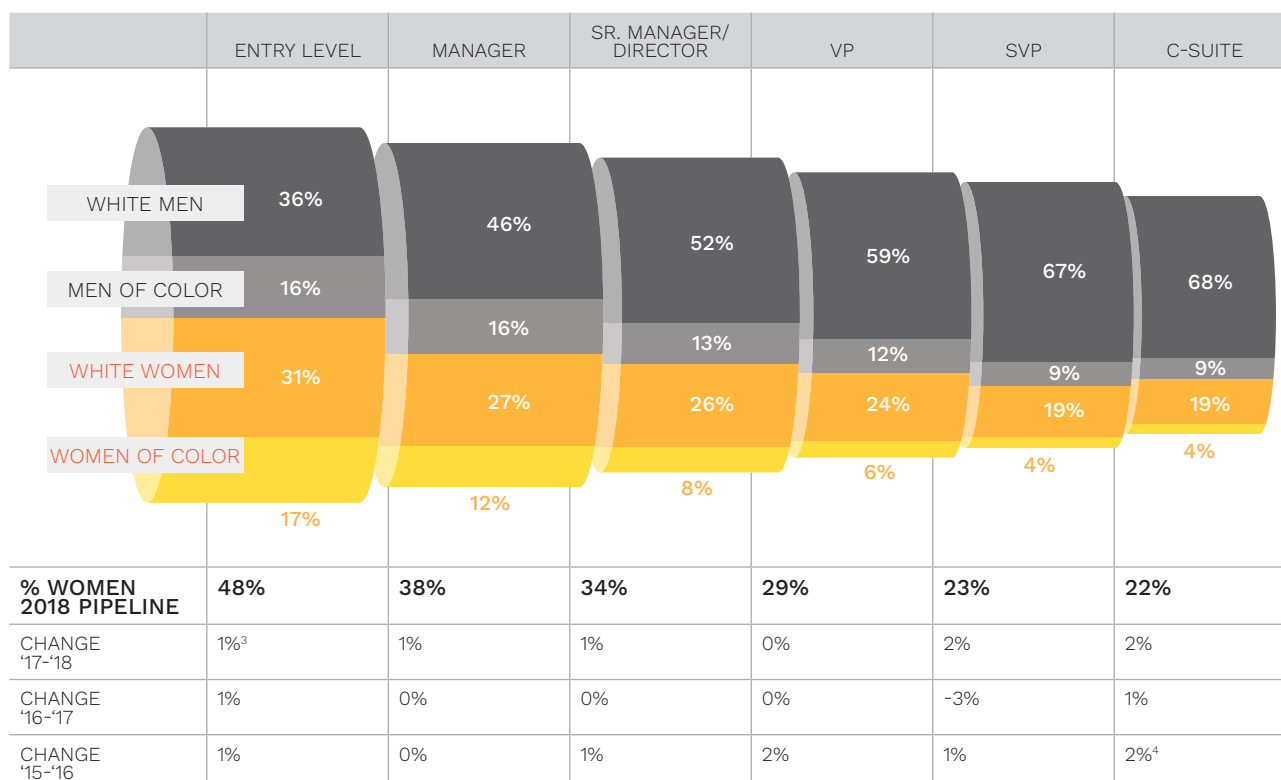
- 82 Adams, R., & Ferreira, D., 2009. Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*. Vol 94(2), pp. 291-309.
- 83 Perryman, A., Fernando, G. & Tripathy, A., 2016. Do gender differences persist? An examination of gender diversity on firm performance, risk, and executive compensation. *Journal of Business Research*. Vol 69(2), pp. 579-586.
- 84 Chen, J., Leung, W., Song, W. & Goergen, M., 2019. Why female board representation matters: The role of female directors in reducing male CEO overconfidence in corporate decisions. *Journal of Empirical Finance*. Vol 53 Sept 2019, pp. 70-90.
- 85 Chen, J., Leung, W. & Evans, Kevin P., 2018. Female board representation, corporate innovation and firm performance. *Journal of Empirical Finance*. Vol 48(C), pp. 236-254.
- 86 Larkin, M., Bernardi, B., & Bosco, S., 2012. Board Gender Diversity, Corporate Reputation and Market Performance. *The International Journal of Banking and Finance*.
- 87 Glass, A., Cook, A., and Ingersol, A., 2015. Do Women Leaders Promote Sustainability? Analysing the Effect of Corporate Governance Composition on Environmental Performance. *Business Strategy and the Environment* (2015).
- 88 Christiansen, L., Huidan, L., Pereira, J., Topalova, P. & Turk, R., 2016. Gender diversity in senior positions and firm performance: Evidence from Europe. IMF.
- 89 Catalyst, 2004. The bottom line: Connecting corporate performance and gender diversity.
- 90 Noland, M., Moran, T., Kotschwar, B., 2016. Is gender diversity profitable? Evidence from a global survey', Peterson Institute for International Economics.
- 91 Fairchild, C., 2014. 'Women CEOs in the fortune 1000: By the numbers. *Fortune*.
- 92 Eagly, A. & Carli, L., 2007. Women and the Labyrinth of Leadership. *Harvard Business Review*.
- 93 Williams, A. et al., 2010. Evidence for a Collective Intelligence Factor in the Performance of Human Groups. *Science*. Vol 330, pp. 686-688.
- 94 Morgan Stanley, 2016. Why it Pays to Invest in Gender Diversity.
- 95 Adams, R. & Kirchmaier, T., 2016. Women on boards in finance and STEM industries. *American Economic Review*. Vol 106(5), pp. 77-281.
- 96 Nollenberger, N., Rodríguez-Planas, N. & Sevilla, A., 2016. The math gender gap: The role of culture. *American Economic Review*. Vol 106(5), pp. 257-261.

2.3 Evidence of Gender Inequality in the Workplace

Women’s participation in the formal labour force varies across countries. It is generally lowest in MENA and Sub-Saharan African countries and highest in Nordic and other Western countries. Some countries are doing well in turning their investments in girls’ education into workforce participation and others are going backwards.

In the 21st century, where in many countries it is impossible for families to survive with only one income, women graduate from university at higher rates than men in many countries. A ‘skills shortage’ means that businesses need to compete for the best talent in the market.

% OF EMPLOYEES BY LEVEL IN 2018²



1 In this study, women of colour include Black, Latina, Asian, American Indian or Alaskan Native, Native Hawaiian, Pacific Islander, or mixed-race women. However, due to small sample sizes, reported findings on individual racial/ethnic groups are restricted to Black women, Latinas, and Asian women. **2** Due to rounding, representation by race and gender may sum to 101 percent or 99 percent within some levels. **3** This represents percentage point change. **4** The small numbers at the executive level, combined with this study’s methodology, which takes the average of companies, means that findings at the executive level are more sensitive to individual company variation.

FIGURE 7: A REPRESENTATION OF THE CORPORATE PIPELINE BY GENDER AND RACE¹

Source: McKinsey & Company, 2018. Women in the Workplace

The graphic above (Figure 7) comes from a study of 279 companies in the USA employing more than 13 million people. They shared their pipeline data and completed a survey of their HR practices. More than 64,000 employees were surveyed on their workplace experiences. The researchers also interviewed women of different races and ethnicities and LGBTQ women for additional insights.

This study clearly demonstrated that women are left behind as soon as they are hired, when it comes to performance reviews and, significantly, by not being promoted into the higher levels of a company. According to the study, women are less likely to be hired into entry-level jobs than men. In particular early gaps in hiring and promotions can be explained by ‘performance bias’: we tend to overestimate men’s performance and underestimate women’s. As a consequence, men are often hired and promoted based on

their potential, while women are often hired and promoted based on their track record.⁹⁷ Regarding the lack of women in senior roles, the attrition of women and men was the same from within the companies, so it is not an explanatory factor for women's underrepresentation. Moreover, the study found that being of the non-dominant ethnicity compounded this disadvantage for both men and women, making the disadvantage most chronic for women of non-dominant ethnicities.

In addition, women face an uneven playing field relative to their male colleagues: women receive less support from managers in terms of resources and socialisation (which was found to be tied to promotion rates for men); women face everyday discrimination and still face significant sexual harassment (with higher rates for more senior women). Finally, women ask for promotions at the same rate as men but get them less often.⁹⁸

The **gender pay gap** is an indicator of these and other imbalances. According to UN Women the average global gender pay gap in 2010 was 23%⁹⁹, which means that globally women make only 77 cents for every dollar men earn. The progress report on the UN's SDG target 8.5, which sets out the aim to achieve by 2030 'equal pay for work of equal value' states a median hourly gender pay gap of 12% for 2019 based on a sample of 62 countries. It also mentions that the measure "exceeded 20 per cent in managerial and professional occupations, among workers in crafts and related trades and among plant machine operators and assemblers."^{100 101} No matter the exact number, the gender pay gaps have been shown to "remain stubbornly persistent everywhere"¹⁰². They, *inter alia*, are a consequence of sectoral segregation (i.e. a tendency for women to work in relatively low-paying sectors), motherhood¹⁰³, a higher proportion of unpaid relative to paid work by women (reflected in a larger share of women's part-time work), a low percentage of female leadership, gender norms, and discrimination (i.e. women earning less than men for doing jobs of equal value). Generally speaking, "the largest gender pay gaps are usually found at the top of the wage distribution—the 'glass ceiling' for highly skilled women workers—and at the bottom—the 'sticky floor' for women working in the lowest paid jobs."¹⁰⁴ Taken together, the gender pay gaps and women's lower workforce participation lead to significant gaps in lifetime income between women and men and contribute to women's reduced pension income in later life.

Cross-sectoral View

Looking at the data it becomes clear that no sector, either globally or regionally, has managed to achieve equality or inclusion at all levels of the business.

Though the percentages may vary the corporate trend is universal: **Across 18 industry groupings, women on the whole, may have parity or even dominance at entry level (with the exception of the STEM related industries)**, but, again, the further along the 'pipeline' you go, the greater the drop in women's representation. Particularly in the 'C-suite' roles, women's representation is a fractional amount of the entry level representation (see Figure 8).

97 Corinne A. Moss-Racusin et al., "Science Faculty's Subtle Gender Biases Favor Male Students," *Proceedings of the National Academy of Sciences of the United States of America* 109, no. 41 (2012):16474–79;
Rhea E. Steinpreis, Katie A. Anders, and Dawn Ritzke, "The Impact of Gender on the Review of Curricula Vitae of Job Applicants and Tenure Candidates: A National Empirical Study," *Sex Roles* 41, nos. 7–8 (1999): 509–28;
Madeline E. Heilman and Michelle C. Hayes, "No Credit Where Credit Is Due: Attributional Rationalization of Women's Success in Male-Female Teams," *Journal of Applied Psychology* 90, no. 5 (2005): 905–26;
Joan C. Williams and Rachel Dempsey, *What Works for Women at Work: Four Patterns Working Women Need to Know* (New York: NYU Press, 2014).

98 McKinsey & Company, 2018. *Women in the Workplace*.

99 UN Women, 2015/2016. Available at http://progress.unwomen.org/en/2015/pdf/UNW_progressreport.pdf

100 <https://undocs.org/E/2019/68>.

101 These numbers, despite their differences refer to the so-called 'uncontrolled gender pay gap' which compares average earnings of men and women relative to average earnings of men. While calculations of the uncontrolled or unadjusted gender pay gap can be based on mean or median values, hourly or monthly earnings, the measure can also be weighted by different factors, such as hours worked, occupations chosen, education and job experience, etc. For example, payscale (see <https://www.payscale.com/data/gender-pay-gap>) arrives at a 'controlled gender pay gap' of 2% in 2019 for men and women with the same job and qualifications based on information from 1.8 million people (the 2% measure has shrunk just minimally over the past few years). The ILO, again, calculated a 'factor weighted gender pay gap' (i.e. a weighted average of estimated gender pay gaps by specific subgroups, with weights reflecting the size of each subgroup in the total population of wage employees) and found that in more than 70% of the countries the gap has been underestimated.

102 UN Women, 2015/2016.

103 "Women with children are more vulnerable to these inequalities — also known as the motherhood penalty. In sub-Saharan Africa and South Asia, the gender pay gap is 31 per cent and 35 per cent, respectively, for women with children, compared to 4 per cent and 14 per cent for women without children." (UN Women, available at <https://interactive.unwomen.org/multimedia/infographic/changingworldofwork/en/index.html>)

104 Christofides et al., 2013. Cited in UN Women, 2015/2016.

REPRESENTATION OF WOMEN ACROSS INDUSTRIES

% OF WOMEN BY LEVEL

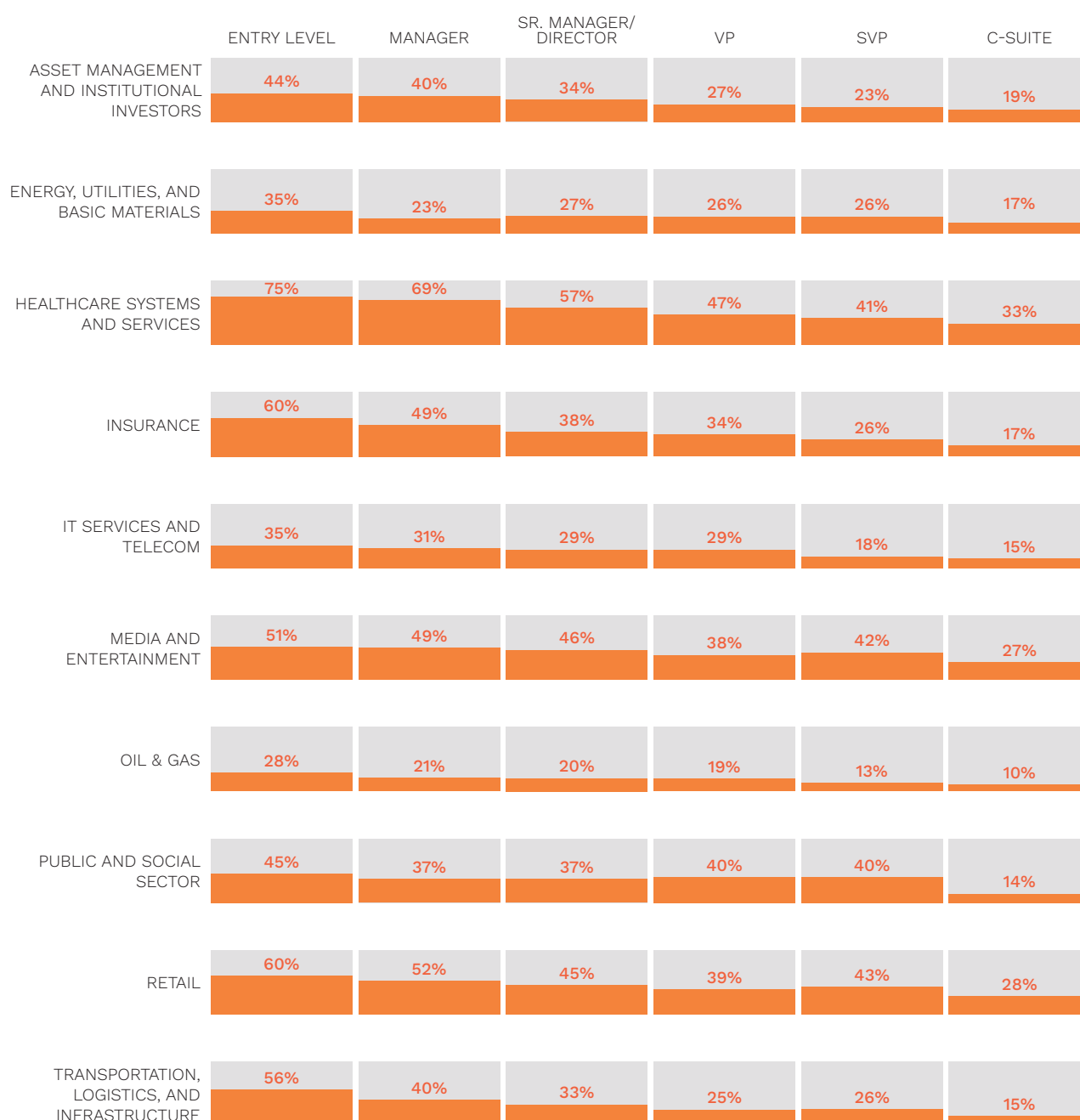


FIGURE 8: REPRESENTATION OF WOMEN ACROSS SELECTED INDUSTRIES IN THE US

Source: adapted from McKinsey & Company, 2018. Women in the Workplace

This is not only true in the USA, perhaps the best global evidence of this trend of women's falling representation with increased seniority in the company come from **Deloitte's global assessment of inclusion within over 7,000 companies, across sectors in 44 countries in the Americas, Asia-Pacific, Europe and Middle Eastern regions.**¹⁰⁵ This work also demonstrated that **no one industry is universally doing better on gender inclusion than others in a global sense.**

105 Deloitte, 2018. Women in the Board Room 5th Edition. A Global Perspective. Global Center for Corporate Governance.

So, when gender inequality is a problem in almost all societies (with some notable exceptions) and across all sectors, why is it so? One conclusion from social psychology and gender studies is that it is **unconscious bias** that operates in a very powerful way to perpetuate gender inequality.¹⁰⁶

Yet, perhaps old-style business only suits a minority of modern society and the rest of us would like something new. What would that look like in the sustainable energy sector? And what does a career in sustainable energy look like? Where can someone get involved?

2.4 Summary

The evidence clearly tells us that gender and other forms of diversity in the workplace are positive for any organisation or sector. In many sectors, women remain underrepresented and sustainable energy is one of them. As countries look to transition to cleaner energy supplies and delivery methods, an opportunity to transition to a more diverse and inclusive workforce exists.

Lack of diversity typically stems from deeply rooted cultural traditions in the workplace and an inherent unconscious bias that plays out throughout organisational structures and processes. Those that embrace diversity will be rewarded with economic gains, less exposure to risk and a more innovative and environmentally aware, and a happier workforce.

Data relating to women's participation specifically in the sustainable energy sector tells us that the sector is not as inclusive and equal as it can be and therefore the sector itself loses out on an opportunity to reach its full potential and benefiting from a diverse work force. While data is still limited and often aggregated into broader gender reporting requirements or sectoral information for the entire energy sector, much recent work has been done to rectify the knowledge gap and move towards a more equitable future supported with consistent evidence. It is recommended to support coalitions of the willing in data gathering, internally and publicly reporting such data for greater understanding. That saying, the work for greater equality does not stop with creating baselines of information and implementing quotas.

Attracting more women and diverse people into sustainable energy also requires deeper understanding of the variety of the career journeys people take and the breadth of skills and opportunities that lie across the sector. We will now turn to exploring these opportunities in more detail.

¹⁰⁶ For a detailed discussion of state-of-the-art gender studies' findings on unconscious bias please revert to Section 1 of the online Technical Working Document.

3 Careers and Skills in the Sustainable Energy Sector

Countries around the globe are undergoing **energy transitions which affect every aspect of production, distribution and consumption of energy** and therefore also the **skills makeup of the changing workforce**.

These transitions require a shift in organisational approaches in terms of management, leadership, personal development, inclusiveness, virtual workplaces and more.¹⁰⁷ Gender mainstreaming in the energy sector is gaining traction globally – from international commitments to implementing national policies¹⁰⁸ and institutional reforms to programmatic project approaches and gender indexing in the workplace.¹⁰⁹ Moving beyond recognising women as only users of energy towards acknowledging their potential to formally participate in the sector as providers and decision makers, will result in increased opportunities for women and men to benefit fully from the energy sector’s economic and investment opportunities. There is a growing interest in the gender-energy nexus literature and in the role of women as agents of change, either as energy entrepreneurs, decision-makers in energy policy or as employees in the energy sector.

The sustainable energy sector is emerging and expanding, ranging from small-scale start up solar companies to data-aggregators who manage decentralised energy systems to policy think tanks – it offers a broad spectrum of engagement opportunities and skill requirements. The emerging sector is not replacing opportunities, but creating net positive employment opportunities¹¹⁰ and therefore worsening the global skills gap¹¹¹ in both technical and non-technical occupations.¹¹² One way to address the skills gap is to integrate women at all levels of the energy value chain – which will lead to more effective and efficient clean energy initiatives, unleash greater return on investments and expand emission reduction opportunities.¹¹³ Continuing business-as-usual is no longer an option. We know that having more women represented will snowball into transformation of the energy sector, advancing the energy transition, socio-economic development and enjoyment of human rights.

3.1 The Need for Skills Diversity

Greater emphasis is needed in the sustainable energy sector to realise behaviour change, unlock innovations in delivering and using energy¹¹⁴, and work more holistically with other sectors of the economy (such as materials, transport, storage and waste, building and urban planning, etc.). These all require broadening the skills set to incorporate individuals with diverse backgrounds and capabilities. Figure 9 below provides an indicative (not exhaustive) overview of the breadth of skills required and opportunities presented by an effective energy transition.

As the energy sector is changing rapidly, so do the opportunities that exist in it. McKinsey speaks about the massive changes that utilities are undergoing, stating that, “*Renewables, distributed generation, and smart grids demand new capabilities and are triggering new business models and regulatory frameworks... The competition for customers is shifting to the online channel; the Internet of Things promises new product and management options. Entrants from the digital economy are disrupting the industrial landscape, while governments and regulatory bodies seek to encourage smarter measuring systems and greener standards for generation and consumption.*”¹¹⁵ And there are new opportunities along the emergent value chains.¹¹⁶

107 Daley, L., P., 2019. Women and the future of work. Catalyst.

108 Kenyan Ministry of Energy, 2019. Gender Policy.

109 Ernst & Young, 2016. Women in Power and Utilities: Index 2016.

110 ILO, 2017. Work in a changing climate: The Green initiative. Report of the Director-General: International Labor Conference. 106th Session, 2017. Report 1. ILO: Geneva.

111 ManPower, 2018. Solving the Talent Shortage. Build, Buy, Borrow and Bridge.

112 ILO, 2011. Occupational and Skill Needs in Renewable Energy. Final report / International Labour Office, ILO Skills and Employment Department, Geneva.

113 USAID, 2018. Advancing Gender in the Environment: Making the case for women in the energy sector.

114 Innovations such as digital technologies, energy storage, e-mobility and prosumer empowerment. IRENA, 2019. Innovation Landscape for A Renewable-Powered Future: Solutions to Integrate Variable Renewables.

115 McKinsey & Company, 2016. The digital utility: New opportunities and challenges.

116 For more information IRENA, 2019. Renewable Energy and Jobs. Annual Review 2019 and UN, 2018. Accelerating SDG 7 achievement. Policy Brief 13. Interlinkages between Energy and Jobs provide an interesting read.

The demand of skills needed will reflect the needs of managing distributed energy resources – with more numerous, smaller projects dotted around, leadership and planning are especially important.¹¹⁷ Or take the smart grid as an overarching communication and technology system in which renewable energy, energy efficiency and other technologies, such as electronic vehicles, interact with one another. Opportunities are becoming more available in sector coupling (electricity, heating & cooling, transport), in smart infrastructure and mobility, traffic flow optimisation, intelligent industries such as hospitals and factories, integrating information in cloud services, cyber security and so on. Not to mention, as technology and automation improves, the future workplace will need greater innovation, productivity and be relationship-focused (therefore needing interpersonal skills).¹¹⁸ *“Successful leaders will need to not only manage and integrate rapid technological advances, but also simultaneously build inclusive teams where all employees thrive.”*¹¹⁹

An immense number of roles are essential to support the transition outside the technical development and operations, including responsibilities around policy reform, system and consumer adaptation, and managing the social, economic and environmental aspects of the changing landscape along the entire supply and value chain. The ILO reiterates that Government and social entities need to create an enabling environment involving policy co-ordination, social dialogue and public awareness, all of which are essential to a successful energy transition.



