

OPPORTUNITIES AND CHALLENGES IN ENGENDERING THE AFRICAN ENERGY VALUE CHAIN

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EXECUTIVE SUMMARY

This policy briefing draws on the findings of a discussion paper² examining South Africa and Rwanda's efforts to include women in the renewable energy (RE) sector. A comprehensive gender mainstreaming toolkit was developed based on this research, which adopts a three-tier approach to the various gaps identified in national, regional and global efforts seeking to improve the participation of women in infrastructure development.

Gender mainstreaming the African RE sector is an important opportunity to include women in infrastructure design, enabling their meaningful participation in and contribution to the energy industry. Unfortunately, engendering (ie, gender equality, gendered development and gender inclusivity) the energy value chain is not without its challenges and requires a multi-level set of short-, medium- and long-term interventions.³

THE IMPORTANCE OF WOMEN'S PARTICIPATION FOR SUSTAINABLE INFRASTRUCTURE DEVELOPMENT

Well-designed, maintained and operated infrastructure is crucial in addressing Africa's socio-economic

development, growing population and rising urbanisation levels. According to 2017 data from the International Energy Agency, as many as 600 million people in Africa (approximately 60% of the continent's total population) have no access to energy.⁴ The African Development Bank (AfDB) and the UN Environment Programme estimate that an average of \$41 billion per year is required to finance the energy sector in Africa.⁵ The use of RE technologies such as solar photovoltaic and mini-hydro could help address this energy deficit, especially in less-developed countries that struggle to expand the main grid because of prohibitively high costs,⁶ while contributing to a more effective use of African resources that accelerates the economic inclusion of women, youth and disabled persons. RE technologies also open up the possibility to create energy value chains through backward and forward linkages, including manufacturing, assembling of RE technologies, installation, repairs and maintenance.⁷ The RE sector provides the ideal opportunity to learn from patterns of non-gender awareness seen in Africa's traditional energy sector, because it (i) enables off-grid and scaling solutions; and (ii) provides an opportunity to unlearn old practices and introduce new approaches.

The need for sustainable infrastructure development is supported by the fact that Africa's infrastructure

deficit disproportionately impacts the poor and, more specifically, women. Sustainable infrastructure can have a positive effect on poverty alleviation and may support inclusive growth through, inter alia, improving access to key facilities, creating additional jobs and improving economic activities, reducing production costs through improved transport and connectivity, and improving market connectivity.⁸

