
COBENEFITS IMPULSE

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Opportunities and barriers for women in South Africa's energy transition





Imprint

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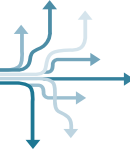
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Opportunities and barriers for women in South Africa's energy transition

This COBENEFITS Impulse is based on research within the COBENEFITS project and interviews with women working in high-skilled jobs in the energy sector in South Africa, conducted in May and June 2022.

Women are underrepresented in the energy sector. Globally, women hold around one fifth of the jobs in the oil and gas industry and less than a third of the jobs in the renewable energy sector. The situation is similar in South Africa, where **women account for just 31% of the employees of state-owned electricity**

utility Eskom and 21% of the workforce in the coal sector.¹ Female underrepresentation is currently even worse in South Africa's renewable energy sector, where women account for only 14% of employees.

However, those female employees are usually better educated than their male colleagues (e.g., 67% of females compared to 49% of males at Eskom hold a post-matric qualification), which results in females holding proportionately higher positions despite being underrepresented in absolute terms.



The energy transition in South Africa is also a chance to employ more women, who are currently underrepresented in the power sector. © Shutterstock/AS photostudio

¹All figures in this article taken from (IASS/IET/CSIR, 2022a), unless indicated otherwise.

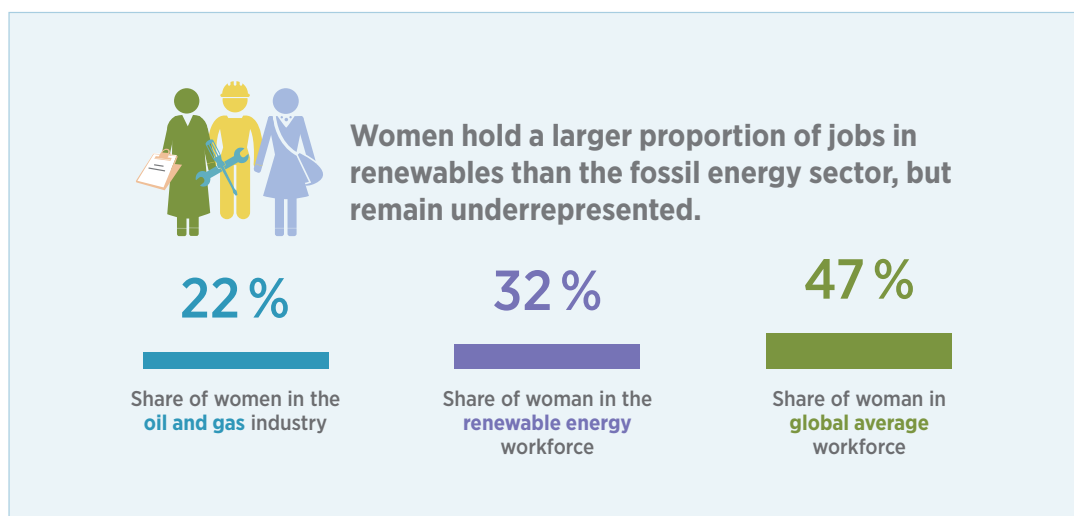


Figure 1:
Share of female workers
in the energy sector
(fossil and renewable)
and compared to global
average

Source: Vangchuay & Niklaus
2021, IRENA 2019

How women experience working in South Africa's power sector

Women working in high-skilled jobs in South Africa's energy sector tell similar stories. The way to higher education requires many to get a bursary, for which they have to be top students in school. While the women we talked to felt that they enjoyed the same opportunities as their male peers to go to university, they found that women are largely underrepresented in STEM subjects (science, technology, engineering, and math), a fact faced also in modern Western countries.

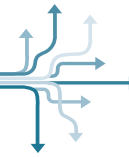
This trend continues once they start their career: women working in the power sector often find that they are both the only woman and the youngest person in the room, a situation that can make it difficult to feel like they belong and that their opinion matters. **Vuyo Matiwane**, Technical Project Development Manager at BTE Renewables, forced herself to speak up at least once in every meeting to be heard and seen, even though she was scared to do so at first. **Devaksha Maharaj**, founder and Managing Director of IKIGAI Engineering, experienced being treated as an assistant and being asked to take notes, even when it was clearly someone else's job, so she learned to make sure that everybody understands who is the engineer in the room – “very gracefully”, she says, in order not to step on anyone's toes.