117 McKinsey & Company, 2016. The digital utility: New opportunities and challenges.
 118 Daley, L., P., 2019. Women and the future of work. Catalyst.
 119 Hariton L., 2019. "Five Tips for Future-Proofing Your Workplace", Catalyst. July 18, 2019.



FIGURE 9: SUSTAINABLE ENERGY OCCUPATIONS SNAPSHOT
Source: Authors' illustration

Examples

1. Energy Supply Utilities: there are new and different opportunities when looking at skills and occupations of a modern renewable energy utility compared to a traditional fossil fuel utility. Large centralised fossil fuel-based energy utilities (as well as nuclear power plants and large-scale hydropower) generate large quantities of power often far from the end consumer and require a national power infrastructure network of transmission and distribution lines. A renewable energy based, modern utility (using wind, solar and micro-hydro) is by nature decentralised, does not rely on a primary extractive resource and is one that has less exposure to work environments that create long-term health problems and environmental degradation.

Occupations in the decentralised context typically include managing multiple power plant sources through a cross disciplinary power grid workforce, maintaining mechanical, electrical and chemical operational equipment (above ground) and managing the proliferation of new information that comes with distributed generation, heating/cooling networks and storage.

Conventional Utility (Fossil Fuel Source)	Modern Utility (Renewable Energy Source)
Mining, oil/gas extraction/transportation	Wind turbine/solar PV technician, panel cleaning
Grid management from centralised source	Cross disciplinary power grid workforce
Linear system power/plant management	Integrated cyber physical systems management
Managing current policy	Rewriting policy and development frameworks

2. Different business models require different skills. In the solar industry, for example, an NGO raising international capital through crypto currency crowdfunding for African based decentralised projects will look different from a domestic solar heating/PV rooftop installation company in North America. The NGO focuses on raising capital, developing front and backend investment, energy management software, creating marketing and communication platforms that speak to a wide variety of investors, and has deep relationships with the off taker/purchaser of electricity, in some cases end users having never had electricity before. The different business models attract different skills sets as the value proposition, customer relationships and segments, revenue streams, activities, resources, and cost structures all vary between business models and therefore broaden the different skills needed for the variety of industry players adapting to local markets. What they all have in common is the operational and corporate interface to run a business, including a heavy customer/off-taker relationship focus and therefore a balance of skills is needed to succeed in the industry combining STEM and non-STEM skills.

3. Roof top Solar PV – The rooftop PV organogram presented below is quite standard globally in terms of core skills needed. It shows a commercial and industrial rooftop installation company structure across the project activities. The segment starts with business development and sales, securing sites and engaging with government on lobbying and regulations, and then the remaining segments are more technical in nature. In smaller companies one person might occupy each position or perform several functions, and as the company grows each project phase may have a divisional head and several people in each functional role.

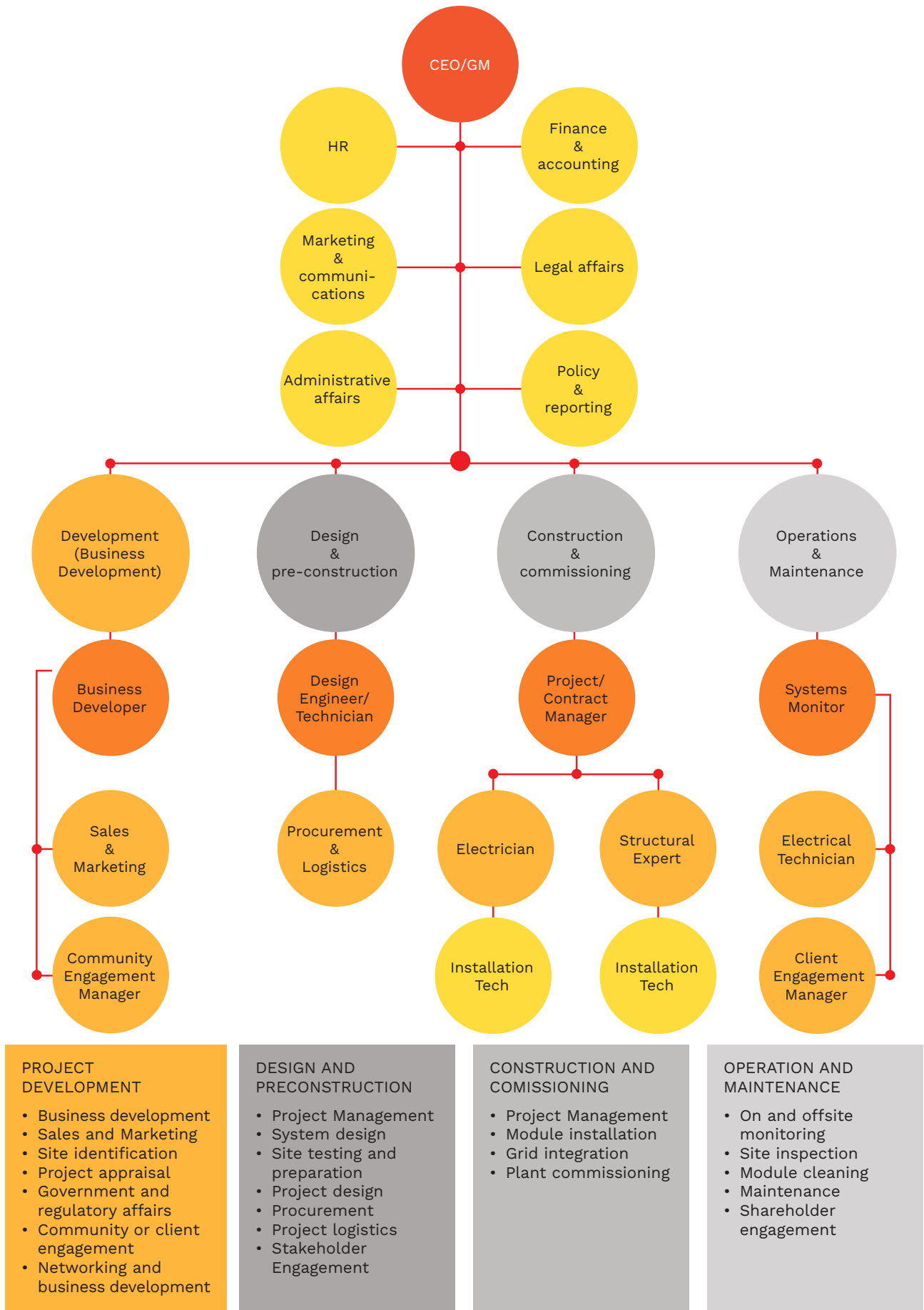


FIGURE 10: EXEMPLARY ROOF-TOP SOLAR COMPANY STRUCTURE, INCLUDING CORE BUSINESS SEGMENTS AND SKILLS
 Source: Adapted from IEA, 2019. Women working in the rooftop solar sector

If the business model of the rooftop PV company is a community-owned solar project, the organogram is expanded as value proposition and key services change. Additional roles necessary for project success expand outside of the installers and may include stakeholder engagement with local government, regulators and policy makers; as well as engagement with off takers and development of legal ownership management contracts, payment schemes; engagement with lenders, project finance/debt structures; and consultation and advisory to manage complex relationships, complete due diligence, and establish reporting mechanisms, etc.

3.2 Non-linear Career Pathways

Despite the many fields of study and disciplines within the energy sector, the journey into sustainable energy is typically a non-linear one, in other words, a non-traditional career pathway. Education and employment experience do not necessarily dictate whether someone will end up in a career in the sustainable energy sector. Whilst convention assumes that a technical or scientific background is needed to embark on a profession in sustainable energy, this is no longer the case because sustainable energy is not just about the science and technology itself, but how we engage with it, create policy around it, and integrate our socio-economic systems within the transition. Backgrounds range from economics and engineering to also include business, finance, geography, biology, environmental policy, social sciences and climate change, project management and law. Other backgrounds include property development, warehouse management, community development, infrastructure investment, international development, blockchain transactions, mergers and acquisitions, software development and coding, and artificial intelligence. This is not to mention all the business management and operational skills that are required to manage and govern every stakeholder within the sustainable energy value chain.

The point of demonstrating the non-linear trajectory is two-fold. One, the **educational institutions are not specific enough to 'lock' someone into a linear path**, and two, **the innovation required of an emerging sustainable energy sector is so broad and immense, that it naturally invites and requires diversity in educational background and individual perspective.**

We can gain some insight into the nature of career paths into and within sustainable energy by investigating individuals' career journeys, which has been done in the interview part of this study. Examples from interviewees are provided in Figure 11. They demonstrate the variety of backgrounds and non-linear career pathways that led the interviewees into the occupations they hold now. From someone with an environmental management degree now working as a renewable energy project developer to an engineer by training who is now leading a 'women in energy' advocacy non-profit; to a law graduate who is now heading up regional sales and business development.

SE career pathways		
Field of Study	Career Path	SE Occupation
<ul style="list-style-type: none"> • Economics • Mechanical Engineering • Finance • Sociology & Anthropology • Civil Engineering • Banking and finance • Policy • Climate Policy • Biomedical Science • Business Management • Accounting • Agricultural Engineering • Bcom, Business and MBA • Social Science, Governance, Policy • English, RE courses • PhD Development Studies • PhD Women's Studies • Physics • Environmental Management • Btech (Electrical/Mechanical) • Bcom Marketing • Blaw, MBA, LLM • Electrical Engineer 	<ul style="list-style-type: none"> • PhD Climate Change and Energy Economics • Energy modeling • International Development • Climate & Energy policy expert • Insurance and RE, environmental policy • Finance & business of energy services • Sustainability consulting • Energy Economics • Green power (Wind) and water • Environmental non profit sector • Energy industry association • Environmental Management • Climate & RE Consultant • E-Commerce and M&A (investment) • Sustainability Consultant • Carbon markets > Strategy > Bid Manager • Marketing and PR (not in SE) • Auditing and Compliance > CFO • CSR Consultant in oil and gas • Transformation and Program Manager • Scientist R&D • Social and Environmental Impact Evaluations • Legal Advisor and council (oil and gas) • EE process engineer (transport) 	<ul style="list-style-type: none"> • Academic and consultant • Energy Specialist private sector • Researcher Climate Justice & Energy • Multi lateral energy & transport • NGO/researcher in off-grid solar • Govt Head of Heating • Academic in energy • Board member private sector energy • Procurement manager PV • CEO of off-grid solar non profit • RE Think Tank • RE private sector • RE Industry association • VP Investment fund/Block Chain Transaction • Climate Change and Energy Consultant • Economic Development Manager (RE) • GM Clean energy advocacy association • Wind Farm CEO • GM NGO Women in SE association • CSR RE Owner and Operator • Contracts Manager and legal advisor (RE) • Director of Business Development and Sales • Deputy Director (RE Policy) • Process Planner (EV and Hybrid vehicles)

FIGURE 11: CAREER PATHWAYS FROM 34 INTERVIEWEES TO EXEMPLIFY THE DIVERSITY OF CAREER PATHS
Source: Authors' illustration (duplications were few and removed and not all interviewees are depicted here)

3.3 Attracting Skills Diversity

The sustainable energy sector needs people from a variety of backgrounds, not just traditional STEM backgrounds. This is particularly relevant when we consider the needs for a sustainable energy transformation of which renewable energy is only a small part.

The message about what Sustainable Energy is and the skills that are required must therefore change. Many initiatives, campaigns, and programmes have emerged to advance women's participation in the sustainable energy sector. IRENA recently provided a list of such networks and associations that act globally, regionally and nationally¹²⁰ such as the

- Women of Renewable Industries and Sustainable Energy (WRISE)
- Women in Solar Energy (WISE)
- Women in Cleantech (WCS) in the US
- Hypatia in Germany
- Women in Sustainability, Environment and Renewable Energy (WiSER) in the UAE
- La Red Mujeres en Energía Renovable y Eficiencia Energética (REDMERE) in Mexico
- Women in Sustainability (WiS) India
- the Nordic Energy and Equality Network (NEEN) in the Nordic/Baltic countries

120 IRENA, 2019. Renewable Energy: A Gender Perspective. IRENA, Abu Dhabi.

- the International Network on Gender and Sustainable Energy (ENERGIA) which operates across 22 Africa and Asia countries

Additional women in energy networks, associations and coalitions of the willing include:

- Rede Brasileira de Mulheres na Energia Solar (Brazilian Women Solar Energy Network)
- Turkish Women in Renewable and Energy Network (TWRE)
- WePower – Women in Power Sector Network in South Asia
- Women in Energy, Pakistan
- Women in Renewable Energy (WiRE), Canada
- Women in Energy Ethiopia
- Women in Renewables Initiative from the Clean Energy Council (CEC) in Australia
- Women in Renewable Energy (WiRE) mentor network
- Women in African Power (WiAP)
- Women in Energy (WONY)
- Entrepreneurial Women in Renewable Energy (EWIRE)
- Women in Renewables Asia (WiRA)
- Women Building Power: African women against destructive resource extraction (WoMin)

An alphabetical list of these networks including respective URLs is available in Appendix 5.

Besides networks and associations, several global and national campaigns have been created to support women and increase participation in the sustainable energy sector. A few of these include:

- **Equal by 30 Campaign**, as mentioned prior is a public commitment by public and private sector organisations to work towards equal pay, equal leadership and equal opportunities for women in the clean energy sector by 2030. The campaign asks organisations, companies and governments to endorse principles, and then take concrete action to accelerate the participation of women in the clean energy sector and close the gender gap.
- **The Electricity Human Resources Canada (EHRC)** offers a variety of tools and resources for individuals and companies wanting to diversify their workforce with women, indigenous peoples, minorities and persons with disabilities; facilitating placements, mentorships, funding for training, and general business assistance for indigenous groups. **EHRC's Leadership Accord on Gender Diversity**, is a public commitment by Canadian employers, educators, unions and governments to promote the values of diversity and inclusion within their organisations¹²¹, and then provides the tools and resources to achieve diversity and inclusion goals. In November 2019, EHRC has published a **Compendium of Success Stories** of their signatories.¹²²
- **The Diversity Challenge Campaign** led by CEO Abigail Ross Hopper, Solar Energies Industry Association (SEIA), is an effort to encourage members and the energy industry more broadly to make diversity and inclusion a core part of their cultural identity. The Diversity Challenge asks participants to take the PWC CEO Action for Diversity & Inclusion Pledge¹²³ and join the conversation on social media about diversity & inclusion using the #DiversityChallenge hashtag. Nearly 80 energy companies made commitments to diversity on social media, signed the formal pledge, and are already taking steps toward creating a more equitable work environment.

Much of the success of women's networks, associations and campaigns is attributed to creating a culture of women in energy. They are widespread and exist in most countries and will hopefully be able to contribute more accurate and consistent data collection towards Equal by 30, IRENA, C3E/IEA, and GETI over time.

There are some tools and information that is publicly available for those investigating an opportunity or career in sustainable energy. For example, the **ILO provides an overview of low, medium and high skilled occupations across RE technology value chains** (wind, solar, hydropower, geothermal and bioenergy), including crosscutting and enabling positions.¹²⁴ To demonstrate the variety of skills and present the complex information in a concise user friendly way, the **US Department of Energy, Office of Renewable Energy**

¹²¹ <https://electricityhr.ca/workplace/diversity/accord/>.

¹²² <https://electricityhr.ca/wp-content/uploads/2019/11/Accord-Compendium-FINAL-WEB.pdf>.

¹²³ <https://www.tfaforms.com/4728149>.

¹²⁴ ILO, 2011. Occupational and skill needs in renewable energy: final report / International labour office, ILO skills and employability Department. Geneva.

and Energy Efficiency, developed an interactive career resource, including career maps, job descriptions, videos, and links to understand a variety of clean energy sector occupations¹²⁵ (see Box 5).

The Global Women’s Network for the Energy Transition (GWNET) hosts a ‘Women in Energy Expert Platform’ whose close to 1,000 members demonstrate the diversity of roles and skills of women already active in the sector.¹²⁶ The ‘Women in Wind Global Leadership Program’, a partnership between the Global Wind Energy Council (GWEC) and GWNET, is “designed to accelerate the careers of women in the wind industry, support their pathway to leadership positions and foster a global network of mentorship, knowledge-sharing and empowerment.”¹²⁷

Other countries are hosting information portals around opportunities for women in the sustainable energy field. Such as in South Africa, these may include involving private industry to present at different fora, then hosting a website that provides resources and opportunities.¹²⁸

Box 5: Map a Career Path – US Department of Energy Interactive Tool

The Career Pathway Maps¹²⁹ cover technologies: bioenergy, fuel cells, wind, and solar technologies, providing job descriptions, skills requirements and education levels across the value chain segments and skill levels. The tool demonstrates how careers and skills are transferable between segments as skills advance. Uniquely, the resource indicates entry points for veterans. A user can go further, interacting with videos and job descriptions, highlighting women in various roles. While the tool is comprehensive it leans towards STEM skills as critical occupations with additional avenues for communications, training, outreach, legal and marketing. The two images below demonstrate snapshots of the interactive tool, one, the career possibilities of an electrician within the Hydrogen and Fuel Cell subsector, and the second, a pathway of rooftop solar installer who may eventually become a mechanical engineer in manufacturing of solar technologies.

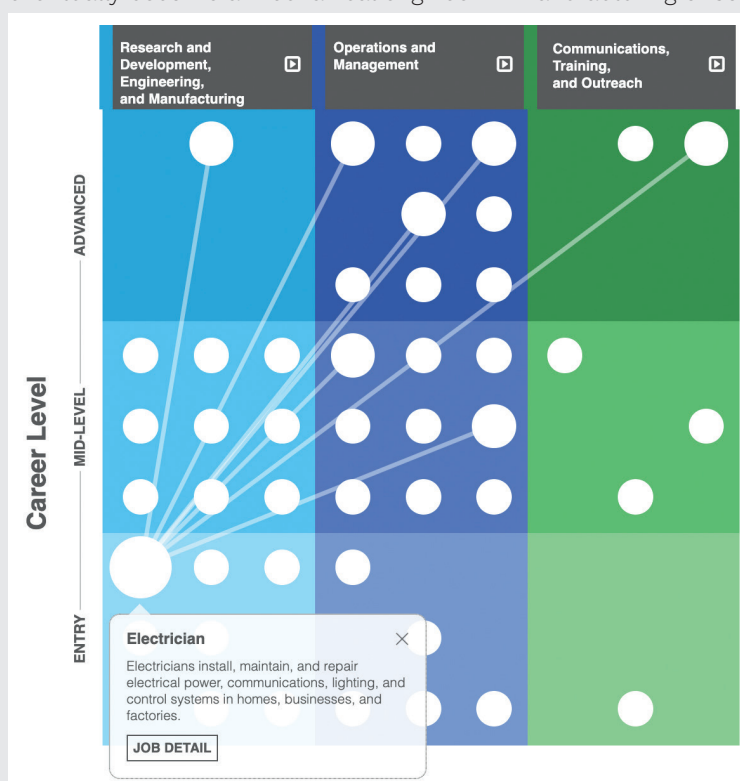


FIGURE 12: HYDROGEN AND FUEL CELL CAREER PATHWAYS OF AN ELECTRICIAN

125 US Department of Energy, Map a Career in Clean Energy.

126 <https://www.globalwomensnet.org/members/>.

127 <https://gwec.net/women-in-wind/about-the-program/> or <https://www.globalwomensnet.org/the-women-in-wind-global-leadership-program/>.

128 Department of Energy South Africa, Programmes and Projects, Women Empowerment, <http://www.energy.gov.za/files/PPMO/women-empowerment.html>.

129 US Department of Energy, Map a Career in Clean Energy, <https://www.energy.gov/eere/education/map-career-clean-energy>.

3.4 Summary

There is recognition that women are vital to the sustainable energy sector and the success of a more rapid energy transition. However, we need to attract, retain and promote more women, and invite more diversity of skills into the sustainable energy field. The skills required for a prosperous sustainable energy sector/energy transition, are diverse (and there is often not an obvious career pathway). So what can be done?

- Update the message of what sustainable energy aims to achieve and emphasize diversity, inclusion, disruption, democracy, and innovation;
- market the variety of current and future careers opportunities and career paths in partnership with educational institutions;
- create inclusive and incentivising programmes and policies for women and girls in STEM and non-STEM positions;
- integrate gender mainstreaming into training policies and programmes;
- raise the profile of the sustainable energy sector, improve diversity and inclusion policies to make the sector a desirable sector to work in;
- transform organisational and company culture towards greater diversity and inclusion, removing unconscious bias through processes;

... and through that hopefully attract more women!

We now move onto reviewing real world solutions to increase women's participation in the sector. Interviews in which women and men discussed their perceptions of working in the sector and reflected on gender equality are structured into themes and trends, which are then extracted and applied to a structural and environmental analysis.

4 Sustainable Energy Workplace Insights

4.1 Sector Interviews

In order to provide narrative context to the existing literature, interviews were undertaken with both women and men from a geographical spread working within different aspects of the sustainable energy sector. **The focus is on gender in the sustainable energy workplace.** Reflections from interview participants were used twofold – firstly to identify common themes (Section 4.2) and secondly to analyse these themes using a Structural Environmental Assessment framework (Section 4.3).

A total of 34 qualitative interviews were carried out with 31 women and 3 men, and quotes are presented anonymously in the online Technical Working Document (available at <https://www.globalwomensnet.org/technical-working-document/>). Men were included to allow for a more balanced perspective. Interviewees were selected from German Energy Partnership countries and the GWNET network.

As qualitative data, the purpose of these interviews is not to gain ‘generalisable information through a representative sample’; rather it is to give an indication of the breadth and depth of experience across the sector and across nations. In doing so we provide a range of perspectives on what it means to be in the sustainable energy workforce today, whether at early, mid or senior career level and how participants see that women could be more thoroughly engaged in the sustainable energy workforce.

We examined individuals’ journeys into the sector and asked interviewees to reflect on their own experiences of working in such a dynamic field as sustainable energy. Consideration was given to gender, diversity and inclusion in the workplace, and whether there were unique aspects presented by the sustainable energy sector in the context of their current careers and foreseeable career progression.

The main outcomes of the interviews are to provide personal and individual illustrations for the main themes as they occur in existing literature, to identify common themes, barriers, enablers and, ultimately, to sketch opportunities and formulate recommendations on how to increase diversity within sustainable energy.

Box 6: Question Guide for Semi-structured Interviews

1. Tell me about your career path into the renewable energy/energy efficiency sector?
2. Does your company have an Equal Opportunity policy or any Gender Equality policies?
3. If yes, tell me how well you think they are implemented?
4. If no/I don’t know, probe around bias reduction strategies/quotas in recruitment/parental leave/carer leave/return from leave/pay gap/board diversity/management diversity etc.
5. Can you reflect on barriers or enablers of women working in the sustainable energy sector that we haven’t spoken about?
6. What opportunities and strategies would you suggest be implemented for greater gender equality/participation?
7. What advice would you give women wanting to enter the sector?

4.2 Themes Emerging from Interviews

All the views represented here, are **individuals’ statements from interviews that have been aggregated to identify common themes. Certain themes are uniquely relevant to sustainable energy whereas others are applicable to the broader systemic challenges of diversity in the workplace.** In order to realise greater gender and diversity in the sustainable energy workplace, it is important to understand both aspects.

Observations by interviewees relating specifically to differences across the sustainable energy sector were noted as follows:

Centralised vs decentralised projects: Typically, larger/utility scale energy projects attract larger multinational firms which operate on corporate ownership models. Here, in the corporate setting, the gender balance in engineering & technical departments is better. This may be due to the perception of job security and lower risk of unemployment. It may also be a result of the diversity of roles needed in large-scale projects, however, it may also be because the companies themselves are changing.