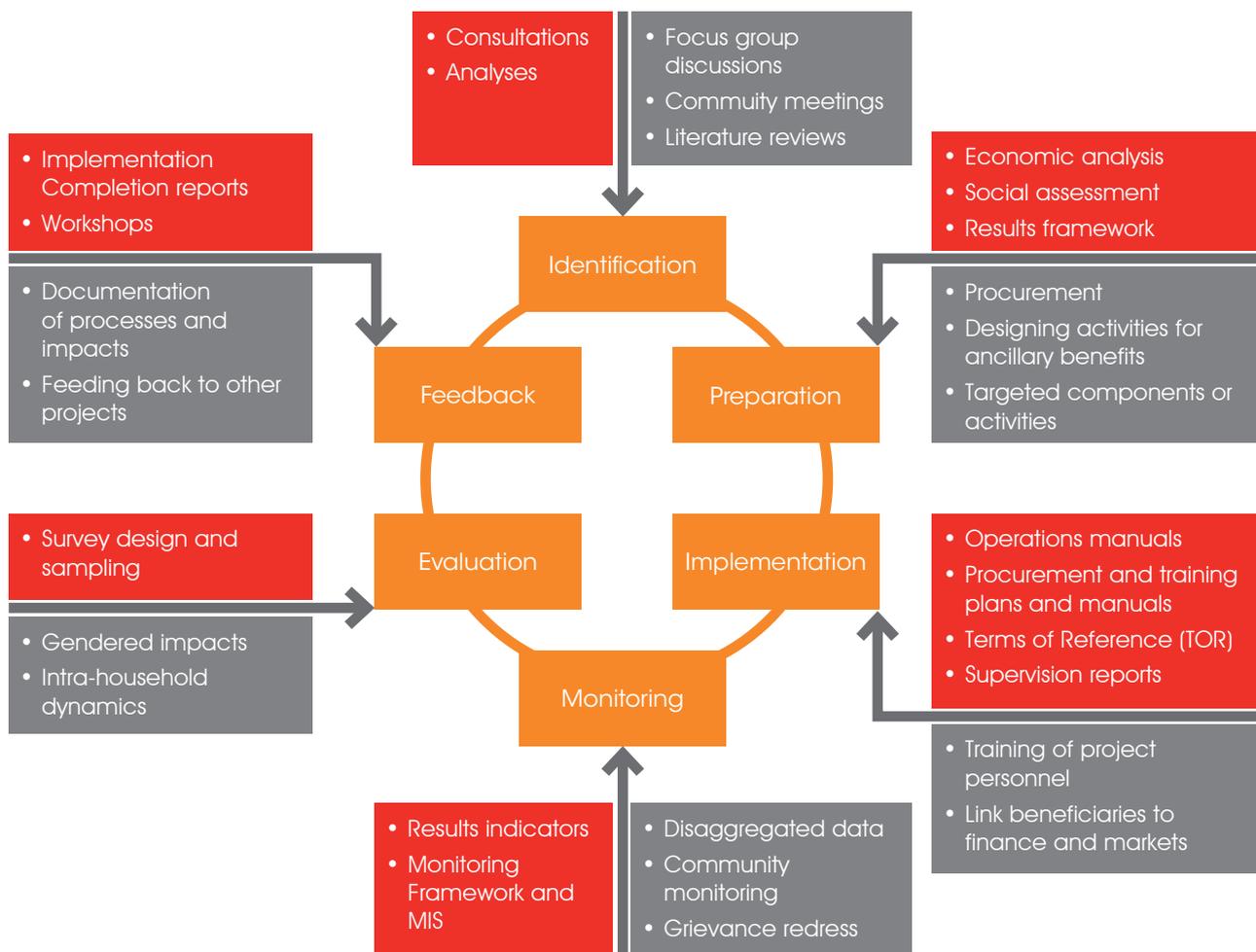
There are numerous ways in which women can participate in, benefit from and contribute to a more inclusive energy value chain:

- In sub-Saharan Africa an average of 85.7% of households rely on environmentally hazardous fuels for

lighting, cooking and heating,⁹ and use labour-intensive activities that prevent women from engaging in economic activities and keep girls out of school, further entrenching their poverty.¹⁰ Enabling women's access to clean energy as end users is essential to improve their livelihoods and correlates with a 59% increase in wages.

- In the developing world almost half of the buyers of solar lighting systems are women.¹¹ As energy consumers and beneficiaries, their ability to contribute to household energy technologies such as stove programmes and solar cookers has resulted in more effective product design.¹²

FIGURE 1 PROJECT-LEVEL ENTRY POINTS FOR GENDER MAINSTREAMING



Source: World Bank, *Steps to Stride: The Sustainable Development Networks' Companion to the World Development Report 2012*. Washington DC: The World Bank Group, 2012

- As micro-entrepreneurs and on-sellers of RE, women have used RE to increase profits and efficiency in their informal sector enterprises and have proven themselves capable of independently operating and constructing RE technologies when provided with the appropriate training and support.¹³

Attempts by policymakers and development finance institutions (DFIs) to understand the way in which infrastructure development has differential impacts and outcomes for women compared to men have given rise to gender mainstreaming in infrastructure projects. Gender mainstreaming was defined by the UN Economic and Social Council in 1997 as:¹⁴

The process of assessing the implications for women and men of any planned actions, including legislation, policies or programmes in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation (M&E) of policies and programmes in all political, economic and societal spheres, so that women and men benefit equally and inequality is not perpetuated.

Gender mainstreaming is not an end in itself; rather, it is a strategy used to achieve the goal of gender equality and the inclusion of women in sustainable development from policy development through to project design, construction, implementation and evaluation. However, women's inability to influence decision-making at a household and corporate level¹⁵ and a lack of gender-responsive budgeting (GRB), investing and financing are important factors accounting for the lack of success in mainstreaming gender across the infrastructure sector.¹⁶

CASE STUDY 1: MOVING TOWARDS INCLUSIVITY: RE IN RWANDA

Rwanda's efforts in promoting women's rights and pursuing gender equality across all spectrums are supported by the country's strong gender equality strategies, reflected in its Vision 2020 Strategy and Economic Development and Poverty Reduction Strategy II (2013–2018). The Gender Monitoring Office is tasked with monitoring gender equity directives and

compliance in line with energy sector programmes and policies.