Another difficulty lies in the lack of support for women. **Lenah Mabusela**, Power Engineer at Globeleq, states that even if women have the same qualification as their male peers, they still always need to prove their competence. “Women are extremely capable. They do a

lot with little resources”, she says. “Women don't need their hands held. They only need their seniors to treat them in the same professional way as they treat their male colleagues and give them the same opportunities.” Unfortunately, in her experience, that is still not often the case. How do women deal with situations like this? Devaksha Maharaj advises women to stick together and get advice from women in similar positions. On the other hand, **Mamoso May**, CEO of Dorper Wind Farm, says it takes men in power to speak on behalf of women to break up the male-female divide and foster mutual appreciation. Vuyo Matiwane never had a mentor herself but is now part of the mentoring programme “Energising Women to Advance the Energy Transition” organized by the Global Women's Network for the Energy Transition (GWNET) in partnership with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), and wishes to guide other young and emerging female professionals in the renewable energy sector.

Having to choose between career and family

One of the most challenging issues for many women is the need to balance the demands of professional and family life. The province of Mpumalanga has a high teenage pregnancy rate, which represents a challenge in bridging the skills gap between males and females. Women without minor children have **higher labour participation rates** than those with minor children. It is evident that childcare responsibilities are a limiting factor for career development, particularly among women. Because of the high poverty rate among less qualified people in South Africa, women are obliged to



work full time and must often shoulder the burden of managing a household and commuting long distances to childcare facilities alone. It is therefore crucial to provide childcare facilities near training centres and working hubs.

But also highly skilled women that have long working hours or whose job requires them to work on-site at power stations for longer periods struggle to find the time for a partner or a family because they don't get the support they would need. In fact, many of our interviewees perceive that women in South Africa are still expected to care for the children and do the housework on top of their paid job. Mamoso May was told by a former manager that he would not employ young women because they might get pregnant and miss work. As a result of this lack of support, many women sacrifice either their job or their personal life with the decision not to have children – or they postpone this decision until their forties. “Men don't have to choose – they can have both”, Lenah says, pointing out the obvious imbalance between the gender roles.

Being her own boss and having the support of her husband, Devaksha Maharaj can plan her working hours around her children's needs, but most women don't have this opportunity. Vuyo Matiwane notes that reduced working hours are not common in the country but could help women with families to stay in their jobs, earn an income, and not fall behind. Day-care centres at the workplace or being able to work from home would also be a good start to make the sector more family friendly, as well as breastfeeding stations at power plants for young mothers working on-site. Women who start a family often also lack financial security: at the moment, South African employees are only **entitled to four months of unpaid maternity leave (Labour Guide South Africa)**, leaving many mothers only with the option to apply for unemployment benefits.

Opportunities for women

Despite these barriers: what benefits and opportunities do women working in the energy sector see for themselves and other women? Lenah Mabusela says she chose engineering because it was considered a stable career. Mamoso May values the social aspects of her work: South Africa's renewable energy procurement policy is unique globally in its emphasis on providing benefits for communities in the vicinity of projects. With parts of the revenue of the wind farm managed by May, school toilets could be fixed, and the programme runs health tests for kids and supports promising students to enable them to go to university.

Bertha Dlamini, Founding President of African Women in Energy and Power (AWEaP), explains that her interest in energy stems from the opportunities and dignity that it allows people and communities: “Access to electricity enables access to information, to quality education, to health care, and an overall better quality of life.” With a current **electrification rate of 85%** (Worldbank, 2022), many people in the country are still excluded from these benefits, and the rate is much lower in the rest of Sub-Saharan Africa.