“As these cool thrifty nimble tech companies come into the mix and disrupt the incumbent utilities and monopolistic centralized structures that have traditionally managed the sector, the smaller companies in the eco sustainability space are more attractive to the millennial generation and we will start to see greater gender equality.”

(Woman, Executive, Asia)

Field level implementation for off-grid energy projects is usually done by smaller teams than centralised utilities and dominated by men. However, where the focus is more on the end user needs in small scale off-grid projects, more women can be found on the implementation side.

Renewable Energy: Seems to attract people who are more interested in work that aligns with their values, who think about what impact their work has on the future, as well as broader ethical issues. Compared to conventional energy, renewable energy attracts women and younger generations.

“Renewable Energy is a new sector, less old school traditions, more opportunities for innovation and values.”

(Man, Solar Consultant, France)

More women are interested in the renewable energy sector (over the conventional energy sector) once they are exposed.

“I never thought or imagined I’d pursue a career in renewables, and now I can’t imagine working in any other sector.”

(Woman, Private Sector, Brazil)

However, channels to the sector are informal and women are inhibited further as they lack the informal networks necessary to enter the sector when compared to men.

“[the sustainable energy sector] is a pretty closed loop environment, if you aren’t engaged in it from a professional standpoint you aren’t often aware of much unless you are reading the news...”

(Woman, Executive, Asia)

Energy Efficiency: is typically more male dominated and as it is a longer-existing discipline, it still follows traditional structures. It is often a very technical and site-based line of work, which typically attracts few women. Women tend to be found in industry associations, either in leadership positions or administrative functions rather than in technical and financial or investment positions.

Energy Finance/Start-ups: Women have a harder time accessing and raising finance for shareholding, investment and/or raising capital for sustainable energy projects.

“As a female founder, I must have a better track record than men, I’m scrutinised heavily and it is difficult to find funding.”

(Woman, Advisory and Investment, South Africa)

“Globally, women only receive about 2% of venture capital, and [in sustainable energy] this is less.”

(Woman, Executive, USA)

Sustainable energy and tech start-up incubators are primarily men-led companies and tend to not engage

with gender and inclusion where larger companies are not allowed to ignore it, either from national or investor pressure or pressure from employees. However, ignoring gender and inclusivity poses a risk for the company and the sector further down the line, as rewriting company culture is harder to achieve the longer you wait.

Key themes from the interviews were aggregated, and findings have been organised as highlighted in Figure 13. The interview statements themselves are expanded upon in Section 2 of the online Technical Working Document.

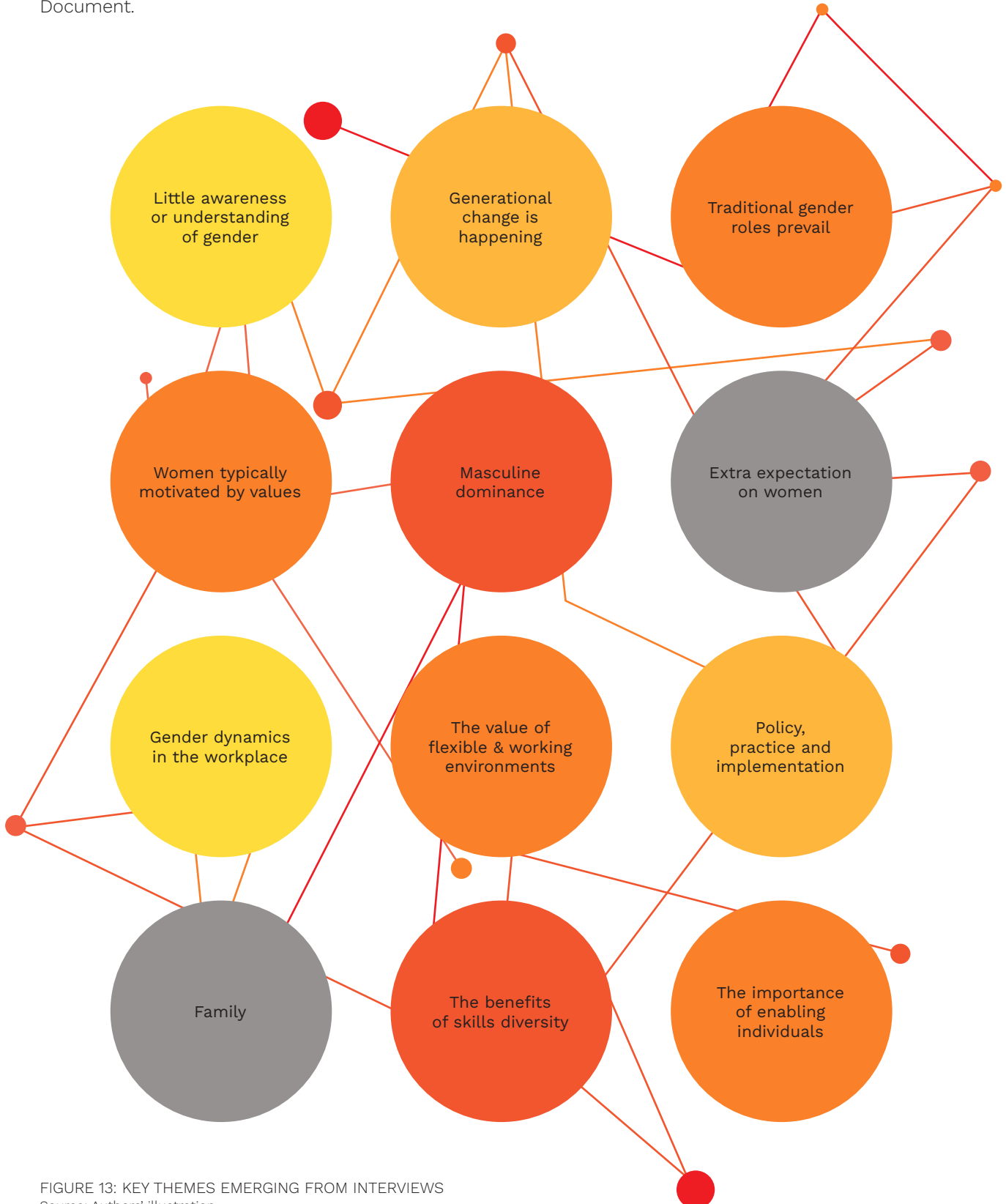


FIGURE 13: KEY THEMES EMERGING FROM INTERVIEWS
Source: Authors' illustration

4.3 Structural Environmental Analysis Framework

The Structural and Environmental Analysis (SEA) Framework was designed by USAID as a way to analyse diverse context, to provide contextual insight into the barriers to and enablers of change, thereby suggesting multi-level contextualised behaviour change strategies (see Appendix 4 for more details on the framework). It is effective because it encompasses all levels at which change must occur for it to be sustained. In this context 'environment' refers to the workplace within the sustainable energy sector.

The purpose is to deconstruct access issues in a way that suggests multilevel strategies for dealing with them. Interview participants identified barriers to, and enablers of, more gender inclusive workplaces in the sustainable energy sector as they saw it; suggesting multi-level ways of dealing with the barriers and promoting enablers.¹³⁰ Potential solutions as identified by the authors are included in the analysis extract in Appendix 4 and in the online Technical Working Document.

The levels of the analysis are Individual, Environmental, Structural and Super-structural. Individuals can only make lasting change if the structural and environmental level context supports the change. This is called creating an 'enabling environment'.

On an **Individual Level** we think about attitudes, beliefs and knowledge, as well as skills and training.

The **Environmental Level** encompasses our communities, workplace or study environment, the socio-economic environment and potentially religious or spiritual community. For the purposes of this study we are looking closer at the workplace and educational environment, in which recommendations will flow; but communities and other environments may have just as big of an influence.

The **Structural Level** is the institutional level, and comprises government, legislation and in terms of the sustainable energy sector, industry bodies and associations.

Lastly, the **Super-structural Level** includes international bodies and NGOs such as the UN, ILO, World Bank and the conventions, treaties and trade arrangements in which they operate.

Super-structural influence may be supportive (human rights and status of women conventions, treaties and International Organisations' legal framework), and useful for making structural-change arguments, but the most crucial elements for lasting change for individuals is to create an **enabling environment** at the **Structural and Environmental Levels** through the most contextually appropriate ways.

In this instance, our analysis was based on the question:

What can we do to increase women's employment in sustainable energy?¹³¹

Findings: Individual Level

Participants in our interviews articulated the barriers to and enablers of women's participation in sustainable energy. Barriers at the individual level commence when children are small: gender segregated toys; gendered differentiation of roles and the beliefs around girls' capabilities in STEM fields. These are clearly issues of **gender role stereotyping and unconscious bias**. During our own data collection phase, one of the report authors found this example of gender stereotyping in toys at her local store.



FIGURE 14: GENDER ROLE STEREOTYPING IN GIRLS' TOYS
Source: Authors' photograph

¹³⁰ Definitions:

Barrier = something blocks or prevents your desired goal (Equitable employment for women in sustainable energy)

Enabler = something that facilitates or promotes your desired goal (Equitable employment for women in sustainable energy)

Solution = deconstruct the barrier & promote the enabler to achieve the goal – practical actions.

¹³¹ See the online Technical Working Document, Section 3 for the Structural Environmental Framework analysis of the interviewees' responses.

It is a building bricks set specifically targeted at girls, which may, perhaps, interest girls in construction, but they construct their own dystopian kitchen, where the female toy sits and drinks alone.

Barriers for individual women once they are in the sustainable energy sector were expressed by participants as **gender dynamics in the workplace** and **career interruption for family**.

Enablers were all about the experience of **stepping outside restrictive gender roles** from a young age; **the visibility of women as role models** in the sector and when already in the sector, **family and flexible work supporting companies**. So some are doing it well (see Section 5) and they should be used as role models to show it can be done.

Findings: Environmental Level (Workplace and Educational Institutions)

Barriers at this level were very much about **the overwhelming masculinity of the sector** and how **hostile it could be to the female life course**: from language in job advertisements, to recruitment practices, promotion (or lack thereof), the anxiety about getting the timing of your pregnancy and child rearing right, the impact on career and the inflexibility of the sector, were all mentioned.

Enablers included the understanding that some companies have got gender policy right: inclusiveness, flexibility, external training for fresh ideas and inclusive leadership.

Findings: Structural Level (Government and Industry Associations)

Barriers at the structural level again related to the dominant masculinity and ‘men’s club’ feel to the sector as a whole: many executives have migrated from the established energy sector and brought their old school-work practices with them as sustainable energy became more corporatised. **Larger companies have pushed out smaller players**, which could be seen as a good or a bad thing: larger global companies were more likely to have inclusive workplace practices. Others felt it had little apparent impact on women, as it was perceived that women were more likely to avoid the high-risk culture of start-ups.

Enablers included companies who recruited talented women early in their careers, had good policies and ensured that all relevant gender metrics were gathered and published on pay, policies and the like.

Other enablers included senior men who were willing to speak out on gender and younger men seeking parental leave and gender equitable relationships.

The nature of the sector itself was also seen as a potential enabler: the reputation of the sector for being new and clean and fresh, with the right leadership from articulate women could take on that mantle as an equality industry.

Findings: Super-structural Level (International Organisations, NGOs, Governments)

Interviewees felt that many **international documents** were **gender-blind** and that this was a significant **barrier for women to progress**. Given the fact that practically all international bodies that have a bearing on sustainable energy – such as the UN General Assembly, UNFCCC, or ILO – have adopted significant decisions directly addressing gender issues¹³², these views expressed demonstrate the need for international organisations to propagate more effectively what they are doing to a wider public that is not specialised in international relations.

The enablers mentioned at the Super-structural level were many and included women’s networks and associations and other international coalitions in addition to the tools provided by the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), the SDGs and a number of others to ensure women stay on the sustainable development and energy agenda. All such documents and conventions provide excellent points of leverage in negotiations at the structural level.

¹³² See, for example, the Lima Work Programme on Gender (<https://unfccc.int/topics/gender/workstreams/the-lima-work-programme-on-gender>) and the enhanced Lima Program on Climate and Gender https://unfccc.int/resource/cop25/cop25_auv_13gender.pdf agreed upon at CoP25 in December 2019 in Madrid; the ILO Mandate on Gender Equality (<https://www.ilo.org/public/english/gender.htm>); and SDG 5 which addresses gender equality within the 2030 Agenda for Sustainable Development (<https://sustainabledevelopment.un.org/sdg5>).

4.4 Summary

Interviews with women and men working within sustainable energy provide an extensive range of contextual and thematic evidence of why – and how – gender is imbalanced across the sector and what enablers would facilitate more women's employment. The structural and environmental framework deconstructs this dense information for a nuanced view for practical solutions.

The analysis demonstrates that despite what we know about the benefits of equality and inclusion, gender norms and stereotypes prevail. The lack of awareness of gender and gender related issues, and unconscious bias with both men and women as individuals, is a significant barrier to inclusive change. This generalised community lack of awareness is then inscribed into organisational barriers and perpetuates structural bias processes. Though relatively unaware of the causes, women experience significant gender issues during their working journey, and men are equally unaware of the negative impact their decisions, actions and language have on women, but also on the business and the sector itself.

Accordingly, gender, diversity and inclusion education across the industry is a priority. It goes without saying that young people, parents and the institutions that surround our youth would also greatly benefit from greater gender awareness. Engrained stereotypes are hard to undo and gender bias should not be an obstacle to allowing a person's potential to flourish.

In order to address women's inclusion in the workforce, solutions and strategies must be applied at every level from the individual, to the working and home environment and through to the structures where national policy and governments converge. The lack of gender inclusion action within the sector demands a multi-level strategy based on deconstructing the barrier and promoting the enabler to achieve the goal – practical actions related to women's employment journeys into sustainable energy.

The interviews and the analysis of the data gathered in this study provide rich and detailed information that will assist the 'coalitions of the willing' to work together to create contextually relevant sector-wide advocacy and social media campaigns to support women and girls to see a future for themselves in the sustainable energy sector.

5 Strategies for Inclusion: Best Practice and Selected Examples

This section outlines strategies and best practice for inclusion and women's empowerment, with examples to contextualise these for the sustainable energy sector. Whilst there are some aspects that may be unique to the sustainable energy context (e.g. a focus on STEM, or the infancy of the sector) there is no need to reinvent the wheel. Therefore, we look to best practice in inclusion from within the sector as well as from other sectors.

Given the evidence of the uneven playing field and barriers to women's equitable advancement, how do we fix it? The simple answer is gender equality. McKinsey & Company¹³³, The World Economic Forum, the Women Empowerment Principles of UN Women and UN Global Compact companies who have adopted the principles, and countless numbers of other research groups and individuals have demonstrated the importance of gender equality in the family^{134,135} the community¹³⁶, within the corporate sphere, in national policies and legislation, and to the global economy¹³⁷.

However, structural transformation to achieve empowerment, and ultimately gender parity, takes time and commitment from all stakeholders. The Nordic countries of Iceland (1st), Norway (2nd), Sweden (3rd) and Finland (4th) routinely top the World Economic Forum Global Gender Gap Index.¹³⁸ This is no coincidence, but the result of decades of political commitment and hard work. It demands structural change and transformation of social norms and gender roles at all levels of society, beginning with reforms of political representation, labour market reform and law reform. Other countries have taken one or another leaf out of the Nordic countries 'playbook'; countries such as Nicaragua (5th) which has recently overtaken Rwanda (6th) with constitutional commitments to parliamentary quotas.

Box 7: Private Sector Example – The World's Most Diverse and Inclusive Companies, Accenture's Commitment to Cultural Change

Accenture has held the top spot of the world's more diverse and inclusive companies. To compile the Index, Thomson Reuters assessed publicly available data for more than 7,000 publicly traded companies around the world. The companies were measured on 24 separate metrics across four key categories: Diversity, Inclusion, People Development and News Controversies. The Index was then calculated by weighing each metric based on importance in the market and how each company compares with its peers. *"We believe that diversity is a source of innovation, creativity and competitive advantage and creates a workplace where everyone feels equally accepted with a real sense of belonging,"* said Ellyn Shook, Accenture's chief leadership and human resources officer. Some of the targets and initiatives include:

- Creating a diverse board of directors. Board of directors is diverse in terms of its geographic and gender representation, with people from six countries across four continents and five (42%) women, including its lead director.
- Advancing workplace equality. Accenture set a goal of achieving a gender-balanced workforce by 2025, the company's global Pride Ally program has more than 110,000 members, and its global Disability Champions network has 22,000 members.
- Developing talent. Accenture invested US\$927 million in continuous learning and professional development in its 2018 fiscal year, including substantial investments in re-skilling to help its people stay relevant in key areas such as cloud, artificial intelligence and robotics.

133 McKinsey & Company, 2017. Women Matter. Time to Accelerate. Ten Years of Insight into Gender Diversity.

134 Adema, W., 2013. Greater Gender Equality: What Role for Family Policy? Family Matters. No. 93, pp. 7-16.

135 Lomazzi, V., Israel, S. & Crespi, I., 2019. Gender Equality in Europe and the Effect of Work-Family Balance Policies on Gender-Role Attitudes. Social Sciences. Vol 8(5), pp. 1-29.

136 VicGov., 2018. Gender Inequality Affects Everyone Throughout their Lives, <https://www.vic.gov.au/gender-inequality-affects-everyone>.

137 McKinsey Global Institute, 2015. The Power of Parity: How Advancing Women's Equality Can Add 12 Trillion to Global Growth.

138 World Economic Forum, 2018. Global Gender Gap Report.

Convening a global dialogue. Accenture publishes annual thought leadership that aims to advance the conversation around workplace equality. This year, the company's 'Getting to Equal'¹³⁹ report revealed how a workplace culture of equality is a powerful multiplier of innovation and growth.

We will now look, in the broader sense, at what is required to genuinely *empower women and girls*.

Box 8: Correctly Defining the Empowerment of Women

While the word 'empowerment' is widely used in a lay sense, it is used in this study with a **very specific and technical meaning**. The term was first coined by feminist economists from the global south, beginning in the 1970s¹⁴⁰ and those feminist academics, too numerous to mention, who later supported their work. Fundamentally, in order to become truly empowered, women require two things. The first is **advancement**: this might include increased resources including income, employment and other resources such as human capital (education, skills, training); financial capital (loans, savings); social capital (networks, relationships, mentors); and physical capital (land, machinery, tools, inventory). This is **women's economic advancement**.¹⁴¹ The second element of empowerment is *transformation*. This requires that women also possess the power and ability to make decisions and control the use of these newly gained skills and resources.¹⁴² To increase women's power and ability, those seeking change must integrate strategies to transform underlying structural gender roles and social norms that reinforce and perpetuate gender inequality.¹⁴³ Put more simply:

Empowerment = Advancement + Transformation

Any interventions looking to advance women's situation must spread their focus from women to gender roles. A broader understanding of the diversity of roles of men and women and people of diverse gender identities within the family, and the community, is necessary to devise culturally appropriate strategies for the advancement of women. This will result in a **transformation of gender norms** in a particular context to allow women and men and people of diverse gender identities to undertake their new roles without the risk of being exposed to violence.¹⁴⁴

In a business sense and in sustainable energy more broadly, it is not enough for women to gain access to more jobs or training or 'self-confidence' or 'self-assertiveness' or simply to 'lean in'. What is needed is that the working environment within the business or sector must **TRANSFORM** to support women to exercise their own social power and autonomy without the risk of being socially marginalised or experiencing sexual harassment or sexual violence, which is a common way of 'punishing' women – often those in more senior roles¹⁴⁵ – who are perceived to have stepped outside their traditional gender roles.

139 Accenture, 2019. Getting to Equal 2019: Creating a culture that drives innovation (<https://www.accenture.com/us-en/about/inclusion-diversity/gender-equality-innovation-research>).

140 Batliwala, S., 1994. The Meaning of Women's Empowerment: New Concepts from Action. In Population Policies Reconsidered: Health, Empowerment and Rights, edited by G. Sen, A. Germain & L. Chen. Cambridge, MA: Harvard University Press.

141 Golla, A., Malhotra, A., Nanda, P. & Mehra, R., 2011. Understanding and Measuring Women's Economic Empowerment: Definitions, Frameworks and Indicators. Washington: ICRW.

142 Kabeer, N., 2005. Gender Equality and Women's Empowerment: A Critical Analysis of the Third Millennium Development Goal 1. Gender & Development. Vol 13(1), pp. 13-24.

143 Cornwall, A. & Rivas, A., 2015. From 'gender equality and 'women's empowerment' to global justice: Reclaiming a transformative agenda for gender and development. Third World Quarterly. Vol 36(2), pp. 396-415.

144 Eves, R., 2018. Do No Harm Research Project Report: Women in Formal Employment Survey. DPA & IWDA.

145 McKinsey & Company, 2018. Women in the Workplace.

5.1 Establishing and Implementing Quotas

Realistically, it is impossible to remove all bias: human brains are masterful at pattern recognition, all of which begins with social learning through our experience growing up in our respective cultures. It happens subconsciously without our knowledge or desire. It is for this reason that quotas are useful.

Box 9: Public Sector Example – Rwanda, Mexico and South Africa: Implementing Quotas for Gender Parity

The best example of changing what leadership looks like for a positive result is that of Rwanda. In 2003, Rwanda adopted a new Constitution with a mandatory minimum 30% gender quota in all decision-making bodies. Prior to the election women made up 23% of the Rwandan parliament. At the election in 2003 with the 30% quota, 49% of elected parliamentarians were women. Without further changes to the quota in 2008, 56% of those elected were women; in 2013 64% elected were women and in 2018, 61% elected were women. Mexico became a top performer in 2018, with 49% of legislators being women, resulting from 15 years of work quotas and efforts to increase participation.¹⁴⁶ The visibility of women in leadership positions redefines people's unconscious bias against women as leaders and the effect is sustained through genuine merit.

In 2019, South Africa achieves gender parity within the ministerial cabinet despite reducing the number of ministers from 36 to 28 yet included areas of national importance such as employment and infrastructure development and committing to the party's aim of diversity in youth, gender, geographical representation and experience.¹⁴⁷

As of 1st of January 2019, only nine countries achieved gender equality in terms of women appointed for ministerial positions. These were Spain, Nicaragua, Sweden, Albania, Colombia, Costa Rica, Rwanda, Canada and France. However, globally, women are highly represented in environment/natural resources/energy portfolios.¹⁴⁸

Box 10: Private Sector Example – EU, Gender Diversity on European Boards of Listed Companies

EWoB, the European Women on Boards Organisation in their 2016 study¹⁴⁹ pointed out an increase of the proportion of women on European boards from 13.9% in 2011 to 25% in 2015 within the companies of the STOXX Europe® 600 index.

This unprecedented increase in numbers of women that have been appointed to non-executive or supervisory board positions over these years seems to have been attributable to the imposition or threat of board quotas. At the time of the study, out of the 12 largest European markets, five had mandatory quotas on female board membership (Belgium, France, Germany, Italy, and Norway) and 10 had either an optional quota or a comply-or-explain best practice recommendation concerning board gender diversity. Yet, there are still insufficient numbers of women serving in Chair, CEO and executive director positions, and as Chairs of the major board committees.

The **Ethics and Boards European Gender Diversity Index (GDI) 2018**¹⁵⁰ ranks European companies by the following indicators:

- Female Representation on the Board of Directors / Supervisory Board
- Woman Chair of the Board of Directors / Supervisory Board
- Woman CEO or Chair of the Executive Board

146 O'Neil, K., 2018. Mexico's Female Legislators Are No Silver Bullet for Gender Inequality. Blog Post. September 4, 2018.

147 World Economic Forum, 2019. South Africa's cabinet is now 50% women for the first time ever.

148 UN Women, 2019. Women in Politics: 2019 map.

149 EWoB, 2016. Gender Diversity on European Boards. Realizing Europe's Potential: Progress and Challenges.

150 https://europeanwomenonboards.eu/wp-content/uploads/2018/11/ewob_eb_ranking.pdf.

An analysis of 200 European listed companies from the STOXX Europe® 600 index¹⁵¹ found that in 2018 57.5% of companies have at least 1/3 of women on the Board, while 9% of companies have 20% or less of women on the Board.

The top 3 companies in the category ‘Woman Chair of the Board / Supervisory Board and % of Women on the Board’ were:

1. Sodexo (France): 53.8%
2. Terna (Italy): 50%
3. Siemens Gamesa Renewable Energy (Spain): 46.2%

The top 3 companies featuring in the category ‘Woman CEO / Chair of the Executive Board and % of Women on the Board’ were:

1. GlaxoSmithKline (The United Kingdom): 45.5%
2. Wolters Kluwer (The Netherlands) and Proximus (Belgium): 42.9%
3. Engie (France): 42.1%

The expression ‘You can’t be what you can’t see’ is time and again borne out by experience. Therefore, role models are crucial for the realisation of career goals and a lack of role models who represent your cultural, social, ethnic, or gender traits make the challenge much harder. However, if more women can be seen in leadership roles, consciousness changes rapidly.

In a business sense, companies truly committed to overcoming unconscious bias will adopt quotas to make that transition. Both Rwanda and Nicaragua demonstrate that this is a viable strategy with women routinely elected in numbers greater than the quota over multiple elections cycles. Once women are seen in leadership roles and their value is understood, the quota is no longer necessary. Companies can choose to do the same for boards, executives, managers and recruits at all levels.

One renewable energy asset management company reported an inclusive quota policy, where 40% of new hires must be persons from disadvantaged groups, namely, women, disabled, LBGT, and ethnic. **Megan Schultz, USA based Invenergy’s Senior Vice President of Structured Finance says,**

“We’ve made significant strides in hiring women at our company—in 2017, 48% of new hires at our headquarters office in Chicago were women.”¹⁵²

Quotas make women visible in leadership roles. Of course, it is then up to those women to perform and ensure that they do the job well, but this has as yet not represented a significant problem.

Resisters of quotas say they are undemocratic and put unqualified women into positions rather than qualified men, thereby denying merit. **The undemocratic argument rests on the assumption that the system we have now is democratic,** but given the evidence of bias in favour of men, this is clearly not the case (see the online Technical Working Document, Section 1, ‘The Myth of Merit’). The current system is very undemocratically skewed to favour men.

The second argument that under-skilled women will be advanced over more meritorious men rests on the assumption that men truly have – always and everywhere – greater merit in leadership than women. Again, the evidence demonstrates that this is not true. This understanding of ‘merit’ is a product of the collective bias around men’s ‘natural greater ability’ as leaders, all of which has been disproven. Internalizing these arguments against quotas, some women might **say that they do not want to be part of a quota to get a role, they want to be ‘promoted on merit’, which only goes to show that women too at times operate out of prevailing cultural biases.**

¹⁵¹ https://europeanwomenonboards.eu/wp-content/uploads/2018/11/ewob_facsheet.pdf.

¹⁵² Invenergy, 2018. Promoting Women in Renewable Energy. Blog June 11, 2018

Further evidence, from a group of researchers from the London School of Economics on the impact of representational quotas in Swedish politics in the 1990s, demonstrated that:

*“Far from being at odds with meritocracy, this quota raised the competence of male politicians where it raised female representation the most.”*¹⁵³

Box 11: Private Sector Example – Turkey, Gender Equality Loan

Garanti BBVA recently signed a **gender equality loan with Turkish company Polat Energy**.¹⁵⁴ The \$44-million loan includes both a \$21.4 million cash portion, which matures in eight years; and \$22.6 million non-cash portion, which matures in 11.5 years. The loan will finance the construction of Turkey’s largest wind farm (48MW). **The company’s performance will be annually assessed based on a series of gender criteria, and improvements in their performance will also enhance the terms of the loan. Criteria included in the assessment entail activities such as postnatal return-to-work programmes, equality in new recruitment, prioritizing enterprises with female-dominated partnerships in the supply chain, equal pay, policies to prevent harassment, and training to address discrimination against women.** The score from the initial assessment will serve as the baseline. Improvements in subsequent assessments will translate into better terms for the loan: lowering the interest rate for the cash portion of the loan and reducing the commission for the non-cash portion. Garanti BBVA’s Human Resources team will be on hand to provide support in developing these programmes if so required by Polat Energy. In addition to rewarding Polat Energy for improving its gender equality, the gender loan will hopefully encourage other companies to follow suit.

Box 12: Private Sector Example – Schneider Electric, Attracting and Retaining Women

Schneider Electric provides integrated efficiency solutions in power/energy management, combining energy, automation and software. In the past two years, the company has received many awards that demonstrate its attractiveness for women in the sustainable energy sector:¹⁵⁵

- Forbes’ Best Employers for Women 2018
- Fortune World’s Most Admired Companies 2018
- Bloomberg’s 2019 Gender-Equality Index
- Forbes America’s Best Employers 2018
- World’s Most Attractive Employers 2018 from Universum
- Listed in the top 15 Gender Equality Global Report & Ranking
- Forbes’ Best Employers for Diversity 2019

As a role model for a global company, women hold 42% of seats on the Board of Directors, 40% of new hires are women and 21% of the global leadership are women.¹⁵⁶ The company received the prize for ‘HeForShe’ (a solidarity campaign of UN Women)¹⁵⁷ and publically commits to global goals to increase the representation of women across the talent pipeline – to 40% at entry, and 30% in the top positions.¹⁵⁸

153 Besley, T., Folke, O., Persson, T. & Rickne, J., 2017. Gender quotas and the crisis of the mediocre man: theory and evidence from Sweden. *American Economic Review*.

154 <https://www.bbva.com/en/garanti-bbva-finances-wind-farm-in-turkey-with-gender-loan-to-polat-energy/>.

155 Larsen, K. 2019. Girl Power is Abundant at Schneider Electric. Blog Post March 7 2019. Available online: <https://blog.se.com/life-at-schneider-electric/2019/03/07/girl-power-schneider-electric/>.

156 Ibid.

157 Falcão, J., Strapasson, A., Costa, H., Masulino, N. & Barbosa, M., 2019. *Energy & Gender An assessment on gender equality in the energy sector in Brazil*. Technical report commissioned by the British Embassy in Brazil in collaborations with the UK Prosperity Fund: Energy Programme Breasil, Brazil.

158 Larsen, K. 2019. Girl Power is Abundant at Schneider Electric. Blog Post March 7 2019. Available online: <https://blog.se.com/life-at-schneider-electric/2019/03/07/girl-power-schneider-electric/>.

Schneider Electric prides itself to have one of the best Global Family Leave policies¹⁵⁹ in the industry, including 12 weeks of fully paid leave for primary care-givers (birth or adoption) and 2 weeks of fully paid leave for secondary care-givers (birth or adoption) and addresses various leave needs – parental, elderly and dependent care and bereavement – applied to all employees worldwide.

In 2014, a working group tasked to look at pay equity resulted in findings from pilot studies in 12 countries that defined a 3-year vision to conduct pay equity reviews with 85% of Schneider Electric's workforce.¹⁶⁰

Winner of the 2019 Catalyst Award, Catalyst evaluated Schneider India's initiative: Attracting and Retaining Women which demonstrated a commitment to provide equal opportunities to everyone and ensure all employees feel uniquely valued and safe to contribute their best.¹⁶¹ From 2015 to 2018, the impact of these concerted efforts has become increasingly palpable: Women's representation across all levels increased from 15.9% to 20.8%, despite an overall workforce shrinkage of 5%. Women's voluntary attrition rate declined from 14.6% to 7.8%. Women's representation in senior and top management positions increased from 6.7% to 9.4%.

In 2015, Schneider Electric implemented the PRERNA awards which honours path breaking women entrepreneurs in India.¹⁶²

Highlights of the company's initiatives include:

- Robust recruiting and retention programmes, including targeted campus hiring and outside sector recruitment, intentional recruiting and retention of people across the various dimensions of diversity, including disability and LGBTI;
- efforts to re-engage women following a career break through programmes such as 'Her Second Innings', which eases women professionals' transition back into the workforce;
- men's engagement and inclusion in all aspects of the initiative to encourage and support their participation as allies and champions; and
- flexible work arrangements for all. Many employees work remotely for extended periods with the support of their managers and colleagues to care for sick loved ones. Additionally, more fathers are taking parental leave.

5.2 Attracting More Women and Girls to STEM

Given the knowledge we have about the under-representation of women and girls in STEM disciplines, there are a number of things that can be done to heighten exposure to STEM disciplines and encourage those who enjoy maths and science to follow their passion. First of all, the relative similarity in skills between girls and boys should be made known universally. Extra research on differences, taking into consideration cultural perceptions, and global campaigns advertising the outcomes would be valuable. Specific activities that have been demonstrated to work are:

- Promoting sustainable energy from primary school through clubs (such as Girls who Code¹⁶³ for computer science);
- social marketing of STEM for Girls (such as the #LikeAGirl campaign¹⁶⁴);
- themed and sponsored after-school care activities/school holiday activities/competitions between schools with gender-balanced teams;
- scholarships for girls to high achieving STEM schools;

159 <https://app.jobvite.com/TalentNetwork/action/campaign/w/MzA3Mjg>.

160 Falcão, J., Strapasson, A., Costa, H., Masolino, N. & Barbosa, M., 2019. *Energy & Gender An assessment on gender equality in the energy sector in Brazil*. Technical report commissioned by the British Embassy in Brazil in collaborations with the UK Prosperity Fund: Energy Programme Breasil, Brazil.

161 Catalyst, 2019. Case Study: Attracting and retaining women in Schneider Electric India. Available Online: <https://www.catalyst.org/research/schneider-electric-attracting-and-retaining-women-in-schneider-electric-india/>.

162 <https://www.se.com/in/en/about-us/press/press-release/2018/prerna-award-honours-path-breaking-women-entrepreneurs.jsp>.

163 <https://girlswhocode.com/>.

164 <https://always.com/en-us/about-us/our-epic-battle-like-a-girl>.

- scholarships for women to university and trade schools;
- promotion of female role models and mentors; and
- exposing girls and women to the sustainable energy work environment and the skills required, e.g. by using initiatives such as ‘Take a Girl to Work Day’¹⁶⁵ and rotational vocational programmes.

Box 13: Public Sector Example – Brazil: Draft Bill to Encourage Participation of Women in STEM

Senator Maria do Carmo Alves authored a new draft Bill (PLS 398/2018)^{166, 167} that establishes guidelines and basics for national education, and proposes the inclusion of a guideline in the National Curricular Common Base aiming to look for strategies to mitigate cultural prejudices and barriers to the participation of women in STEM areas. The Bill also proposes to include in the Law innovation and scientific and technological research in the work environment as a new method of stimulating women’s participation in the STEM. The Bill has not yet been passed.¹⁶⁸

Box 14: NGO Example – Brazil: Women in Construction. Attracting More Women and Girls into STEM and Trade Skills

‘**Women in Construction**’¹⁶⁹ provides technical training courses for women in a situation of socioeconomic vulnerability and domestic violence. The NGO promotes women’s autonomy, citizenship and empowerment, placing them in the labour market, predominantly male, thus contributing to the reduction of inequality and gender discrimination at work. In the 13 years, ‘Women in Construction’ has served more than 5,000 women directly with free training courses and workshops for various areas of construction and more than 20,000 people indirectly. Courses might include painting basics and courses in cement work, as well as reading and interpreting floor plan, entrepreneurship and cooperative and development of critical thinking regarding sexuality, self-esteem, empowerment, sustainability and interpersonal relationships in the workplace.

Box 15: Education Sector Example – Australia: Women in Engineering Program

UNSW Sydney is committed to inspiring young women to pursue a career in engineering. The Women in Engineering Program aims to inspire girls to pursue engineering degrees and careers, support women studying engineering at UNSW, and celebrate the successes of female engineering graduates. Since launching the program in 2014, UNSW has had a 78% increase in female first-year engineering enrolments.¹⁷⁰

Box 16: Education Sector Example – Canada: *We Saved You a Seat* Pilot Project

Algonquin College introduced a program called *We Saved You a Seat*, an initiative aiming to increase the enrolment of women in STEM programmes. Algonquin has committed to reserving 30% of classroom seats for qualified women in four of its most popular technology programmes: Electrical Engineering Technician, Mechanical

165 See <http://www.cellgirlchild.co.za/> or <https://www.daughtersandsonstowork.org/>.

166 Assespropr, no date. Project encourages inclusion of women. Available Online: <https://www.assespropr.org.br/en/projeto-incentiva-inclusao-de-mulheres-na-ciencia/>.

167 Falcão, J., Strapasson, A., Costa, H., Masulino, N. & Barbosa, M., 2019. *Energy & Gender An assessment on gender equality in the energy sector in Brazil*. Technical report commissioned by the British Embassy in Brazil in collaborations with the UK Prosperity Fund: Energy Programme Brasília, Brazil.

168 Available Online: <https://www25.senado.leg.br/web/atividade/materias/-/materia/134281>

169 <http://www.mulheremconstrucao.org.br/>.

170 <https://www.engineering.unsw.edu.au/students/student-experience/women-in-engineering-wie>.

Engineering Technology, Electro-Mechanical Engineering Technician, and Computer Systems Technician. They also trained more than 40 faculty members to better understand how women can be supported to excel in STEM curricula. Other elements of the initiative include program support (mentoring and making peer connections), financial support to ensure access for women regardless of socio-economic background, and awareness campaigns about STEM opportunities for women on social media.¹⁷¹

Until the playing field for girls and women in STEM subjects and careers is levelled and their equal place in the field is an everyday occurrence, these measures should be in place and monitored for learning and improvement. This will be one of the future pathways into employing greater numbers of women in sustainable energy.

Now we turn our attention to the issues that women currently seeking employment in the sustainable energy sector must navigate and the processes employers can use to ensure they reduce the biases that currently keep women out of the workforce and particularly out of more senior and leadership roles.

5.3 Designing Inclusive Recruitment Practices

The following are best practice strategies utilised in other sectors to ensure greater representation of women. No one sector or company does all of these things to provide us with one shining example to follow. However, when combined these best practices to achieve inclusion in any business are highly instructive to the sustainable energy sector as a whole.

Biases at recruitment are well described in the literature and are based on ‘common sense’ generalisations that skew the playing field. Some of these include a preference for men when hiring (the sex of an applicant can be easily derived from names, schools attended and photos on-line through LinkedIn or Facebook). Bias against non-dominant ethnicities or races is so widespread that it has resulted in the practice of CV ‘Whitening’¹⁷² where markers to ethnicity or race are removed.

This practice includes changing your ‘preferred name’ to one familiar to the dominant culture, as applicants with names too complicated for people from the dominant culture to pronounce are less likely to get interviews.¹⁷³

Age is often used as a proxy for experience and professionalism for older candidates and it may also be assumed that they are less tech savvy than younger candidates.

There seems to be a preference for experience from bigger companies (even though smaller company experience can be more diverse and require greater self-motivation and autonomy). Often a level of education is used as a proxy for intelligence.

Box 17: Private Sector Example – KieWomen Equality Policy and Programme

Kiewit – an Engineering and Construction Company in the large-scale renewable energy sector¹⁷⁴ implements a multipronged approach on gender and inclusivity.

“KieWomen came together to strengthen Kiewit’s efforts to recruit, retain and promote women. It was a direct result of our commitment to close the gender gap, improve diversity and inclusion and advance, empower and encourage women by contributing to their personal and professional development. We focus on providing women with leadership, networking, mentoring and sponsorship opportunities. We are also steadfast in our

171 EHRC, 2019. Advancing Gender Diversity in Canada’s Electricity Sector: A Compendium of Success Stories, <https://electricityhr.ca/wp-content/uploads/2019/11/accord-Compendium-FINAL-WEB.pdf>.

172 Gerdeman, D., 2017. Minorities who ‘Whiten’ their CVs Get more Job interviews. Harvard Business School. Research and Ideas Report.

173 Bertrand, M & Mullainathan, S., 2003. Are Emily and Greg More Employable than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination. Working Paper 9873: National Bureau of Economic Research, USA.

174 <https://www.kiewit.com/>.

commitment to give back to our community and develop the next generation of women leadership through our STEM outreach programmes with the Society of Women Engineers (SWE) and Girl Scouts.”¹⁷⁵

One successful practice was to analyse who was representing the company during recruitment drives and career fairs to attract new talent. Women and girls were less likely to speak to men representatives compared to when women were the first point of contact. Gender and inclusivity policy extends to parental leave, flex timing and working, and men are now included to equally make use of these policies and benefits. To further increase gender equality and inclusive practice, the company supports different steering committees in the company – implementing professional development workshops and organising external speakers to speak with women. HR also conducts a quarterly and annual pay gap analysis to ensure pay equality based on performance and skill.

There are several well-tested methods of reducing bias in recruitment.

Inclusive Job Descriptions

Start with a clear breakdown of all the roles and responsibilities of the job. This should start with collaboration between the recruiter, the hiring manager and potentially the team who will work with the new recruit, depending how participative the decision-making in the company is. The recruiter can come up with the standard list of skills and functions for the manager and use that as the basis for what follows.

Gender Neutral Job Advertisement Language

Ensure that the advertisement focuses on the skills articulated in the job description in gender neutral language. For example, use ‘They will lead...’ rather than, ‘He will lead...’ or even ‘S/he will lead...’ as gender neutral language is more welcoming of people of diverse gender identity.

Never underestimate the importance to minority people (e.g. women with a disability) of the ubiquitous line at the bottom of job advertisements these days ‘women and persons with a disability are strongly encouraged to apply’. Statements like this signal that an organisation cares about inclusion, as do the various industry standard qualifications of equity and inclusion such as EDGE global business certification¹⁷⁶ or Athena Swan (Scientific Women’s Academic Network)¹⁷⁷ that recognises gender equality in higher education and research in the medical sciences.

However, none of these statements matter if the job advertisement is replete with highly loaded gender language. Therefore, it is also necessary to avoid gendered descriptors like, ‘driven’, ‘assertive’, and ‘confident’ which are more commonly masculine-coded words, while ‘cooperative’, ‘honest’, and ‘supportive’ have a feminine connotation. Descriptors like ‘energetic’ and ‘tech-savvy’ imply that recruiters are looking for a young person.

Standardise and Diversify Short-listing

It is advantageous if shortlisting can be done by a standardised ranking system based purely on the clear job description you created in the beginning. This avoids the possibility that one person (with his/her own inherent biases) can adversely influence the shortlisting, by giving objective measures to select a candidate.

To build on the importance of diversity within the shortlisting process, several studies were conducted to assess unconscious bias in maintaining the status quo when shortlisting job candidates; they concluded that the diversity or lack of diversity within the shortlisted pool of candidates influences the outcome.¹⁷⁸ Statistically, if there is one woman within the pool of candidates then chances are she will not be hired in corporate America.

“But if managers can change the status quo of the finalist pool by including two women, then the women have a fighting chance.”¹⁷⁹

175 Industry Interview, 2019. Women Engineer, North America.

176 <http://edge-cert.org/>.

177 <https://www.ecu.ac.uk/equality-charters/athena-swan/>.

178 Harvard Business Review, 2016. If There’s Only One Women in Your Candidate Pool, There’s Statistically No Change She’ll Be Hired.

179 Ibid.

Selection Panel

Once candidates are short-listed, the choice of panellist for interview is important. Again, standardised criteria or 'rubric' should be used to score the candidates. It should be ensured to have as much gender balance and ethnic diversity as possible on the panel.

A panel should include the recruitment manager, the manager of the new recruit, someone already on the team and perhaps a client from outside the company, to avoid 'group think'.

The questions must be standardised, the same for each candidate and related to the role or the skills and experience required for performing the role. Each panellist should ask at least one question and have the opportunity to interact with the candidate.

Blind selections¹⁸⁰ are ideal and can be useful in some contexts.¹⁸¹ Companies such as Mozilla, Chegg, Sendgrid, and Dolby Labs use hiring software such as GapJumpers¹⁸² that aims to remove the unconscious bias in recruitment process through blind hiring.

5.4 Strategies for an Inclusive Workplace

Performance Reviews

Performance reviews are not free from bias. This was demonstrated in a study of 248 reviews from 28 different sized companies in 2014.¹⁸³ The author found that:

- Women are more likely than men to receive critical feedback of a personal nature (step back; watch your tone; be less judgmental) (N=71 women vs 2 men);
- men are more often given constructive feedback (N=23 women vs 81 men);
- unsurprisingly, a manager's gender is not always a factor, with women being as critical of other women as men, demonstrating that people raised in the same culture are likely to have the same biases regardless of their sex; and
- the language used for women differs and includes: bossy, aggressive, abrasive, strident, emotional and irrational. None of these words are used in men's reviews except aggressive, and this was a 'more of it please', positive comment rather than the negative connotation women were confronted with.

The way to fix this is again to use standardised over narrative (open box) reporting methods with a concrete example required for every critique or comment.

Promotions

Women are promoted less frequently than men. McKinsey¹⁸⁴ has shown in its study of 13 million people in 279 companies in the US that women:

- Have less support from managers than their male colleagues;
- have less opportunity to socialise with senior managers outside of work;
- are often the only woman in the room (and will be asked by men to take the notes or get coffee, even when they are the most senior person in the room);
- have to face more sexual harassment at work, and surprisingly, rates are higher as seniority of the woman grows; and
- have less access to mentors.

The personal relationship with senior managers and mentors demonstrably benefits men at promotion time. If women report and resist biases and harassment, they gain a reputation for being difficult or disruptive.

Women's willingness to advocate for their own worth as a candidate for more senior roles is sometimes compromised relative to men's, since women tend to be more realistic regarding their own competences throughout their career. Men are gaining a more realistic insight into their own skills only when they would already have achieved senior roles.

Once again, ranking candidates for promotion using standardised criteria such as those key leadership capabilities offered in Figure 15, rather than based on the personal relationship with more senior staff is a better way to promote. Naturally 360° Performance Reviews with inputs from co-workers, clients and subordinates

180 Miller, C., 2016. Is Blind Hiring the Best Hiring? Most companies say they want to attract a diverse workforce, but few deliver. The only solution may be a radical one: anonymity. *The Work Issue*. Vol 57, Feb. 25.

181 Goldin, C. & Rouse, C., 1997. Orchestrating Impartiality: The Impact of "Blind" Auditions on Female Musicians. National Bureau of Economic Research Working Paper No. 5903.

182 <https://www.gapjumpers.me/>.

183 Snyder, K., 2014. The abrasiveness trap: High-achieving men and women are described differently in reviews. *Fortune* Aug 26, 2014.

184 McKinsey & Company, 2018. *Women in the Workplace*.

as well as from managers are likely to give a more reliable picture of a person's competence to be promoted than a single source.

In organisations that maintain persistent and intractable imbalances in leadership roles, perhaps quotas (see Section 5.1) are the best option.

According to an analysis of thousands of 360-degree reviews, women outscored men on 17 of the 19 capabilities that differentiate excellent leaders from average or poor ones.