STEM careers are a traditionally male dominated field. How can girls and women be persuaded that there is a place for them in the field? Devaksha Maharaj's IKIGAI courses introduce children as young as two years to STEM subjects: “It is important to get the kids interested in the topic at a very young age. And they need to learn that women can do these jobs, too – which is why we go into schools and talk to them, so they can see us”, she explains. Vuyo Matiwane recommends implementing information campaigns and mentorship programmes in high school, when teenagers begin making decisions about their future jobs.

Transitioning towards more equality

There are practical aspects that need to be considered to make women feel comfortable and safe working on-site, such as protective gear, gloves and shoes in women's sizes, and gender-segregated bathrooms. But the real challenge lies in overcoming the less-visible barriers for women in a male-dominated sector. “Patriarchy is deeply embedded in the core of our society. But you cannot force change in mental models. You need to make a business case for women”, says Bertha Dlamini. In other words: men in power need to see the benefits of employing and working together with women if they are to change their views.

“The country is transforming. It is a good time to make a positive change for women in the power sector” – these words by Bertha Dlamini express a view shared by many. A relatively new sector, **renewable energy offers opportunities** for women to participate, as it is not weighed down by the “male industry” structures that dog the old energy industry. Energy transitions towards renewables result in new career opportunities that do not require as much heavy physical work as coal mining, for example. The bulk of job creation in renewable energy is within the high-skilled labour group (estimated as 68–80%), so upskilling and higher education are pre-requisites for women to be part of the energy transition. Women could be educated and empowered by establishing dedicated programmes at



Figure 2:
Facilitating gender-
inclusive careers in the
energy sector

TVET (technical and vocational education and training) colleges and by providing childcare facilities close to training centres.

Although the renewable energy sector is currently male dominated, leading organisations in the sector are providing mentorship and coaching to enable women to take on leadership roles. One of them is the Gender Diversity Working Group, a collaboration between SAWEA and SAPVIA that also includes WE Connect, a non-profit organisation focusing on female empowerment within the renewable energy sector. AWEaP offers energy sector orientation webinars and other targeted interventions to introduce women to the value chains that drive electricity production and help them identify entrepreneurial entry points, as well as integrate

women-owned and -led companies into local and global supply chains in the energy and power sector.

There is also increasing political support for women in the energy sector. The Energy Sector Gender Ministerial Advisory Council, founded in 2021, has the role of monitoring the participation of women in the energy sector and reporting to the minister and his executives. And the Prime Minister of Mpumalanga, Refilwe Mtshweni-Tsipane, emphasized on the side lines of the Mpumalanga Energy Summit 2022 that many women have the skills needed to transform the energy system in her province: “Our women are capable. For far too long, they have been disadvantaged. I advocate for women to be at the centre of the energy transition.”

Literature and recommended reading:

Individual portraits and short videos of women in South Africa’s power sector can be found on www.cobenefits.info/category/blog

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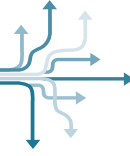
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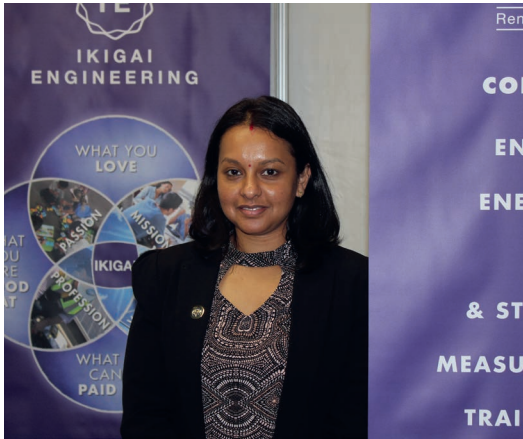
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Devaksha Maharaj, Managing Director IKIGAI Engineering

Devaksha Maharaj is the founder and Managing Director of IKIGAI Engineering, a consultancy offering energy management advisory services to households and companies. Their services include measurement and verification as well as installation and maintenance in the electrical and renewable energy sectors.



In the course of her career, Devaksha has had to cross several barriers as a woman in a male-dominated sector. It started at home: coming from a very traditional background, her aunt did not understand why she wants to do “a man’s job”. A bursary from Eskom allowed Devaksha to study engineering at the University of KwaZulu-Natal. After completing her bachelor’s degree, she worked at different power stations and smelters before changing to consulting.