Capability	Women's percentile	Men's percentile
Takes initiative	55.6	48.2
Resilience	54.7	49.3
Practices self-development	54.8	49.6
Drives for results	53.9	48.8
Displays high integrity and honesty	54.0	49.1
Develops others	54.1	49.8
Inspires and motivates others	53.9	49.7
Bold leadership	53.2	49.8
Builds relationships	53.2	49.9
Champions change	53.1	49.8
Establishes stretch goals	52.6	49.7
Collaboration and teamwork	52.6	50.2
Connects to the outside world	51.6	50.3
Communicates powerfully and prolifically	51.8	50.7
Solves problems and analyzes issues	51.5	50.4
Leadership speed	51.5	50.5
Innovates	51.4	51
Technical or professional expertise	50.1	51.1
Develops strategic perspective	50.1	51.4

FIGURE 15: WOMEN ARE RATED BETTER THAN MEN ON KEY LEADERSHIP CAPABILITIES

Source: Zenger Folkman, 2019

Anonymous 360s for Management

Following this theme and for the same reason 360s for all executives and senior managers with anonymous feedback should be considered to ensure that any bad behaviour can be raised even if large differences in the power dynamic exist. They also provide the benefit for senior managers to understand how their employees feel about their behaviour; an opportunity people lack as they rise up the corporate ladder.

Childcare & Medical Care

Onsite childcare is the most obvious way to ensure that employees do not have to struggle with pick-up and drop-off and they can visit their children in during breaks. Onsite medical care including General Practice, Paediatric, Obstetric & Gynaecological and Proctological are valued by workers.¹⁸⁵ For workers with a short commute, such services have been embedded in large global companies for many years now as they positively contribute to productivity of workers and worker well-being through the reduction in time lost

¹⁸⁵ Dr Nobelius personally viewed these services at Goldman Sachs Head Quarters in New York in 2008 and on discussion with the Director of HR was told it was becoming an industry standard.

seeking these services off-site. For those with longer commutes where bringing a child is non-ideal, and for smaller businesses childcare subsidies and adaptive solutions to facilitate family health well-being must be sought in each context.

Box 18: Private Sector Example – Patagonia On-site Child Care and Other Benefits

Patagonia provides access to on-site child care for employees at their headquarters in Ventura and recently at their 400 employee distribution centre in Reno, US. The company has provided on-site child care for 33 years, even in times of economic hardship, based on a mandate from their founders, who believed in providing a supportive work environment for working families.

Among other benefits, Patagonia provides company-paid health care and sick time for all employees, paid maternity and paternity leave, and financial support to those who need it.

Patagonia's CEO, Rose Marcario, stated in a 2017 interview: *"It is true, there are financial costs to offering on-site child care, and they can be expensive if you offer high-quality programmes or subsidise your employees' tuition when on-site care is not available. But the benefits—financial and otherwise—pay for themselves every year. As a CEO, it's not even a question in my mind."* In the same interview Rose Marcario illustrates how much of the associated costs have been recouped.^{186, 187}

Create Flexible Workplace Policies

It was Ricardo Semler, Harvard Graduate and entrepreneur in his 20s, who turned the hierarchical model of his father's Brazilian company, into the startling model of workplace flexibility and 'participative management' that is Semco.¹⁸⁸ Over the years, his mantra of workplace flexibility, where employees determine how and when they work, has been slow to catch on. Yet it is well understood as essential to allow women to manage their dual roles as primary care giver to children and working parent. Though the ideal would be to share unpaid caring work equally between men and women, in almost all countries this is a distant dream to a greater or lesser extent. Of course, there are rare exceptions, however, UN data, gathered in 83 countries, clearly show that **globally women on average do around 2 hours and 40 mins more unpaid care work than men every day.**

Box 19: Private Sector Example – Siemens Gamesa: Flexible Work programmes and Transparent Pay-Gap Analysis

Siemens Gamesa launched a diversity strategy with eight different programmes that focus on inclusion and work-life balance. Two of the programmes include FlexAgility project, working towards flexible work benefits in a digital age, as well as Work from Home, offering a variety of flexible working packages. Lastly, the company also conducts pay-gap analysis, where the UK Government Gender Pay Gap Services report positively for the company stating that women earn 95p to men's one British Sterling.¹⁸⁹

186 <https://www.patagonia.com/blog/2017/08/family-business-weighing-the-business-case/>.

187 <https://www.patagonia.com/family-business-on-site-child-care.html>.

188 Semler, R. 1988. *Virando a Propria Mesa (Turning the Tables)*. Later published in English as 'Maverick: The Success Story Behind the World's Most Unusual Workplace, 1993. Warner Books NY, & Arrow Book, London.

189 <https://gender-pay-gap.service.gov.uk/Employer/MzcALdga/2018>.

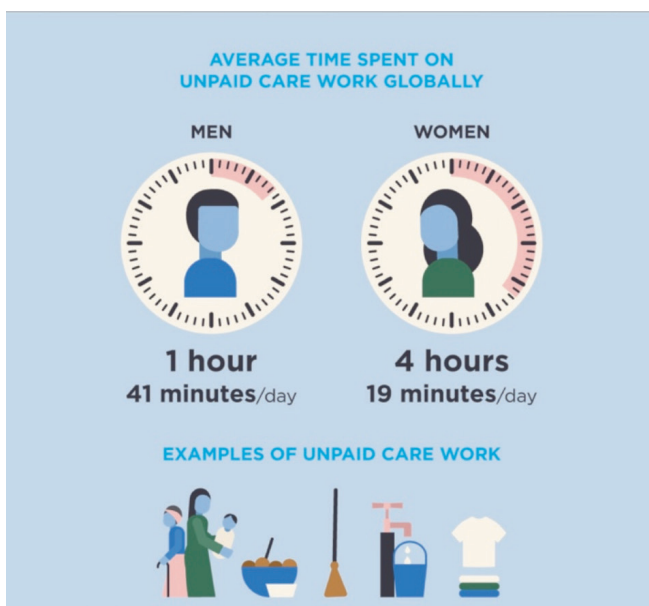


FIGURE 16: AVERAGE TIME SPENT GLOBALLY ON UNPAID CARE WORK
Source: UN Women, 2018

Given the importance of workplace flexibility to women, in the interest of ensuring gender equality, the Government of the State of Victoria (VicGov) in south-east Australia partnered with consultants to investigate the business case and best processes for the implementation of flexible working arrangements, both within government and private industry, as a model for businesses in the Australian context.¹⁹⁰ As can be seen from their list of flexible working possibilities listed, the study was thorough.

What we mean by flexible work

For this project, consistent with accepted Australian and international definitions of flexible work we consider three categories of flexible work arrangements namely those which provide flexibility in terms of hours of work, patterns of work and location of work.

Within these categories we identify ten types of flexible work arrangements:

1. Part-time work
2. Purchased leave
3. Unplanned leave
4. Parental leave beyond statutory requirements
5. Flexitime
6. Compressed working weeks/hours
7. Time in lieu
8. Job-sharing
9. Flexible career management
10. Working from home/telecommuting.

FIGURE 17: GOVERNMENT OF THE STATE OF VICTORIA – RANGE OF CATEGORISATIONS OF 'FLEXIBLE WORK'
Source: Victoria State Government, 2018

They tested and modelled flexible work in three organisations:

- a Victorian government department: Department of Environment, Land, Water and Planning (DELWP);
- a large and complex health service provider Mercy Health; and
- a water utility, Wannon Water, all with surprisingly positive results.

¹⁹⁰ Victoria State Government, 2018. Flexible work, good for business? Modelling the bottom-line impact of flexible work. Office of Prevention and Women's Equality (OPWE).

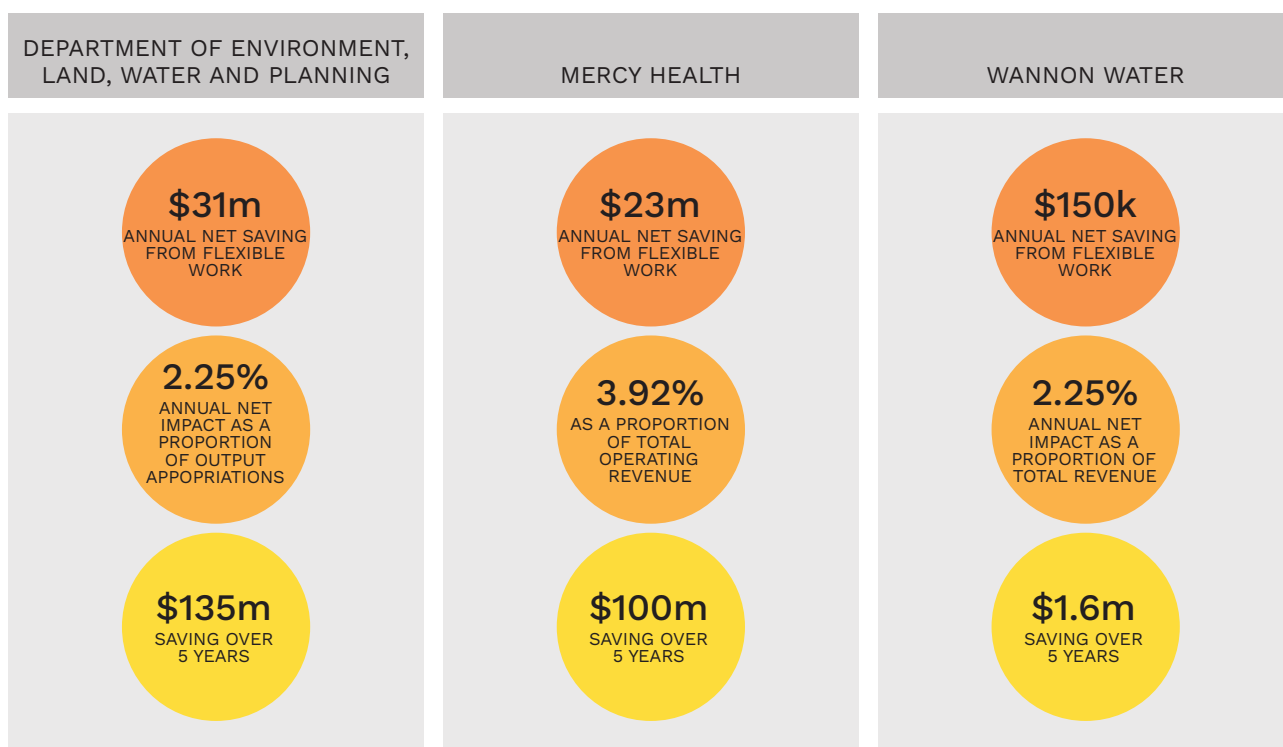


FIGURE 18: SAVINGS BY ORGANISATION IN VICGOV FLEXIBLE WORK PILOT
Source: Victoria State Government, 2018

Benefits of flexible work across the organisations were common including:

- Increased labour productivity
- Decreased recruitment costs
- Increased retention rates
- Decreased absenteeism

The challenges were a marginal on-boarding burden related to having more staff and an increased management burden of more staff (a cost significantly less than the gains). Managers needed support to manage the more dynamic work context, but the benefits, again, far outweighed the cost. In a society where the bulk of the unpaid care work still rests with women, flexible work is essential. Likewise, for men who choose to take on an equal parenting and care role, this mode of work should be equally available.

Parental & Carers’ Leave

Sweden’s parental leave is amongst the world’s most generous for both men and women. Both have a total of 480 days (16 months) combined parental leave at 80% of their full pay, 240 of which is available to each parent but can be transferred between them. However, 90 days of that leave is reserved for each parent personally and cannot be transferred, all of which be taken at the parent’s choosing up until the child is 8 years old. Roughly 25% of all male parents take the full amount of leave and 40% take the minimum reserved 90 days. Government commitment is clearly necessary to ensure such generous parental leave. This commitment to gender equality in parenting is carried forward to other areas of Swedish life. Sweden consistently ranks in the top 4 of the World Economic Forum Global Gender Gap Index along with its Nordic neighbours of Iceland, Norway and Finland, all of which have a strong family focus in their social policies promoting gender equality. While it is desirable that such a change is supported by governments, in the absences of government regulation on Parental Leave, companies can establish their own programmes to establish a competitive edge in attracting workers of child-bearing age.

It has been shown that gender equality has benefits for everyone, companies, men, women¹⁹¹ and makes for happier children and teenagers.¹⁹² In the USA, Google increased paid maternity leave to 18 weeks and the

191 Schieman, S. & Ruppanner, L. & Milkie M., 2018. Who Helps with Homework? Parenting Inequality and Relationship Quality Among Employed Mothers and Fathers. *Journal of Family and Economic Issues*. Vol. 39(1), pp. 49-65.

192 Looze, M., Huijts, T., Stevens, G. Torsheim, T. & Vollebergh, M., 2018. The Happiest Kids on Earth. Gender Equality and Adolescent Life Satisfaction in Europe and North America. *Journal of Youth & Adolescence*. Vol 47(5), pp. 1073-1085.

rate at which mothers left fell by 50%.¹⁹³ Paternity leave increases economic growth as it increases women's participation in the work force. And the positive effects of a father's involvement are numerous which can have positive effects the child's development and benefits to fathers themselves¹⁹⁴, which in turn improve the overall social fabric and the quality of our workplaces.

Box 20: Public Sector Example – Brazil and India: Parental Policy

In Brazil, national law supports new mothers to benefit from 4-months paid maternity leave and fathers between 20 and 30 days, which companies can deduct salary costs from owed tax.¹⁹⁵ To remain competitive and attractive to top talent, companies offer another two months to mothers, and a third month of non-paid leave if they wish to take it.^{196 197}

India has one of the highest participation of women in STEM. The country, however, also has one of the lowest participation of women in the workforce, at 30%. In response *“the government enacted an expansive worker protection program—the Mahatma Gandhi National Rural Employment Guarantee Act—that requires equal wages for men and women and includes provisions for childcare at work sites. In addition, in March 2017 India enacted a federal law mandating that all employers offer twenty-six weeks of paid maternity leave.”*¹⁹⁸

Box 21: Private Sector Example – Wind Denmark Parental Leave Policy

Denmark's parental leave regulations are already quite favourable.¹⁹⁹ Still, **Wind Denmark** decided to put in place a better policy than society in general.

Mothers leave work 4 weeks prior to the labour date. When the baby is born, fathers have two weeks of leave (within the first 14 weeks of birth), too. During that time both receive their full pay. Then mothers have 14 weeks of leave with full pay after birth, i.e. a total of 18 weeks. Fathers are also allowed 16 weeks on top of the two weeks after birth, i.e. another 18 weeks with full pay.²⁰⁰

Provide Return to Work Programmes for Women and Men

For companies it is worth supporting women and men who take time off from work for parenting; they are a valuable resource for any company. They are trained workers who save businesses recruiting costs.²⁰¹ Finding ways to help them get back to speed is essential to ensure continuing job satisfaction and performance. Larger companies have developed the 'returnships' model²⁰², which vary between 8 weeks and six months in duration. They function as a sort of internship and can be open to previous employees or workers from within the industry that have not previously been employed by the company. This is also a good time to discuss flexible work options to ensure that the employee is not overwhelmed and can recommence with reduced hours if desired.

Some programmes are aimed at individuals who have left their professional roles for an extended period of time. Responding to the large gap of STEM trained women who are not participating in the workforce, the

193 <https://www.wsj.com/articles/susan-wojcicki-paid-maternity-leave-is-good-for-business-1418773756>.

194 https://timedotcom.files.wordpress.com/2014/12/effects_of_father_involvement.pdf.

195 Fraga, A. and Sorji, B., 2018. Leave Network Country Notes Brazil. Federal University of the State of Rio de Janeiro. Available Online: https://www.leavenetwork.org/fileadmin/user_upload/k_leavenetwork/country_notes/2018/FINAL.Brazil2018.pdf.

196 Industry Interview, 2019. Woman, Brazil.

197 Such as 182 days offered by Adobe in Brazil. See Brazil Adobe, 2018. Brazil Maternity and Paternity Leave Policy. Available On-line: www.benefits.adobe.com.

198 <https://www.cfr.org/interactive/womens-participation-in-global-economy/case-studies/india>.

199 <https://ec.europa.eu/social/main.jsp?catId=1107&langId=en&intPagId=4487>.

200 According to an email conversation with Peter Alexandersen, Head of Press & Communication, Wind Denmark on 11 December 2019.

201 Wittenberg-Cox, A., 2019. When Returning to Work, New Parents Should Focus on 3 Things. Harvard Business Review, March 6, 2019.

202 Lipman, J., 2019. Helping Stay-at-home Parents Re-enter the Workforce. Harvard Business Review, June 7, 2019.

Society of Women Engineers based in the USA, in partnership with re-entry firm iRelaunch, are promoting employment opportunities within the ‘STEM Re-entry Task Force’²⁰³ initiative to engineers who are interested in getting back to their technical careers. Working with many tech and engineering companies, nearly 400 professionals have participated in these programmes, and 85% have been hired into permanent jobs. ‘Power2Fly’²⁰⁴ connects Fortune 500 companies and start-ups with women who are looking to work for companies that value gender diversity and inclusion. The focus is on part time remote work opportunities in the tech and digital sectors.

Box 22: Private Sector Example – ScottishPower – Return to Work Programme

ScottishPower partners with gender equality organisation Equate Scotland to deliver the Returner Programme²⁰⁵, a structured and supportive programme offering for applicants who have taken a career break of two years or more from the STEM sector. The programme re-teaches skills and knowledge and aims to rebuild confidence in a working environment. Applicants must be qualified in and/or have relevant work experience in any of the following areas; engineering, renewable energy, data analysis, project management, technology and now considering how to return to work in STEM.

Candidates receive a paid placement for 3-6 months; flexible working patterns may be available depending on the role, and a supportive induction and regular meetings with a line manager.

ScottishPower’s Early Careers Manager, Mairi Elder comments: *“There is a skills shortage in the UK, particularly in STEM roles. ScottishPower have a number of critical projects and are investing in our infrastructure and asset base around the UK. As a result of that, we are trying to attract more people to study STEM subjects and back into STEM careers.”*

Mentoring for Women and Men

One of the factors contributing to low recruitment and retention rates in STEM careers for women is the lack of appropriate women role models and mentors resulting in alienation from these disciplines, according to the World Economic Forum.²⁰⁶ Both men and women need mentoring, a factor associated with a higher likelihood of promotion.²⁰⁷ Men in particular can learn gender inclusive practice in the workplace. Women can benefit from the insight into negotiating the internal politics of an organisation, and a woman mentor is particularly beneficial.

Box 23: Education Sector Example – Australia, Mentorship for Women in STEM: HunterWiSE

HunterWiSE is an initiative that establishes mentorship avenues for women in STEM, promoting collaboration and sharing of experiences. The project partners with The University of Newcastle, and launched two key interlinked initiatives: (1) a targeted school intervention and (2) the establishment of Women in STEM and Entrepreneurship: Hunter Network. Twenty-three female students from Years 9 & 10 at Muswellbrook High School used technical skills applied to science, engineering and entrepreneurship and technology in a program addressing local community issues.

In 2017, over 50 women from organisations across the Hunter region joined the HunterWiSE Network. More than twenty women from the HunterWiSE Network took part in mentoring activities, career talks, and the presentation night at Muswellbrook High School. The initiative aimed to expand to three more high schools on 2018.²⁰⁸

203 <https://reentry.swe.org/>.

204 <https://powertofly.com/>.

205 https://www.scottishpower.com/pages/returner_programme.aspx.

206 World Economic Forum, 2017. Accelerating Gender Parity in the Fourth Industrial Revolution: An Agenda for Leaders to Shape the Future of Education, Gender and Work.

207 McKinsey & Company, 2018. Women in the Workplace.

208 <https://www.newcastle.edu.au/research-and-innovation/centre/hunterwise/about>.

Box 24: NGO Example – GWNET Mentoring Programmes

GWNET leads the development of **several regional and global women mentoring programmes**, with the goal of advancing the role of women as agents of change in society and promoting best practices within the sustainable energy sector.

The mentoring programmes are designed individually depending on context and implementation partners but usually feature the following elements:

- Bilateral interaction for 9-12 months between mentees and mentors along mutually agreed personal development targets
- A series of exclusive knowledge-transfer webinars
- Careful match-making of tandems and continuous support by the GWNET Secretariat
- Skill-building elements for leadership, communication, presentation (Optional)
- Networking opportunities at major international energy or renewables events (optional)

GWNET's current programmes include the GWNET Mentoring Programme 2/2019, the Women in Wind Global Leadership Programme (in cooperation with the Global Wind Energy Council), the People-Centered Accelerator Mentoring Programme for Women in Energy Access, and the Regional Mentoring Programmes for Latin American Countries (LAC) as well as the Middle East and North Africa (MENA).

Support Employee-led Diversity and Inclusion Programmes

Creating awareness and acceptance of gender equality, diversity and inclusion works best through employee-led approaches. Organisational leadership can help initiate and support these campaigns and programmes financially and also by allocating time available for everyone in the company or organisation (office and site-based workers) to attend focus groups, workshops, book clubs, seminars, etc.

Box 25: Private Sector Example – Bright Power Alliance for Multicultural People in Sustainability (AMPS): Employee-led Diversity and Inclusion Programme

Bright Power in the US has changed the built environment by reducing carbon emissions and improving building performance. They service real estate — owners, operators, investors, occupants, and communities. Their **key employee-driven initiative is the Alliance for Multicultural People in Sustainability (AMPS), encouraging the representation of a multicultural and diverse body of staff in the field of sustainability, construction, clean energy, and data analytics.**²⁰⁹ The group recruits guest speakers with expertise on diversity and inclusion so they can replicate successful programmes within the company. Recent meeting topics have included:

- Increasing opportunities for Bright Power women and minorities to display their talent in several platforms;
- attracting and retaining a body of staff that is representative of the multiculturalism of the cities and customers; and
- creating opportunities for multicultural collaboration and recognition among staff.

209 <https://www.thesolarfoundation.org/wp-content/uploads/2019/05/SEIA-TSF-Diversity-Best-Practices-Guide-2019.pdf>.

Box 26: Private Sector Example – Namaste B-Corporation, Employee-owned Solar Installation Company Values Employee-centred Equality

Namaste residential and commercial solar installers are an employee-owned cooperative and B Corporation in the US. The company engages democratic governance for big company decisions, with each employee having one vote. In 2018, **Namaste started providing paid internal diversity and inclusion education for the 200 field and office employees such as unconscious bias seminars, a Right Use of Power workshop** – “After engaging in this workshop, our people have come to use the terms ‘up power’ and ‘down power’ commonly in our workplace.” Twice a year they offer a full-day experiential workshop available for all employees as paid time. Participants learn about power differentials, the ‘4 Is’ of oppression (ideological, interpersonal, institutional, and internalised), and about micro-aggressions as aspects of communication and behaviours that perpetuate oppression and unhealthy power dynamics in the work place and beyond. **The company also supports book clubs and focus groups on diversity and inclusion topics, employs a Director of Employee Experience and many women hold senior roles**, including in technical divisions.²¹⁰

Zero-tolerance Policy on Sexual Harassment

Sexual harassment is still common in the workplace and more prevalent amongst women who defy the traditional submissive gender role of the dominant culture.²¹¹ This includes women who occupy senior roles and women who dare to usurp the ‘natural order’ by being same-sex orientated. The ILO for example states that sexual harassment is commonly experienced by women with a university degree and by women in the highest occupational groups (75% of surveyed women in the top management category and 74% of those in the professional occupational category).²¹² Figure 19 below gives an overview of respective numbers from the study of 13 million US employees conducted by McKinsey & Company.²¹³

% OF WOMEN WHO REPORT HAVING EXPERIENCED SEXUAL HARASSMENT OVER THE COURSE OF THEIR CAREER

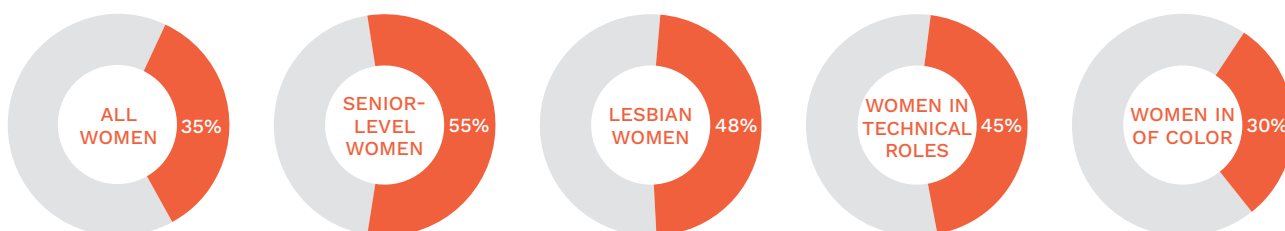


FIGURE 19: GROUPS WHO MOST COMMONLY FACE SEXUAL HARASSMENT IN US WORKFORCE
Source: McKinsey & Company, 2018

Box 27: Private Sector Example – Siemens Gamesa, Transparent Diversity and Inclusion Policy and Zero Tolerance for Harassment

Siemens Gamesa provides a transparent and publicly available diversity and inclusion policy and harassment protocol; enforcing a zero tolerance “*towards any form of violence, harassment, verbal abuse, abuse of authority at work, unlawful discrimination or any other conduct that creates an intimidating environment or is offensive to the rights of employees and hopes that relations between people in the workplace will be*

210 Ibid.

211 Berdahl, J., 2007. The Sexual Harassment of Uppity Women. The Journal of Applied Psychology, Vol 92(2), pp. 425–437.

212 ILO, 2016. Women at Work: Trends 2016. Geneva, ILO.

213 McKinsey & Company, 2018. Women in the Workplace.

*business-like and free of bias, prejudice and harassment. A breach of this protocol is not necessarily a violation of the law but it may, however, result in disciplinary action, including justified dismissal.*²¹⁴ Such policies and protocols are provided online so no one has to ask for it and it is publically available.²¹⁵

Very recently, **UN Women and the ILO jointly released a handbook**²¹⁶ that provides practical guidance and examples of how to prevent and respond to violence and harassment against women in various work settings. The International Labour Conference in 2019 also adopted a new Convention and accompanying Recommendation to combat violence and harassment in the world of work. *“The new international labour standard aims to protect workers and employees, irrespective of their contractual status, and includes persons in training, interns and apprentices, workers whose employment has been terminated, volunteers, job seekers and job applicants... [it] covers violence and harassment occurring in the workplace; places where a worker is paid, takes a rest or meal break, or uses sanitary, washing or changing facilities; during work-related trips, travel, training, events or social activities; work-related communications (including through information and communication technologies), in employer-provided accommodation; and when commuting to and from work. It also recognizes that violence and harassment may involve third parties.”*²¹⁷

Many countries will also have legislation aimed at preventing such harassment, but laws mean nothing when the culture supports such harassment and people, mostly men, can harass with impunity. Harassment is part of the customary process of enforcing the maintenance of traditional gender boundaries. If a company wants sexual harassment to stop, it has to say so. It then needs to ‘walk the talk’ on zero tolerance. It must:

- define a clear policy against it;
- design a procedure for examining it;
- support the reporter rather than only the perpetrator;
- fully implement and train staff to understand their roles and responsibilities; and
- write employment contracts with clear termination clauses around sexual harassment.

It must also:

- ensure the Board makes clear statements in public about this policy and keep track through making it a reported point under the Gender and Inclusion Agenda Item for all Board Meetings;
- ensure that CEOs lead on the Zero Tolerance policy by reporting on it in staff meetings and in all Board reports;
- gather systematic data on relevant indicators; and
- ensure there is recurrent and on-boarding training for all staff.

5.5 More Women in Senior Decision-Making Roles

The world has been talking about gender equality for decades and the evidence of the benefits is clear. **Gender balance in C-Suite roles, particularly women as CEOs, produces significant and measurable impacts.**^{218, 219, 220, 221, 222, 223, 224, 225, 226, 227}

214 <https://www.siemensgamesa.com/en-int/-/media/siemensgamesa/downloads/en/sustainability/diversity/protocol-of-action-in-case-of-harassment.pdf>.

215 <https://www.siemensgamesa.com/en-int/sustainability/diversity>.

216 Handbook: Addressing Violence and Harassment against Women in the World of Work, 2019. <http://endvawnow.org/uploads/browser/files/work-handbook-interior-web-rev.pdf>.

217 https://www.ilo.org/ilc/ILCSessions/108/media-centre/news/WCMS_711321/lang--en/index.htm.

218 Christiansen, L., Huidan, L., Pereira, J., Topalova, P., Turk, R., 2016. Gender diversity in senior positions and firm performance: Evidence from Europe, IMF.

219 Catalyst, 2004. The bottom line: Connecting corporate performance and gender diversity.

220 Eagly, A. & Carli, L., 2007. Women and the Labyrinth of Leadership. Harvard Business Review.

221 Williams, A. et al., 2010. Evidence for a Collective Intelligence Factor in the Performance of Human Groups. Science. Vol 330, pp. 686-688.

222 Morgan Stanley, 2016. Why it Pays to Invest in Gender Diversity.

223 Noland, M., Moran, T. & Kotschwar, B., 2016. Is gender diversity profitable? Evidence from a global survey. Peterson Institute for International Economics.

224 Fairchild, C., 2014. Women CEOs in the fortune 1000: By the numbers. Fortune.

225 Eagly, A. & Carli, L., 2007. Women and the Labyrinth of Leadership. Harvard Business Review.

226 Williams, A. et al., 2010. Evidence for a Collective Intelligence Factor in the Performance of Human Groups. Science. Vol 330, pp. 686-688.

227 Morgan Stanley, 2016. Why it Pays to Invest in Gender Diversity.

- **In the absence of an inclusive strategy for the complete structural transformation, the best option is to introduce significant quotas for all board positions.** As the evidence indicates, the company will not lose people it will miss²²⁸, and it will gain people who add significant value to all parts of the business.^{229, 230, 231, 232, 233, 234}
- **Intensive and ongoing training for all Board members and senior staff is advisable,** with the best effect noted when Board, Executive and Senior Staff are trained in participatory groups along-side all other levels of staff.

Box 28: Private Sector Example – ITAIPU Binacional: Promoting Women Employee Professional Development to Create More Women Managers

In her position as Chief Financial Officer of ITAIPU Binacional in Brazil, the world's largest hydropower station in terms of power generation, Margaret Mussoi L. Groff has been engaged in motivating female employees to seek professional development, which resulted in an increase of female managers from 10 to 21 per cent in nine years. Groff has also established ITAIPU's policy and guidelines for gender equality based on the UN Global Compact Women's Empowerment Principles Leadership Group, contributing to more gender-equal societies.²³⁵

Box 29: Public Sector Example – Australia: The Clean Energy Council and Monash Business School Combine Forces to Offer Women in Leadership Grant

2020 marks the second year running the 'Your Leadership Voice: Women in Focus' grant and program which provides an educational scholarship for women in the renewable energy industry looking to better their negotiation and public speaking skills.²³⁶ The grant covers accommodation, travel and enrolment fees, and aims to drive gender diversification in leadership positions in the renewable energy industry. The program is designed to transform female leaders by addressing the leadership and communication challenges women are facing in the workplace. This adds to the CEC's Women in Renewables initiative²³⁷ in building female professional networks across the industry. Heidi Sick, the winner of last year's inaugural grant, is now Client Director, Energy – Australia and New Zealand at engineering consultancy Aurecon. The CEC also offers funding for the undertaking of the Australian Institute of Company Directors (AICD) Foundations of Directorship course²³⁸. Allison Hawke, the 2019 recipient of the AICD Scholarship, is the COO at ESCO Pacific where she has played a key role in developments such as the Ross River and Finley Solar Farms.

228 Besley, T., Folke, O., Persson, T. & Rickne, J., 2017. Gender quotas and the crisis of the mediocre man: theory and evidence from Sweden. *American Economic Review*.

229 Adams, R., & Ferreira, D., 2009. Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*. Vol 94(2), pp. 291-309.

230 Perryman, A., Fernando, G. & Tripathy, A., 2016. Do gender differences persist? An examination of gender diversity on firm performance, risk, and executive compensation. *Journal of Business Research*. Vol 69(2), pp. 579-586.

231 Chen, J., Leung, W., Song, W. & Goergen, M., 2019. Why female board representation matters: The role of female directors in reducing male CEO overconfidence in corporate decisions. *Journal of Empirical Finance*. Vol 53 Sept 2019, pp. 70-90.

232 Chen, J., Leung, W. & Evans, Kevin P., 2018. Female board representation, corporate innovation and firm performance. *Journal of Empirical Finance*. Vol 48(C), pp. 236-254.

233 Larkin, M., Bernardi, B., & Bosco, S., 2012. Board Gender Diversity, Corporate Reputation and Market Performance. *The International Journal of Banking and Finance*.

234 Glass, A., Cook, A., and Ingersol, A., 2015. Do Women Leaders Promote Sustainability? Analysing the Effect of Corporate Governance Composition on Environmental Performance. *Business Strategy and the Environment* (2015).

235 <https://businessforpeace.no/award/previous-honorees/2013-honourees/>.

236 Clean Energy Council, 2019. Monash Business School joins forces with Clean Energy Council to develop female leaders. <https://www.cleanenergycouncil.org.au/news/monash-business-school-joins-forces-with-female-leaders-to-develop-female-leaders>

237 <https://www.cleanenergycouncil.org.au/advocacy-initiatives/women-in-renewables>.

238 <https://aicd.companydirectors.com.au/education/courses-for-the-director/foundations-of-directorship>.

- **Through the participatory activities, Board, Executive and Senior Staff gain insight into the experience of their employees in a very personal way** and employees gain access to those in decision-making positions to make their perspectives heard: the benefit is mutual.
- Good monitoring of indicators, in order to identify the problem and support public policies, companies and NGOs' project management. Both quantitative and qualitative indicators are relevant to appraise the level of success and efforts allocation.
- **Boards must facilitate the design of a Gender and Inclusion Plan** and resource it with people, money and time. The way these efforts fail is through a lack of commitment in these three areas, so after making such a decision, it needs backing.
- **This plan must focus on TRANSFORMATION** of the paternalistic and overly masculine dominated culture that serves no one well.
- **The plan must be measurable and embedded in a monitor system.** Indicators are contextual to the company and/or organisation. Indicators are both quantitative and qualitative and are relevant for success and failure appraisals.
- **Employ a senior level diversity and inclusion person** to drive the goals of the plan forward and ensure the plans success, in terms of both the data and removal of unconscious bias in organisational process.
- **The Board, Executives and Senior Management must then charge and lead from the front.** Cultural transformation demands genuine leadership from all leaders.

Box 30: Private Sector Example – Sunrun First US PV Company to Achieve Pay Parity

The woman-led PV company made a 100% pay parity commitment and was the first national company to achieve this goal in 2018 after committing to The White House Equal Pay Pledge in 2016 under the Obama Administration; it has now signed the California Equal Pay Pledge.²³⁹

Sunrun achieved its pay parity goal by committing to key principles:

- Completing a comprehensive annual review of compensation practices across the business with the help of an outside law firm;
- voluntarily adopting a policy prohibiting inquiries into a candidate's salary history; and
- providing equal parental leave for both male and female employees.

The company is made up of 50% women on its senior management and 38% of its Board and employs a Diversity and Inclusion Program Manager to achieve the transformational goals of Sunrun's workplace. CEO Lynn Jurish states, *"Diversity and inclusion are an essential Sunrun priority as we build a sustainable future for humanity. Our people's differences and human experiences fuel innovation and help us make better decisions."*

Box 31: Private Sector Example – The Solar Energy Industries Association (SEIA) Diversity Challenge Campaign Led by CEO

SEIA has launched a Diversity Challenge²⁴⁰ – an effort to encourage its members, the energy industry more broadly and ultimately all American workplaces to make diversity and inclusion a core part of their cultural identity. SEIA acknowledges that many organisations are well ahead of them, and they want to learn from them. SEIA president & CEO Abigail Ross Hopper has made diversity and inclusion one of her top priorities²⁴¹, in part because it is well understood that a diverse workplace is a more successful workplace. The Diversity Challenge asks participants to take the PWC CEO Action for Diversity & Inclusion Pledge²⁴² and join the conversation on

239 The Solar Foundation/SEIA, 2019. Diversity Best Practices Guide for the Solar Industry, Sunrun – Solar Leaders Sets Example with 100% Pay Parity, <https://www.thesolarfoundation.org/wp-content/uploads/2019/05/SEIA-TSF-Diversity-Best-Practices-Guide-2019.pdf>.

240 <https://www.seia.org/initiatives/diversity-inclusion>.

241 <https://www.seia.org/blog/abigail-ross-hopper-prioritizing-equity-clean-energy-transition>.

242 <https://www.ceoaction.com/pledge/ceo-pledge/>.

social media about diversity & inclusion using the #DiversityChallenge hashtag. Nearly 80 energy companies made commitments to diversity on social media, signed the formal pledge, and are already taking steps toward creating a more equitable work environment. For the full text of the pledge, refer to Appendix 6.

5.6 Build Increased Transparency and Accountability

Overcoming barriers to gender equality requires a baseline and good monitoring and indicators, as well as linkages to targets and national and international data collection organisations (e.g. ILO, SDGs, IRENA, ENERGIA, GETI and IEA).

The Board and organisational leadership should lead on implementing accompanying monitoring, evaluation and learning (MEL) systems and mandate regular reporting with Gender & Inclusion as a permanent agenda item. CEOs and/or Heads of State should directly oversee the Gender and Inclusion MEL systems and report to the Board and/or decision-making body regularly – as regularly as on other financial and performance indicators.

Box 32: Public Sector Example – Kenya: Ministry of Energy Creates First Legislative Gender Policy Instrument on the African Continent

Kenya's Ministry of Energy aims to raise awareness, change attitudes and support an engendered work culture in the energy sector. Part of the commitments and strategies is to strengthen institutional frameworks for gender equality, such as establishing champions, units, committees, ensuring equitable recruitment, placement, deployment and promotions, provide gender responsive office facilities and breastfeeding facilities, and include training and more. Additionally, the policy commits to compliance with Constitutions on Gender, increase awareness on gender in the energy sector, and integrate gender in programmes, monitoring & evaluation. The commitments are available publicly and supported by an implementation matrix of targets and indicators.²⁴³

If the company or organisation is truly prepared to walk the talk of inclusion, it would publish its metrics on all aspects of its gender and diversity inclusion practice, including the development of its policy and planning and progress on training. From a national public sector level, indicators may include share of women in energy companies, share of women in STEM fields (professors and students), share of women in decision-making positions (CEOs, Boards and upper management).

Within the organisation or company itself, data would all be disaggregated by gender and other socially relevant diversity variables in all aspects of the business and organisation including recruitment, applications to promotion and promotion success rates and, of course, pipeline data on the distribution of leadership roles and the impacts of any quotas introduced and the like. Others will extend to supplier diversity, such as women owned businesses or include gender within corporate social responsibility and/or sustainability reports.

Of greatest importance to our interviewees was the publication of wages' data. Evidence shows that the pay gap between men and women for doing the same job (one of the most intractable markers of gender inequality) shrinks significantly when wages for all are disclosed.²⁴⁴ Data on raises is also significant as women ask for raises as often as men but are less likely to get them.²⁴⁵ Transparency about such biases is the surest way to ensure they stop; accountability for them rests with the Board through the reporting of the CEO.

²⁴³ Kenya Ministry of Energy, 2019. Gender Policy <http://energy.go.ke/wp-content/uploads/2019/10/Gender-Policy-in-Energy.pdf>

²⁴⁴ Bennedson, M., Simintzi, E., Tsoutsoura, M. & Wolfenzon, D., 2019. Gender Pay Gap Shrinks when Companies are Required to Disclose Them. Harvard Business Review. January 23, 2019.

²⁴⁵ Artz, B., Goodall, A. & Oswald, A., 2018. Women ask for Raises as Often as Men but are Less Likely to Get them. Harvard Business Review. June 25, 2018.

Box 33: Project Environment Example – Gender Inclusive Indicators

Gender inclusive campaigns and ensuring gender equality within project implementation require measurable indicators. Such indicators are found within UNIDO guidelines²⁴⁶, which are useful to draw upon for all project and programme stakeholders.

- How will women and men be targeted and reached?
- Are there any women’s groups, associations or NGOs in the country that the project can partner with?
- Is the project responding to gender-differentiated patterns of division of labour, wage gaps, etc.?
- How will the activities and services of the project benefit women and men?
- Is the project likely to have adverse effects on women or men?
- How will the project affect relations between women and men?
- How will the project ensure women and men have equal access to the opportunities and services that the project provides?
- How can the project ensure and enhance women’s participation in the activities or services provided?

Indicators recommended in a document about the Brazilian Energy Sector in terms of project assessment²⁴⁷:

- Percentage of women and men participants at training sessions
- Number of workshops that include dedicated gender sessions
- Percentage of women and men professionals, engineers, technicians for targeted sectors
- Percentage of technical interventions with high Gender Equality and the Empowerment of Women (GEEW) impact potential
- Number of impact assessments
- Number of gender-relevant dialogues facilitated
- Percentage of women and men trained on new technologies
- Percentage of women and men working in pilot facilities
- Number of new/improved technologies for women in sustainable energy
- Number of gender-specific recommendations concluded from research

5.7 Utilise Existing Resources & Toolkits

A variety of resources and toolkits exist. Here are a few examples relevant to the energy sector.

Firstly, there is no one size fits all strategy to fit every country and context and therefore it is recommended that strategies should begin with a self-analysis (such as the Structural Environmental Analysis presented in Appendix 4 and Section 3 of the online Technical Working Document) to ensure that all culturally and contextually relevant information is presented analysed, and a strategy appropriate to specific needs is designed.

For Utilities: ‘USAID’s Engendering Utilities Delivering Gender Equality: A Best Practices Framework for Utilities’²⁴⁸, uses an employee lifecycle model and provides utilities with global best practices and practical resources to identify gaps, define objectives and establish a road map for sustained progress in integrating gender equity throughout their operations and corporate structures.

246 UNIDO, 2014. Guide on Gender Mainstream Energy and Climate Change Projects.

247 Falcão, J., Strapasson, A., Costa, H., Masulino, N. & Barbosa, M., 2019. *Energy & Gender An assessment on gender equality in the energy sector in Brazil*. Technical report commissioned by the British Embassy in Brazil in collaborations with the UK Prosperity Fund: Energy Programme Brasilia, Brazil.

248 USAID, 2018. Delivering Gender Equality: A Best Practice Framework for Utilities https://www.usaid.gov/sites/default/files/documents/1865/Delivering-Gender-Equality_A-Best-Practices-Framework-for-Utilities.pdf.

For companies to report gender and equality metrics: Bloomberg's gender reporting framework is an international standardized reporting and disclosure method for workplace gender data. It arms companies with a blueprint for measuring how they promote gender equality across five dimensions.²⁴⁹ The framework is thought-provoking on the metrics a company or organisation can determine their gender and inclusivity baseline and improvements by.

For Regulators: 'The Practical Guide to Women in Energy Regulation'²⁵⁰ aims to support gender equity and equality in energy regulatory commissions and to improve policies and processes to further integrate women into energy decision-making, regulatory policy, and project design. The document provides strategies and best practice examples of regulators in the developing economy context.

For Businesses, Organisations and Individuals: 'Bias Interrupters'²⁵¹ provides tweaks to basic business systems (hiring, performance evaluations, assignments, promotions, and compensation) that interrupt unconscious bias in the workplace, often without ever talking about bias. They offer free toolkits and strategies to organisations to implement into their business systems, as well as steps that individuals can take to help level the playing field in their workplace.

The US Solar Industry: A best practice guide²⁵² for businesses, including the CEO pledge commitment mentioned above and best practices designed to assist companies with the practical application and implementation of diversity and inclusion programmes and initiatives. While it is targeted at the US solar industry, the guide and practices are applicable to many sector players across technologies.

While it is beneficial to look at what has been done inside the energy sector, we also recommend looking towards toolkits that work across sectors and have been lauded with much success such as the '**Workplace Gender Equality Agency Toolkit**'.²⁵³ This is a free, comprehensive document that will help organisations understand the business case for engaging with gender equality. It has resources to help companies map and track every stage and actions in every focus area. It is a highly useful and thought-provoking toolkit and an excellent starting (and finishing point) for organisations willing to commit.

5.8 Support Coalitions that Aim at Elevating the Sector's Inclusiveness

It is very clear from the Structural Environmental Analysis that sector coalitions are vital to the successful advocacy between super-structural International Organisations such as the UN and ILO, governments, the sector and individual businesses. These coalitions include women's networks and associations (see Appendix 5 for an indicative list of women's networks in sustainable energy) as well as men who stand up for gender equality.²⁵⁴ They extend to the campaigns, initiatives and programmes led by coalitions.

Box 34: Renewable Energy Associations – State of Play of Gender/Diversity Policies

An inquiry with a handful of renewable energy associations revealed that most of them are aware of gender inclusion issues and that there is a tendency towards balanced composition of the respective association's boards and staff. However, most of them do not have an elaborate gender/diversity policy in place. The predominant reason stated for this is the small size of teams of umbrella organisations, whose member associations may or may not have gender/diversity policies in place. However, all of the interviewees would consider setting up a policy.

249 Bloomberg's Gender and Equality Index, <https://www.bloomberg.com/gei/key-findings/>.

250 USAID, 2018. Practical Guide to Women in Energy Regulation <https://pubs.naruc.org/pub/CAA05EA6-CDCE-3F80-DBF6-56F3A3C31C8F>

251 <https://biasinterrupters.org/>.

252 The Solar Foundation/SEIA. 2019. Diversity Best Practices Guide for the Solar Industry, <https://www.thesolarfoundation.org/wp-content/uploads/2019/05/SEIA-TSF-Diversity-Best-Practices-Guide-2019.pdf>.

253 The Workplace Gender Equality Agency Toolkit: https://www.wgea.gov.au/sites/default/files/documents/Gender_Strategy_Toolkit.pdf.

254 Australian 'Male Champions of Change use their individual and collective leadership to elevate gender equality as an issue of national and international social and economic importance'. As a core principle they state that we need "more decent, powerful men to step up beside women in building a gender equal world." <https://malechampionsofchange.com/>.

Examples of the associations approached include the International Geothermal Alliance (IGA), which had a strategic target to achieve a 50/50 gender balanced board in their 2019 elections and in the end achieved a 70/30 female to male board composition. The IGA Office team is composed of 2:3 female to male. IGA also has a code of ethics in place that sets out their values and includes a statement on diversity and inclusion.²⁵⁵

The Alliance for Rural Electrification (ARE) has a rewarding policy for women interested in joining the ARE Board. This means that they are eligible to some premium on the votes received. The present Board has 5 women out of 9 positions and ARE aims at balancing the panel composition at upcoming events.²⁵⁶

The Global Wind Energy Association (GWEC) has just published its Guide of ‘Best Practices for Gender Diversity at Industry Events’ to support their member associations (and others) in mainstreaming gender diversity and showcasing female leadership at industry events.²⁵⁷ Recently, GWEC, IRENA and GWNET jointly published “Wind energy: A gender perspective”, a brief based on a survey of nearly thousand individuals and organisations, which examines female representation, gender-inclusive policies, and perceptions of gender bias in the wind industry.²⁵⁸ GWEC has also partnered with GWNET to offer the ‘Women in Wind Global Leadership Program’.²⁵⁹

Such coalitions can advocate for greater inclusion, commission studies such as this and provide data informed by industry experiences to shape better messaging and press for more urgent action from all stakeholders at all levels on behalf of women. We have all the tools, but what is often lacking is the vision and the commitment to put them all together: this is the role of committed coalitions. As the great anthropologist Margaret Mead once said:

“Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has.”