Dealing with toxic situations at work

At her previous workplace, Devaksha experienced gender-based discrimination by a male superior, who she later found out was notorious for his inappropriate behaviour towards women. But nobody dared to speak up, out of fear of losing their jobs. Devaksha pushed back, which resulted in her being suspended. She launched a grievance procedure and finally decided to leave that company – a tough decision, because she had loved her job.

During that difficult time Devaksha came to realize two things: Firstly, that South Africa does not support women in cases like hers. She put a lot of money

into filing her legal complaint and finally had to drop the case, because taking it to court would have been too expensive. Her advice for other women going through similar situations is to reach out to somebody like her. She says that with the networks she has today, she would be able to deal with the situation differently.

The second lesson she learnt was that she had always given everything for the companies she worked for and got little back, so she decided to start her own business – but first, she had to learn how to be an entrepreneur from scratch. IKIGAI Engineering kicked off in 2018. Besides consultancy services, the company also has a strong focus on training and development and STEM (science, technology, engineering and math) education for kids.

How to get more women into technical jobs?

The STEM courses target kids as young as two years old: “It is important to get the kids interested in the topic at a very young age. And they need to learn that women can do these jobs, too – which is why we go into schools and talk to them, so they can see us”, Devaksha explains.

On being asked what else she considers important to support women in energy careers, Devaksha highlights the role of mentors: many of the women she mentors herself are scared to speak up in a room full of men, an insecurity they work on together. Devaksha’s own mentor is a new mum, like herself, so they can discuss the hardships of combining a career with family life.

Finally, it also takes political change to encourage women to work in the energy sector. Devaksha is therefore part of the Energy Sector Gender Ministerial Advisory Council, which has the role of monitoring the participation of women in the energy sector and reporting to the minister and his executives.

A lot still needs to change, Devaksha says, remembering meetings in which she was asked to take minutes just because she was a woman, even though it was clearly someone else’s job. Her impression is that many females are afraid to push back, but it must be done: “You have to do things very gracefully. But make sure they understand who the engineer in the room is.”

Photo:
Devaksha Maharaj
© IASS/Lebrun

Bertha Dlamini, Founding President African Women in Energy and Power

Bertha Dlamini is the Founding President of African Women in Energy and Power (AWEaP), a non-profit company working to accelerate African women entrepreneurs' participation in the energy sector. After studying Marketing, she started her career in consulting and in 2006 founded her own marketing company Rito Consulting Services.



Driven by a need to grow and diversify her business interest, she accepted an opportunity to partner with EON Consulting, an engineering consulting firm. When Bertha first started working at EON Consulting, only very few women leaders were employed in the energy sector. In fact, during her first three years, Bertha was often the only female, the only black person, and often the youngest in many industry forums. While she was the first black female partner at the engineering consulting firm. But she did not experience this as a negative: **"I was a novelty, and a welcome one."** Bertha says she brought gentleness, a different way of interacting with employees. That being said, she also describes herself as a confident and goal-oriented person who wasn't bothered by other people's opinion of her. What mattered to her was that she got respect from her team and the board based on the positive and tangible contribution she brought to the company and the industry.

Bertha describes that the hook for her interest in energy stems from the opportunities and dignity that it allows people and communities: "Access to electricity enables access to information, to quality education, to health care, and an overall better quality of life." With a current electrification rate of 85%, many people in the country are still excluded from these benefits, and the rate is much lower in the rest of Sub-Saharan Africa.

Photo:
Bertha Dlamini
© IASS/Lebrun

Making a business case for women

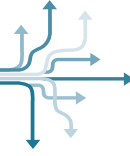
Bertha soon realised that there was no body of knowledge on women working in the energy sector globally, especially women in the nexus of entrepreneurship, energy and infrastructure development. In South Africa, 35% of South African women are unemployed¹, and the situation is even worse for black women (41%)². AWEaP is working to make a difference to that number by introducing women to the value chains that drive electricity production and helping them identify entrepreneurial entry points. AWEaP delivers energy sector orientation webinars and other targeted interventions that aim to integrate women owned and led companies to local and global supply chains in the energy and power sector. This includes access to finance, networks and credible market information.

What does it take to employ more women in the power sector? There are practical aspects that need to be considered to make women feel comfortable and safe working on-site, such as protective gear, gloves and shoes in women's sizes, gender-segregated bathrooms, and breastfeeding stations. But the real challenge lies in overcoming the less-visible barriers for women in a male-dominated sector. "Patriarchy is deeply embedded in the core of our society. But you cannot force change in mental models. You need to make a business case for women", says Bertha. In other words: men in power need to see the benefits of employing and working together with women in order to change their views. "The country is transforming. It is a good time to make a positive change for women in the power sector."

¹<https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=ZA>

²<https://data.worldbank.org/indicator/SL.UEM.TOTL.FE.ZS?locations=ZA>

³<https://www.statssa.gov.za/?p=14606>



Mamoso May, CEO Dorper Wind Farm

Mamoso May is the CEO of Dorper Wind Farm, an Independent Power Producer in the Eastern Cape of South Africa with a generation capacity of 100 MW. Her successful career path was not linear: When Mamoso was at university, she worked part time as a server in a restaurant. One of the guests offered her a job in her accounting business. From there Mamoso worked her way up and gained more experience until she joined Dorper Wind Farm in 2013.



South Africa's renewable energy procurement policy is unique globally in its emphasis on providing benefits for communities in the vicinity of projects. Dorper Wind Farm has invested in the neighbouring communities of Molteno and Sterkstroom in several ways. For example, they fixed windows and doors of the local school so that pupils do not freeze in cold winters. They also installed toilets in the school, run health tests, and support promising students to enable them to go to university. It is this part of her work that Mamoso values the most.

“Women still need to choose between career and family”

Mamoso's career came with a price. She waited to have children because she did not want to be excluded. A former manager told her that he did not want to employ young women because they might get pregnant and miss work. She has seen women work during their maternity leave out of fear of being disadvantaged. With no obligation for South African employers to pay women during maternity leave, they have to rely on unemployment benefits, so they also face financial insecurity.

In her experience, another barrier for women is the way in which their male peers are organized: “Men have clubs. They do not call them that, but they are clubs.” In response, women are now coming together in their own closed circles. But in Mamoso's view, these solely male, solely female clubs are not the way forward: “We need respected men to speak on behalf of women – a male sponsor that brings women to the table.” In her opinion, this approach is more beneficial than the guidance of a female mentor. But to see real change, she emphasizes that it also takes people in charge willing to employ women in STEM jobs (science, technology, engineering, or math), and men in non-STEM jobs. With traditional STEM careers, there is still the stereotype that jobs are “too rough for women”. The energy transition is creating new jobs that require diverse skills, and Mamoso sees lots of opportunities for women in the renewable sector, even those who do not want to work “with their hands”.

Based on her own experience, she gives one recommendation: “Surround yourself with people that trust you, and find a board that believes in you.” A piece of advice surely easier said than done, but Mamoso's career and her cheerful charisma prove that it is possible.

Photo:
Mamoso May

© IASS/Lebrun

Lenah Mabusela, Power Engineer

Lenah Mabusela is a Power Engineer at Globeleq, an international power company. Having grown up in a township, she chose engineering because it was considered a stable career. A bursary from ESKOM, South Africa's state-owned electricity utility, enabled her to study Electrical Engineering.



At the time she graduated from university, ESKOM put a halt on renewables because they were not considered economically feasible – a situation very different from today. So Lenah worked at a petrochemical plant in Mpumalanga for a while, where she was tasked with optimizing operations. She lived in a small town close to the plant, surrounded mostly by men – at times, it was a rather harsh environment to work and live in. The situation is better at her current employer. At Globeleq, more and more women hold senior positions, even in technical fields.