5.9 Summary

No one sector, country or business has managed as yet to model the perfectly inclusive workplace, but much has been tried and tested. For this study the literature on what has been tried and tested has been systematically reviewed. It aligns very closely with the experience of our sectoral interview participants. Strategies to achieve more inclusive workplaces for all employees regardless of gender, ethnicity, religion, and so on have been demonstrated to include:

- Establishing and implementing quotas;
- attracting more women and girls to STEM;
- being careful with the language of job advertisements;
- creating standardised recruitment strategies and diverse selection panels with a view of levelling the playing field for all applicants;
- ensuring that performance reviews and promotions are as bias free as humanly possible leading to more women in senior decision-making roles;
- providing flexible workplaces and practices that make it easier to align professional and family duties including parental & carers’ leave for all employees;
- providing return to work programmes for people returning to work from parental leave and other family-related extended absences;
- improving mentoring programmes for all staff and support for senior mentors;

²⁵⁵ Email conversation with Dr Marit Brommer, IGA Executive Director, on 4 December 2019.

²⁵⁶ Email conversation with Marcus Wiemann, ARE Executive Director, on 10 December 2019.

²⁵⁷ <https://gwec.net/wp-content/uploads/2019/12/Best-Practices-for-Gender-Diversity-Final.pdf>.

²⁵⁸ <https://www.irena.org/publications/2020/Jan/Wind-energy-A-gender-perspective>.

²⁵⁹ <https://gwec.net/women-in-wind/about-the-program/> or <https://www.globalwomennet.org/the-women-in-wind-global-leadership-program/>.

- supporting employee-led diversity and inclusion strategies to create buy-in and ownership; and most importantly
- ensuring the workplace is safe for all by walking the talk on zero-tolerance sexual harassment programmes.

Boards and Management must commit time, resources and personnel to ensuring that these strategies are monitored, evaluated and reported. Inclusion needs to be a permanent agenda item for boards.

Finally, the authors of this study believe that quotas are the most effective way for women to gain access to leadership positions, giving them the opportunity to demonstrate their skills in leadership roles.

When viewed as a whole, achieving inclusion and diversity in the workforce can seem quite challenging. The benefits, both social and economic, are commensurate and real.

6 Opportunities of Sustainable Energy

Energy transitions are underway globally in different shapes and forms, all with a common vision for cleaner, efficient and more sustainable energy systems. This is paving the way for a growing sustainable energy sector, still a relatively new and undefined area of the economy. It is **a young sector, without the deep historical roots that bind other sectors to outmoded traditional cultures**.

To achieve the ambitious goals of climate change mitigation and clean energy transition targets it is imperative to draw on as large and as diverse a talent pool as possible and to employ a diversity of perspectives with a view to securing the greatest innovation. Evidence reinforces the fact that diversity is a key element for a prosperous, healthy and sustainable workforce, and economy. Sectors and companies with increased diversity are proven to be more profitable and less exposed to risk.

Gender inclusion within the sustainable energy, and energy sector, continues to be poor. Availability of data specifically relating to women in sustainable energy, globally, is limited. The evidence gathered through literature and interviews highlights the huge effort that is needed to increase inclusion for women. Challenges relating to gender dynamics in the family and the workplace and profound biases, assaulting women’s confidence, remain. Yet, the picture is still a positive one. The breadth of the sustainable energy field means it embraces and depends on a variety of skills beyond conventional STEM roles. The career journeys that individuals take are typically non-linear and varied, allowing ample opportunity and entry points for jumping on board. The sustainable energy sector has a unique opportunity to establish a new way of working. The energy transition can usher in new societal models of progress, participation and human well-being within nature’s boundaries.

There are many opportunities to embed gender inclusion and diversity within the energy transition, and sustainable energy lies at the heart of that. The energy transition cannot be decoupled from human rights and social justice and therefore the authentic inclusion of all people. This transition will not just ‘happen’ organically, leadership and decision makers and people themselves must choose this path; they have to ask the right questions, take concerted action, and implement relevant strategies and plans.

The sustainable energy sector plays a key role in a just energy transition and this study has highlighted just some of those opportunities:



FIGURE 20: OPPORTUNITIES OF SUSTAINABLE ENERGY
Source: Authors’ illustration

The concluding chapter presents recommendations on how to support and promote women in sustainable energy as the energy transitions continue to gather speed and grow in scale.

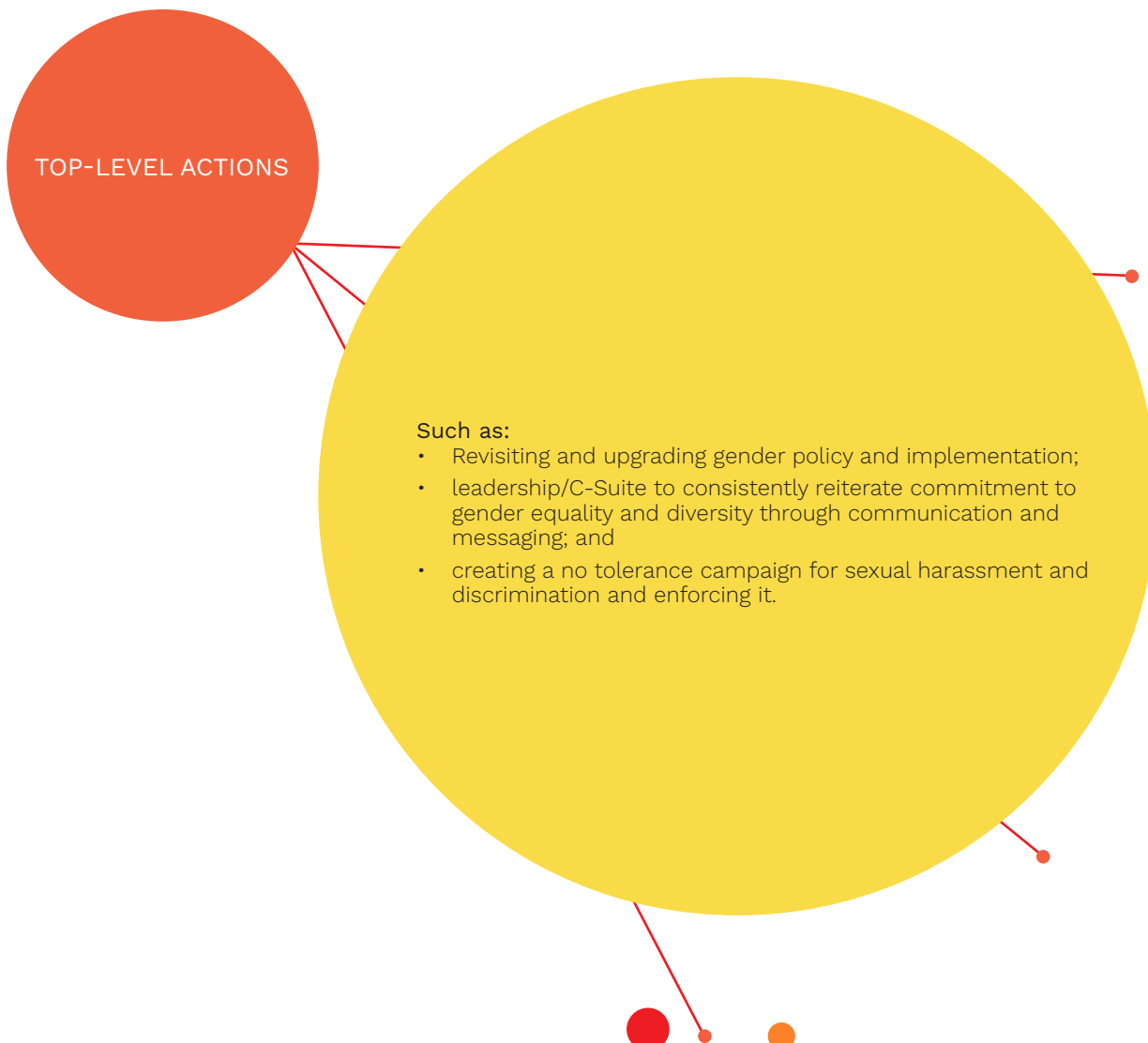
7 Recommendations

Recommendations are based on findings from literature, the industry expert interviews and the Structural Environmental Analysis of interviewee perspectives. Through the course of the study it has become clear that when our goal is to increase women's employment in the sustainable energy sector, we really need to address two questions:

What can be done to support women already engaged in sustainable energy, and, what can be done to make the sustainable energy sector more inclusive? The recommendations address these two dimensions.

In general, there are actions and interventions that every stakeholder can implement, as well as targeted recommendations for international organisations, government and industry associations, companies, and individuals. The evidence demonstrates that **what is good and inclusive for women and diverse peoples, is ALSO good for men, the company, their families and communities.** As an overall recommendation for all stakeholders of the energy transition, each to engage in an internal analysis to uncover the existing barriers and enablers with a view of creating workplace environments that encourage diversity and inclusion. Secondly, **each entity no matter how big or small should design and implement a Gender and Inclusion Plan as a core strategy.**

7.1 What Can Be Done to Support Women Engaged in Sustainable Energy?



NETWORKING AND VISIBILITY

Such as:

- Forming and supporting women in renewable energy/energy efficiency associations (national and international networks) – including financial support²⁶⁰;
- promoting networking face-to-face and electronically among women in sustainable energy and support organisations that facilitate such networking;
- making existing female excellence in sustainable energy more visible through tools such as the Women in Energy Expert Platform, led by GWNET;
- featuring achievements of women in energy in mainstream and specialised media;
- supporting and designing workshops or conference events specifically targeted at women in sustainable energy; or
- insisting on inclusiveness in panels at conferences and seminars, in selection committees for industry awards and the like.

CAPACITY DEVELOPMENT

Such as:

- Investing in training for public speaking opportunities and creating mentorship programmes within the company or organisation or with partnering organisations; or
- developing and offering refresher/re-training modules specific to the sustainable energy sector (policy updates, technology trends etc.).

²⁶⁰ See Appendix 5 for a list of existing 'women in energy' networks.

FLEXIBLE AND
FAMILY-FRIENDLY
WORK SCHEMES AND
SUPPORT

Such as:

- Developing return to work schemes including elements of continued education, market related and current events training, 'returnships' or mentorships for returning employees;
- implementing organisational parental policy including flexible working & family support;
- redefining roles and expected outputs of new parents so they can continue to add value to the company and organisations;
- offering flexible working patterns/job sharing etc. for both men and women; and
- enabling men to take on more care responsibilities.

STRENGTHEN WOMEN
AS ENTREPRENEURS
AND INVESTORS

For example:

- Supporting women owned small and medium sized enterprises and entrepreneurship;
- creating cheaper debt and insurance options aimed at encouraging increased women's participation, such as low interest capital investment loans; or
- developing investment opportunities specifically for women to be shareholders and to raise capital.



REDUCE BIAS IN RECRUITMENT AND EMPLOYMENT

For example:

- Creating policies for recruitment – with the involvement of all concerned – that make a conscious attempt to eliminate bias (e.g. by using of gender neutral language in advertising, standardised interviews, reporting methods and ranking systems, diverse panels);
- posting all policies publicly so no one has to ask;
- holding everyone accountable for implementing these policies;
- using 360 degree performance reviews as widely as possible;
- creating transparent and publicly available information about career paths and salary potential within the company and organisation.



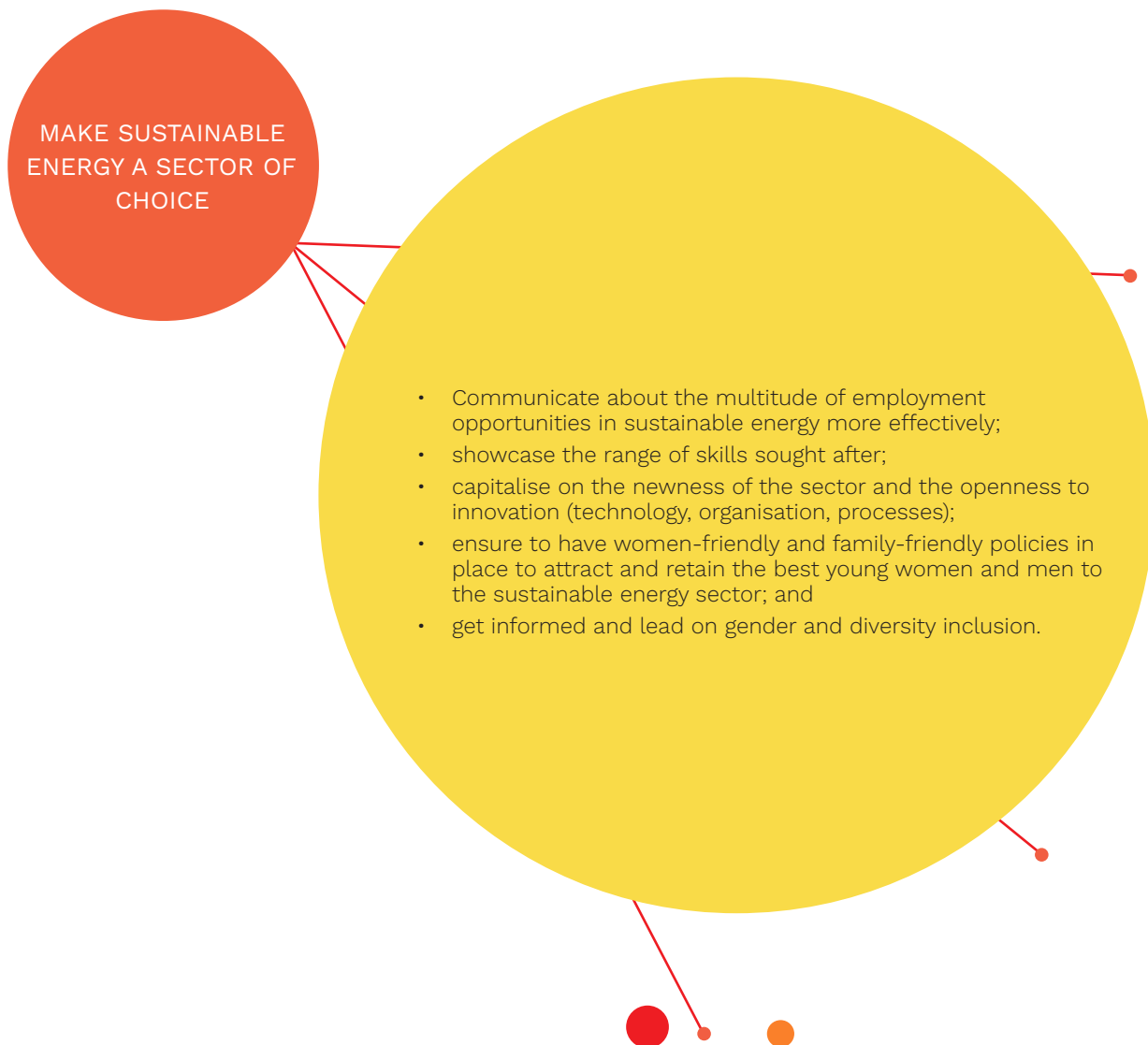
RECRUIT AND PROMOTE MORE WOMEN

For example:

- Setting targets to increase the number of women at all levels and in all areas of the organisation, including on boards and at managerial level, over a given time period;
- considering establishing mandatory quota;
- coaching women and men on unconscious bias at the workplace;
- communicating on the benefits of diversity in the workforce at all levels through appropriate channels, including social campaigns;
- creating pipelines of women within the organisation and groom individuals for leadership (e.g. through rotational programmes, transfers to other companies for skills development); and
- establishing regular and transparent reporting routines to document progress towards the goals set.

7.2 What Can Be Done to Make the Sustainable Energy Sector More Inclusive?

Sustainable energy transitions would accelerate and scale up more rapidly if they could draw on all available talent. It should therefore be our aim to eliminate biases at all levels, promote women's empowerment and enable businesses, organisations and processes to become truly inclusive. It is desirable to use every available gender and social inclusion tool to level the playing field as quickly as possible. This involves paying attention to **inclusive policy design** ('mainstreaming gender equality' in all policies and programmes) and to ongoing **human resources development**. It may lead to creating diverse company benefit packages that cover a variety of interests and goals and allow for different forms of harmonising working life and private responsibilities. It could require certain public transfers to enable companies to afford parental leave arrangements and other family-friendly work place adjustments. Transparency and accountability and the widest-possible participation will be key to this transformational change.



REFORM THE LABOUR MARKET AND WORKPLACE

- Governments to show political commitment over substantive periods of time to achieve equality between women and men in all aspects through appropriate legislation, policies and action programmes, including consideration of quotas;
- corporations to show commitment, lead from the top down, for transforming the working environment, promoting inclusion and implementing gender equality;
- communities and civil society at large to monitor governments and corporations on performance and communicate about the importance of gender equality within our communities and at all levels of society; and
- everybody to champion full enjoyment of all human rights by all persons and oppose vigorously discrimination; zero tolerance on sexual harassment.

INVEST IN THE NEXT GENERATION

- Parents, teachers, mentors to expose children early on to the concept and values of the energy transition and to the potential of sustainable energy, including through toys and games;
- educational institutes to formalise career paths specifically for women; to educate on the variety of skills needed in sustainable energy employment; to offer female-led mentoring and provide female role models in recruitment drives and the like; and
- stakeholders to level the playing field between women and men in STEM through a variety of measures, including social marketing to girls, clubs (such as 'Girls who Code'), school competitions with gender-balanced teams; targeted scholarships.

IMPROVE DATA
COLLECTION AND
ANALYSIS

- Relevant international organisations – such as SEforALL, IRENA, IEA – to pay heightened attention to the need for better gender-disaggregated data across the board and for the alignment of data across national, regional, sectoral and global studies;
- governments to work with relevant international organisations to improve the quality of their national data and to align with international standards; and
- corporations to include in their corporate social responsibility pledges a commitment to presentation of gender-disaggregated data (regarding recruitment, promotion applications and success rates, distribution of leadership roles, impacts of quotas, etc.).

COALITIONS OF THE
WILLING

- Invest time and financial support into campaigns (such as Equal by 30, #Diversity Challenge and the EHRC's Leadership Accord on Gender Diversity) and existing networks and associations (see indicative list of women networks in Appendix 5);
- become a member and/or encourage your colleagues and employees to join;
- participate in events hosted by coalitions and support research and information gathering; and
- use information published and produced by coalitions – elevate their work.

7.3 A Word to/A Message to....

<p>INDIVIDUALS (yes, us!)</p>	<ul style="list-style-type: none"> • Avoid gender stereotyping and attempt to challenge implicit bias; • be aware of day-to-day interactions (e.g. speaking time at meetings), language used, decisions made; and • if in a managerial position, support and promote competent individuals and aim for diversity.
<p>ORGANISATIONS</p>	<p>COMPANIES</p> <ul style="list-style-type: none"> • Commit to long-term transformation and diversity from the top down; • implement strategies, set indicators and reach targets; • use the many tools available, and support employee-led initiatives; • support coalitions of the willing; and • engage with educational institutions for pipeline development and continued personal development of staff. <p>EDUCATIONAL INSTITUTES</p> <ul style="list-style-type: none"> • Collect and analyse qualitative and quantitative diversity and inclusion data; • create programmes, campaigns and initiatives that support greater diversity and interest in sustainable energy; • create unbiased application processes for students and teachers; • provide career advice to students in collaboration with industry players; and • create vocational and internship programmes for students.
<p>GOVERNMENTS</p>	<ul style="list-style-type: none"> • Lead by example on gender performance, inclusion and outputs; • legislate on supportive workplace laws; • mainstream a gender perspective into all current and future policy and programmes; • leverage opportunities of the energy transition to increase diversity and inclusion; • establish targets for industry and government supported policy and programmes; • establish a cross-sectoral framework and standard for monitoring and reporting; and • enhance accountability/compliance.
<p>INTER- GOVERNMENTAL BODIES AND NGOS</p>	<ul style="list-style-type: none"> • Overcome any remaining gender-blindness in relevant international documentation; • work with governments and industry within the sector to advocate for greater inclusive practice; • support individual organisations to embrace inclusion at the workplace; • find ways to effectively target women audiences (e.g. on funding etc.); and • promote leaders and game-changers within the sector to inspire others to do better in gender and diversity inclusion.

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Appendix 1 – Definitions

The following are some definitions added to ensure that people working in different fields and sectors such as gender and social inclusion, economics and business and sustainable energy, who may be reading this document, can understand each other. There are some common words across these fields that do not share the same meaning; this list, with a small etymology attached is provided to ensure clarity of meaning throughout this document.

C-Suite in the language of the business sector refers to the Executives of a company: the Chief Executive Officer (CEO), the Chief Operating Officer (COO) or the Chief Financial Officer (CFO) and the Suite referring to the likelihood that they occupy the large offices of the company.

Diversity will be used in this report in the accepted meaning within the social sciences, i.e. it refers to difference on the basis of a large list of demographic variables, specifically those that cause marginalisation from political ‘voice’ and ‘agency’ in any given cultural context. These could include, but not be limited to: gender, ability, age, ethnicity, religion, language group, caste, socioeconomic status, sexual orientation, gender identity and expression to name the most common.

Energy Transition. A complex and radical shift of the existing energy system to a new paradigm, which goes beyond replacing fossil fuels to renewable sources to include changes “in three interrelated dimensions: 1. the tangible elements of the energy system, which include technology, infrastructure, market, production equipment, consumption patterns and distribution chains; 2. actors and their conduct, which comprise new strategies and investment patterns, as well as changing coalitions and capabilities of actors; and 3. socio-technical regimes that contain formal regulations and policies, institutions as well as mind-set and belief systems, discourse and views about normality and social practices. Therefore, the energy transition is multidimensional, complex, non-linear, non-deterministic, and highly uncertain.”¹

Gender is socially defined; we understand it as a series of learned behaviours and meanings ascribed to the sexes by each society. Being socially defined roles and norms, they are subject to evolution over time and under the influence of internal and external social, cultural, environmental and structural changes. It is also important to note that many societies have more than the binary masculine and feminine social roles defined by Western societies.

Gender-Blindness is a quality of any practice which, intentionally or unintentionally, ignores the fact that unconscious biases, workplaces, jobs and work styles can be gendered and therefore have differential impact on men, women and people of diverse gender identities.

Gender Equity is a label referring to a process or strategy (such as gender mainstreaming or representational quotas), whose ultimate goal is gender equality (which is a legal term). These can be actions or activities that promote balance or fairness for all.

Gender Equality exists where men and women and people of diverse gender identities have equal rights and access in any given society. The two terms equity and equality are commonly and inappropriately used interchangeably, though one is a process aiming at more fairness (usually defined by the dominant group) and the other is a legal term rooted in the human rights. Greater gender equality is achieved by employing gender equity strategies and processes.

Gender Mainstreaming is the “process of assessing the implications for women and men of any planned action, including legislation, policies or programmes, in any area and at all levels. It is a strategy for making the concerns and experiences of women as well as of men an integral part of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres, so that women and men benefit equally, and inequality is not perpetuated. The ultimate goal of mainstreaming is to achieve gender equality.”²

1 Oxford Institute for Energy Studies, 2019. The rise of renewables and energy transition: what adaptation strategy for oil companies and oil-exporting countries?