Proving your competence

Lenah remembers many occasions when she was treated differently because she is a woman. Her requests were ignored, and as a consequence, her work was

delayed. But she feels she can't complain. And she can't make mistakes at work, because it will be blamed on her gender. Which is problematic: "Mistakes happen. You will never do anything worthwhile if you always avoid making mistakes."

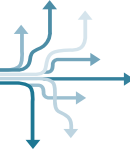
In her experience, even if women have the same qualification as their male peers, they still always need to prove their competence. After an incident where some of her male colleagues behaved very unprofessionally, raising their voices at her, she says she was done being nice. But she remained professional. "You can never be out of character. You always have to be the bigger person." It can be exhausting at times, but Lenah says there are also positive examples. "Most of the seniors are male, and you need their support. Some are very professional, and that's all you need. You don't need anybody to hold your hand."

Having to choose

Like many women, Lenah felt like she had to choose between family and a career. She says women are still expected to care for children and do the housework on top of their paid job. "Men can have a career and a family without compromising. A woman has to sacrifice one, to some extent." She believes that job security would improve the situation for women a lot. But as long as it's women who stay home with the kids, they will always have a disadvantage compared to their male colleagues because they can't progress at work.

We still have a long way to go in terms of equality, Lenah says, but she is hopeful: the environment is changing. More and more women are entering the power sector, though they are not always given the tasks they should be given. "The industry needs to understand that women are extremely capable. That they do a lot with little resources. And girls need to understand that, too."

Photo:
Lenah Mabusela
© IASS/Lebrun



Vuyolwethu Matiwane, Technical Project Development Manager

Vuyolwethu Matiwane, or Vuyo, is a Technical Project Development Manager (formerly Grid manager) at BTE Renewables, an energy producer with utility-scale wind and solar projects across Africa. She holds a Bachelor in Electrical Engineering and is currently concluding her Master's in Wind Energy at DTU in Denmark.



Vuyo grew up in a village without electricity in the Eastern Cape without electricity. One day her father, who worked in a mine, brought home a small solar panel. The device allowed the family to charge their phones and batteries and listen to the radio. It was just a start, but Vuyo's fascination for electricity was born. She was good at school, so it was always clear that she would go to university, despite multiple barriers: She needed a bursary, for which she had to be a top student. And once her classes started, she realized that only a quarter of her classmates in electrical engineering were women.

“Be scared, but do it anyway”

For years at work, Vuyo was usually the only female and often the youngest in the room – not an easy situation, especially for an introvert like her. She had to face internal barriers, and she wondered if she belonged and if anyone wanted to hear her opinion. That is when Vuyo decided on a rule that she has followed ever since:

never to leave a meeting without saying something. “Confidence builds over time. Be scared, but do it anyway”, Vuyo says with a smile. “If I did not speak up in that meeting back then, I would not be speaking in auditoriums in front of 100 people now.”

The energy sector is still a man's world – and not only in total numbers: men also hold most senior positions. Vuyo says she always felt like she had to be exceptional at her job, so that nobody could say she was not good at it because she is a woman. “On the one hand you have impostor syndrome, on the other hand, you have to be the best”, she says, laughing. This pressure, combined with a heavy workload and site visits that can sometimes take weeks, leaves little time for a partner or family. “Reduced working hours are not common in South Africa but would help women to have a career and a family. As would being able to work partly from home and having day-care centres at offices for those with families and kids.”

Guiding women to start a career in renewables

Even though there is still a lot that needs to change, Vuyo sees a positive trend: the industry is actively looking to employ more women, and the energy transition is creating new jobs that allow women to be in technical positions without doing hard physical labour. In her opinion, job information campaigns and mentorship programmes should start in high school, because that's when kids start making decisions about their career. She regrets that she never had a mentor that could show her the ropes. Now she is part of the mentoring programme **“Energising Women to Advance the Energy Transition”**, organized by the Global Women's Network for the Energy Transition (GWNET) in partnership with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), and wishes to take on that role herself and guide other young and emerging female professionals in the renewable energy sector. It's about time that she is no longer often the only woman in the room, she adds.

Photo:
Vuyolwethu Matiwane
© IASS/Lebrun

COBENEFITS

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

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

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