2 This definition follows the UN Economic and Social Council Resolution 1997/2: Agreed Conclusions. See also UN Women: <https://www.unwomen.org/en/how-we-work/un-system-coordination/gender-mainstreaming>.

Inclusion is the process of ensuring that all people, regardless of their difference, have equal access to ‘voice’ (the ability to speak on your own behalf and be listened to without fear of sanction) and agency (the freedom to make decision to act on your own and to do so), and in the case of this study, access to the sustainable energy workforce. It is a concept that operationalises a belief in universal human rights and will be used in this way throughout this document.

Intersectionality is the name given to the acknowledged amplification of disadvantage that occurs when a person experiences two or more social variables such as age, ability, indigeneity, ethnicity, language group, religion, education, etc., that typically cause marginalisation from voice and agency in any context.

The Myth of Merit. A phrase acknowledging that the idea of recruitment or promotion based on **merit** (qualifications, experience, skills and ability, etc.) is often a fallacy because of the overwhelming evidence of multiple levels of unconscious biases that create barriers for women and people of the non-dominant culture, to have their qualifications, experience, skills and ability, etc. judged on a level playing field with people from the dominant culture.

Non-traditional occupations refer to jobs that have been traditionally filled by members of the other sex based on traditional gender stereotypes. The US Department of Labor defines non-traditional occupations as occupations for which individuals from one sex comprise less than 25% of the individuals employed in each such occupation³. In some instances, these jobs vary between cultures and countries, depending on what is and has been culturally acceptable for men or women participation.

Non-traditional career pathway, also unconventional pathway, refers to the unique non-linear employment journey of an individual, where the background and education does not delineate the individual’s current or future occupation. In contrast, traditional career pathways are rooted in career stereotypes and perceived expectations within a specific country and cultural context.

Quotas are measures that fast track equity in representation of underrepresented groups on committees, on panels, in politics and the like. Political quotas can take many forms including reserved seats, legal candidate quotas or voluntary party candidate quotas. They are widely resisted for many reasons: they are said to discriminate against men and suspected to not allow for representation based on merit. Both these arguments are demonstrably spurious. Quotas work when combined with other transformative strategies.

Sex is biologically defined; effectively what people are born with: male, female and intersex based on chromosomes; hormonal profiles and internal and external genitalia.

Sustainable Energy is defined in the context of the Sustainable Development Goals (SDGs), notably in SDG 7, as a combination of providing access to modern energy services to all people on the globe, to increase substantially the share of renewables in global energy end use and to double the increase in efficiency improvements, all by 2030 (for more details on SDG 7 see Appendix 2).

Unconscious Bias is a lay adaptation of the social psychology theorem of ‘**implicit bias**’ which states that all humans have learned associations, stereotyping and discrimination as part of normal human development. It is these biases that ensure that there is no level playing field for women and cultural minorities.

Women’s Empowerment. Empowerment is a technical concept born out of feminist scholarship and has two core elements: **advancement**⁴ where women gain increased access to resources including income, employment and the like; and **transformation** of restrictive social norms and gender roles that limit women’s ability to use those resources in their cultural context without the fear of violent backlash for transgression of restrictive gender norms.⁵ Put more simply:

Empowerment = Advancement + Transformation

3 United States Department of Labor, Women’s Bureau, Traditional and Nontraditional Occupations.

4 Golla et al. 2011. Understanding and Measuring Women’s Economic Empowerment: Definitions, Frameworks and Indicators. Washington: ICRW.

5 Eves, R 2018). Do No Harm Research Project Report: Women in Formal Employment Survey. DPA & IWDA.

UN Women has successfully promoted the seven Women's Empowerment Principles with businesses across the world. These are:⁶

Principle 1: Establish high-level corporate leadership for gender equality

Principle 2: Treat all women and men fairly at work — respect and support human rights and non-discrimination

Principle 3: Ensure health, safety and well-being of all workers, regardless of gender

Principle 4: Promote women's education, training and professional development

Principle 5: Implement enterprise development, supply chain and marketing practices that empower women

Principle 6: Promote equality through community initiatives and advocacy

Principle 7: Measure and publicly report on progress to achieve gender equality

6 <https://www.empowerwomen.org/en/weps/about>

Appendix 2 – Sustainable Development Goal (SDG) 7

SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all⁷

Targets:

7.1 By 2030, ensure universal access to affordable, reliable and modern energy services

7.2 By 2030, increase substantially the share of renewable energy in the global energy mix

7.3 By 2030, double the global rate of improvement in energy efficiency

7.A By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology

7.B By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support

⁷ <https://sustainabledevelopment.un.org/sdg7>.

Appendix 3 – Study Methodology

Over a period of two months (August – October 2019), the researchers set out to answer the question, **what can we do to increase women’s employment in sustainable energy?** The report takes a deeper look at women and their current participation in the energy sector. The study provides a summary of scientific evidence on the benefits of diversity and investigates evidence on women’s propensity to take decisions in favour of renewable energy and climate change. While some of the obstacles were expected to be relevant for the overall economy (e.g. inflexible working hours, insufficient child care opportunities, or the return to the workplace after parental leave), others are particularly valid for male-dominated sectors (e.g. a low share of women in STEM studies, unconscious bias related to women’s technical capabilities, etc.).

The study looks at evidence found in literature and combines it with data derived from semi-structured qualitative interviews⁸ (see online Technical Working Document – Interview Questions) from an illustrative random sample of women and men working in the sustainable energy sector. Interview themes and trends are extracted and applied to a structural and environmental analysis. Information is primarily focused on the industrialised and emerging country context, but with a particular focus on Germany’s bilateral energy partnership countries.⁹ Throughout the document, the study draws on sector experiences and other economic sector benchmark practices as to how the identified obstacles can be successfully overcome. The study presents strategies for inclusion from a workplace perspective (Section 5) and highlights some examples already occurring in the energy sector and in other sectors. It concludes with recommendations for individuals, organisations (corporates, companies and educational institutes), government and international organisations, on appropriate strategies and measures for the sustainable energy sector (Section 7).

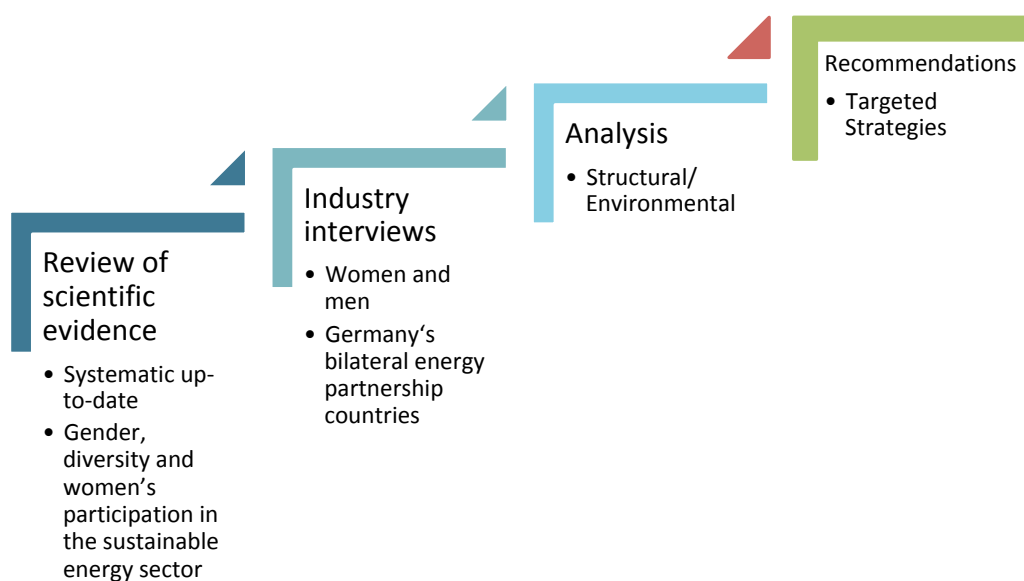


FIGURE 21: STUDY METHODOLOGY

Source: Authors’ illustration

Lastly, this is not an academic study and it is not intended to be a representative sample. Rather it is an investigation, through the literature and through discussion with colleagues willing to share their experiences with us, to answer the question, what can we do to increase women’s employment in sustainable energy? The global evidence on the inclusion of women in the workforce is ample and the interviews contribute valuable workplace insights specific to the sustainable energy sector.

⁸ Interviews were recorded and lasted between 30 mins and 2 hours.

⁹ Currently such energy partnerships exist with the following countries: Algeria, Australia, Brazil, China, India, Iran, Japan, Jordan, Kazakhstan, Morocco, Mexico, Russia, Republic of Korea, South Africa, Tunisia, Turkey, Ukraine, USA, United Arab Emirates.

Appendix 4 – Structural and Environmental Framework and Analysis Extract

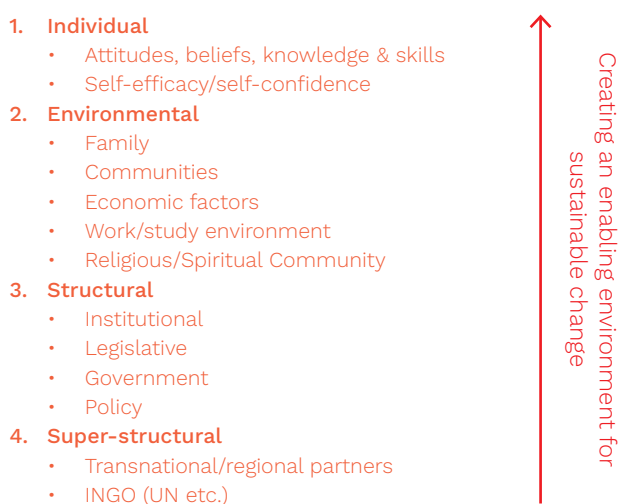
The Structural and Environmental Analysis Framework was designed by USAID as a way of analysing the potential for contextual behavioural change in the midst of the HIV epidemic in Africa. It is effective because it encompasses all levels at which change must occur for it to be sustained. This type of analysis was designed when ‘environment’ referred to your work setting or health care setting etc. In this context it refers to the workplace within the sustainable energy sector.

Purpose:

To deconstruct access issues in a way that suggests multilevel strategies for dealing with them

Process:

- Identify barriers to, and enablers of, change at all levels
- Suggest ways of dealing with the barriers and promoting enablers



Individuals can only make lasting change if the structural and environmental level context supports the change. This is called creating an ‘enabling environment’.

Super-structural influence may be supportive (human rights and status of women conventions, treaties and INGO legal framework), and useful for making structural-change arguments, but the most crucial elements for lasting change for individuals is to create an enabling environment at the structural and environmental levels through the most contextually appropriate ways. Plan action through analysis; ranking action priorities, but make sure all structural and environmental actions are in place before commencing individual behaviour change interventions, otherwise the effort is lost.

Participants in the interviews were asked to assist in filling out this framework to ensure that we engaged with all the change necessary to make women feel welcome in the sustainable energy sector. Their thoughts are captured in entirety in Section 2 of the online Technical Working Document.

This analysis was based on the question:

What can we do to increase women’s employment in sustainable energy?

Definitions:

- Barrier = something blocks or prevents your desired goal (Equitable employment for women in sustainable energy)
- Enabler = something that facilitates or promotes your desired goal (Equitable employment for women in sustainable energy)
- Solution = deconstruct the barrier & promote the enabler to achieve the goal – practical actions.

The table below shows an exemplary excerpt of the analysis. The entire analysis is available in Section 3 in the online Technical Working Document.

Analysis Extract of Selected Barriers, Enablers and Solutions

generic (black) STEM (orange) sustainable energy (green)

INDIVIDUAL LEVEL (ATTITUDES, BELIEFS AND KNOWLEDGE, SKILLS AND TRAINING)		
Barriers	Enablers	Solutions
<ul style="list-style-type: none"> Girls/women afraid to be ‘nerds’, to be ‘smart’, to like STEM and to do well¹⁰. 	<ul style="list-style-type: none"> Initiatives that support girls interests in STEM and start ‘tinkering’ with kit at an earlier age; 	<ul style="list-style-type: none"> Parent training to support children’s interests in non-traditional roles, especially girls interested in STEM fields
<ul style="list-style-type: none"> Perception of a job is that it is more ‘masculine’ in nature: e.g. lacks people engagement, cubicle/ Dilbert/boring engineer, not strong enough, lack the physical strength to work on power plants 	<ul style="list-style-type: none"> Girls and women see other women working and operating in the industry, whom they can identify with; to imagine and visualise themselves working in sustainable energy careers; and that the sector is appealing to their interests 	<ul style="list-style-type: none"> Visibly promote and celebrate women Put women as the gate keepers (outside of HR) as the point of contact to speak with other women considering joining the industry and sector Rebrand the sustainable energy sector to identify with broader diversity and interests of the workforce –“like attracts like”
<ul style="list-style-type: none"> General lack understanding of sustainable energy careers, unaware and unfamiliar with the technology and industry, as well as socio-economic impacts of the industry¹¹. 	<ul style="list-style-type: none"> Initiatives that demonstrate a wide variety of careers outside of STEM but needed for the sustainable energy industry 	<ul style="list-style-type: none"> Disseminate information about careers in sustainable energy as a social and economic solution not just a technical solution; to attract more women who choose careers for social betterment

ENVIRONMENTAL LEVEL (WORKPLACE, EDUCATIONAL ENVIRONMENT OR COMMUNITY)		
Barriers	Enablers	Solutions
<ul style="list-style-type: none"> Women’s ideas and perspective is different to men, there is no process to manage and integrate new ways of thinking 	<ul style="list-style-type: none"> Enabling environments where women and all people at the table have an equal voice and are heard. Creating engagement and communication environments where women feel safe to express their views and one that is not harmful to their reputation Recognising women’s (and men’s) different perspectives and the commercial and intrinsic value. 	<ul style="list-style-type: none"> Inclusive input strategies within boardrooms and meetings Company supported volunteer steering committees and working groups that focus on gender and inclusion strategies – addressing barriers specific to women, inclusion and diversity.
<ul style="list-style-type: none"> Despite gender and inclusion policies, implementation and uptake falls short – there is no accountability within management and no consequence for underperformance on quotas. 	<ul style="list-style-type: none"> Gender equality accountability for managers and decisions makers; non-performance consequences. 	<ul style="list-style-type: none"> Hire a person or team to drive gender and inclusion vision forward, implement policy into practice. Enforce accountability: Gender and inclusion goals are tangible and measurable within KPIs of managers, and leaders. Financial/ commercial consequence for underperformance.

10 EXAMPLE: Interviewee – A career pathway as a SE engineer meant “I had strong role models, a supportive family, and established a STEM connection prior to the age of 12, by age 12 the societal pressures of gender stereotypes start to shape your world and what is expected of you”.

11 IRENA (2019:34) “Women may be less likely to choose occupations in engineering and technology because those fields may not appear as socially useful as other disciplines such as the medical and biological sciences.”

STRUCTURAL LEVEL (GOVERNMENT, LEGISLATION, INDUSTRY BODIES AND ASSOCIATIONS)

Barriers	Enablers	Solutions
<ul style="list-style-type: none"> Workforce migration from fossil fuel sector → sustainable energy became less about ‘saving the world’ and more corporatised – a ‘hangover’ effect of out-dated patriarchal hierarchies and systemic management structures 	<ul style="list-style-type: none"> Renewable energy is regarded as a new and ‘innovative’ field and can attract a broader spectrum of people and not adopt the ‘old school’ traditions Energy sector education that is integrated with sustainable energy and vice versa – embedding transferable skills 	<ul style="list-style-type: none"> Actively recruit outside the conventional and fossil fuel sector Campaign to ‘rebrand’ sustainable energy sector image, e.g. highlighting the different roles, skills and talents in the sustainable energy sector; this is not just a job in STEM and STEM is not what you think it is, sustainable energy has a social component, focus on entrepreneurship and top management; and showcase women in ALL these roles
<ul style="list-style-type: none"> Gender and diversity metrics/quotas that are not disaggregated e.g. disaggregate roles/skills level/profession (eg cleaner, PA, etc)¹² 	<ul style="list-style-type: none"> Gender audits: quotas, equal pay scales, disaggregated roles, policies versus practice Focus on qualitative metrics and language 	<ul style="list-style-type: none"> In the UK, Employers with 250 or more employees must publish and report specific figures about their gender pay gap¹³ annually.
<ul style="list-style-type: none"> A ‘mens club’ in the energy sector doesn’t exist yet for women 	<ul style="list-style-type: none"> Women in leadership positions are authentically visible. Mentorship/leadership programmes across the industry 	<ul style="list-style-type: none"> Forming and supporting women in RE/EE associations (national and international networks) – financially supporting

SUPER-STRUCTURAL LEVEL – UN/INTERNATIONAL AGREEMENTS/CONVENTIONS/GLOBAL ORGANISATIONS

Barriers	Enablers	Solutions
<ul style="list-style-type: none"> Many organisations/agreements but some of them are perceived as gender blind or do not communicate the gender dimension adequately 	<ul style="list-style-type: none"> International/National platforms SDG 5, SDG7, UN Women CEDAW 	<ul style="list-style-type: none"> Work with these organisations to gender up their documents or to communicate more clearly their gender commitments Use SDGs etc as leverage with government
<ul style="list-style-type: none"> Gender policy is often a political statement, that does not translate to practice and output Accountability of vision does not trickle down to practical implementation of the sustainable energy sector 	<ul style="list-style-type: none"> The Gender Action Plan agreed at COP 22 (decision 3/CP23) in Marrakech¹⁴ and the enhanced Lima work programme on gender and its gender action plan at COP 25 in Madrid¹⁵ seek to advance women’s full, equal and meaningful participation and promote gender-responsive climate policy Nationally Determined Contributions (NDCs) submitted under the Paris Agreement may offer opportunities to incorporate gender issues National level ‘Women in Energy Networks’ 	<ul style="list-style-type: none"> Communicate realities of women’s participation to drive the sector forward; that it is essential to the success of the industry; necessary to increase implementation and achieve ambitious international goals Using the ‘energy transition’ as a transition to a more diverse work force

12 There are a few exceptions, South Africa for instance – the REIPPP, requires top management quarterly reporting of black women (not just women) and procurement from women owned entities.

13 <https://www.gov.uk/guidance/gender-pay-gap-reporting-overview>

14 <https://unfccc.int/topics/gender/workstreams/the-gender-action-plan>

15 https://unfccc.int/resource/cop25/cop25_auv_13gender.pdf

Appendix 5 – List of Selected Women’s Networks

(Alphabetical order)

ORGANISATION	LOCATION	URL
Entrepreneurial Women in Renewable Energy (EWIRE)	UK	https://www.regen.co.uk/area/women-in-renewables/
Hypatia	Germany	https://www.hypatia-network.de/
International Network on Gender and Sustainable Energy (ENERGIA)	International	https://www.energia.org/
La Red Mujeres en Energía Renovable y Eficiencia Energética (REDMEREER)	Mexico	https://redmujeresenergia.org/
Nordic Energy and Equality Network (NEEN)	Nordic/Baltic countries	https://www.nordicenergy.org/project/neen/
Rede Brasileira de Mulheres na Energia Solar (Brazilian Women Solar Energy Network)	Brazil	
Turkish Women in Renewable and Energy Network (TWRE)	Turkey	https://twre.org/
WePower – Women in Power Sector Network	South Asia	https://www.linkedin.com/groups/12139181/
Women Building Power: African women against destructive resource extraction (WoMin)	Africa	https://womin.org.za
Women in African Power (WiAP)	Africa	https://www.usaid.gov/powerafrica/gender
Women in Cleantech (WCS)	USA	https://www.womenincleantechsustainability.org/
Women in Energy	Pakistan	https://www.linkedin.com/company/women-in-energy-pakistan/
Women in Energy (WONY)	Central and Eastern European Countries	https://www.womeninenergy.eu/
Women in Energy Ethiopia	Ethiopia	https://www.facebook.com/ethiopianwomeninenergy/
Women in Renewable Energy (WiRE)	Canada	https://www.womeninrenewableenergy.ca
Women in Renewable Energy (WIRE)	International	https://www.clintonfoundation.org/our-work/clinton-climate-initiative/programs/WIRE-Network
Women in Renewables Asia (WiRA)	Asia	https://www.womeninrenewables.org/
Women in Renewables Initiative from the Clean Energy Council (CEC)	Australia	https://www.cleanenergycouncil.org.au/advocacy-initiatives/women-in-renewables
Women in Solar Energy (WISE)	USA	https://www.solwomen.org/
Women in Sustainability (WiS)	India	https://www.ceew.in/impacts/women-in-sustainability
Women in Sustainability, Environment and Renewable Energy, UAE (WiSER)	UAE	https://masdar.ae/en/strategic-platforms/wiser
Women of Renewable Industries and Sustainable Energy (WRISE)	USA, Canada	http://wrisenergy.org/

Appendix 6 – PWC CEO Action for Diversity & Inclusion Pledge¹⁶

We recognize that diversity and inclusion are multi-faceted issues and that we need to tackle these subjects holistically to better engage and support all underrepresented groups within business. To do this, we believe we also need to address honestly and head-on the concerns and needs of our diverse employees and increase equity for all, including Blacks, Latinos, Asians, Native Americans, LGBTQ, disabled, veterans and women. This group convened to ask what we can do collectively as business leaders, because one fact is clear: we have to do more. For us, this means committing to four initial goals that we hope will catalyze further conversation and action around diversity and inclusion within the workplace and foster collaboration among our organizations:

1. **We will continue to make our workplaces trusting places to have complex, and sometimes difficult, conversations about diversity and inclusion:** We will create and maintain environments, platforms, and forums where our people feel comfortable reaching out to their colleagues to gain greater awareness of each other's experiences and perspectives. By encouraging an ongoing dialogue and not tolerating any incongruence with these values of openness, we are building trust, encouraging compassion and open-mindedness, and reinforcing our commitment to a culture of inclusivity.
2. **We will implement and expand unconscious bias education:** Experts tell us that we all have unconscious biases -- that is human nature. Unconscious bias education enables individuals to begin recognizing, acknowledging, and therefore minimizing any potential blind spots he or she might have, but wasn't aware of previously. We will commit to rolling out and/or expanding unconscious bias education within our companies in the form that best fits our specific culture and business. By helping our employees recognize and minimize their blind spots, we aim to facilitate more open and honest conversations. Additionally, we will make non-proprietary unconscious bias education modules available to others free of charge.
3. **We will share best—and unsuccessful—practices:** Each of our companies has established programs and initiatives around diversity and inclusion. Yet, we know that many companies are still developing their strategies. We will commit to helping other companies evolve and enhance their current diversity strategies and encourage them, in turn, to share their successes and challenges with others.
4. **We will create and share strategic inclusion and diversity plans with our board of directors.** We will work with our board of directors (or equivalent governing bodies) through the development and evaluation of concrete, strategic action plans to prioritize and drive accountability around diversity and inclusion. Given the shared responsibility for driving strategies that help companies thrive, boards and CEOs play an important role in driving action together to cultivate inclusive cultures and talent.

We also pledge to create accountability systems within our companies to track our own progress and to share regular updates with each other in order to catalog effective programs and measurement practices. We believe that by sharing and learning with each other, we can strengthen our existing programs and commitments to better serve our employees and society as a whole.

We recognize that these four commitments are not the complete answer, but we believe they are important, concrete steps toward building more diverse and inclusive workplaces. We hope our list of signatories will grow, and we invite other CEOs across America to join us.

Let's come together to make good on the inherent promise that all of our people should be able to bring their best selves to work and unleash their full potential. By working together toward diversity and inclusion within our workplaces, industries, and broader business community, we can cultivate meaningful change for our society.

¹⁶ <https://www.ceoaction.com/pledge/ceo-pledge/>

www.globalwomennet.org