Rwanda has taken positive steps toward engendering the country's energy policies:

- Cross-cutting legislative frameworks such as the Infrastructure Gender Mainstreaming Strategy (2017–2018), Rwanda Energy Policy (2015) and the Rural Electrification Strategy (2016) target women's involvement in the energy value chain, address their need for financial inclusion through tailored credit and micro-finance programmes, and provide for the equal participation of women and men in infrastructure activities with the aim of furthering employment and skills development.
- GRB frameworks complement gender-mainstreaming efforts and medium-term plans and budgets.

The government is working with the private sector towards 100% electrification by 2024 using on- and off-grid supply sources,¹⁷ and efforts to grow the country's energy sector are strongly supported by numerous DFIs and donor-led initiatives.¹⁸ However, as a low-income country, enabling access to sustainable energy infrastructure is a challenge: only 12% of female-headed households use on-grid supplied electricity as their main source of lighting, compared to 19% of male-headed households, while in rural areas only 5% of female- and 7% of male-headed households have access to electricity respectively.¹⁹

CASE STUDY 2: PUBLIC–PRIVATE COLLABORATIONS TOWARDS CLEANER ENERGY SOURCES IN SOUTH AFRICA

SOUTH AFRICA'S GENDER FRAMEWORKS

South Africa has a range of cross-cutting gender focused institutions, policies and frameworks driving gender equity and equal inclusion in the economy. The government's national, regional and global commitments on women's rights, women's empowerment and gender equality form the basis for furthering women's engagement in sustainable development and the energy infrastructure sector specifically.

South Africa is a signatory to the UN Convention on Elimination of All Forms of Discrimination Against Women and has played an instrumental role in drafting the SADC Protocol on Gender and Development. Domestically, the Department of Trade and Industry and the Department of Small Business Development have implemented multiple programmes targeting women's inclusion in the economy, while institutions such as the Human Rights Commission and the Commission for Gender Equality seek to promote equality and non-discrimination.²⁰ Lastly, the Employment Equity Act 1995 and the Promotion of Equality and Prevention of Unfair Discrimination Act 2000 legislate against unfair and unequal treatment in the workplace, while also prohibiting discrimination on the grounds of gender.

SOUTH AFRICA'S PROGRESS TOWARDS RE: THE REIPPP PROGRAMME

South Africa's energy sector is dominated by Eskom, the parastatal responsible for generating 90% of the country's coal-fired electricity, electricity distribution and transmission.²¹ Until the Renewable Energy Independent Power Producer Procurement (REIPPP) programme was launched in 2011, Eskom was the sole power generator in South Africa. Electricity planning is spearheaded by the Department of Energy (DoE) through its Integrated Resource Plan (IRP), which details government's electricity, implementation and technology choices.

The REIPPP is globally regarded as a highly successful initiative for procuring RE and has managed to attract investment into the RE sector worth more than ZAR²² 195 billion, with 73% (ZAR 141 billion [\$10.03 billion]) from domestic and 27% (ZAR 53 billion [\$3.97 billion]) from international investors.²³ The REIPPP has received widespread institutional and political support from government and industry stakeholders and is also commended for significantly reducing the tariff rate from the required price ceiling, enabling affordable access to RE for public consumers.

Yet despite their best efforts, Rwanda and South Africa have experienced challenges in engendering their energy sectors owing to three fundamental issues: (i) a lack of leadership to mainstream gender throughout the RE value chain; (ii) an absence of appropriate financing mechanisms; and (iii) insufficient entry-level gender-based initiatives.

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LESSONS FROM GENDER MAINSTREAMING EFFORTS IN RWANDA AND SOUTH AFRICA

LACK OF LEADERSHIP TO MAINSTREAM GENDER THROUGHOUT THE RE VALUE CHAIN

Two of the biggest challenges facing gender mainstreaming in the energy sector are that key energy policies do not provide for gender-based efforts and that government programmes do not account sufficiently for the root causes contributing to the lack of women's participation and employment in the industrial sector and their non-representation in highly-skilled positions.²⁴ Rwanda and South Africa both face challenges at a policy level.

- Despite clear policy goals of gender parity, Rwanda has experienced difficulties in engendering its energy sector. As in many other countries, there is a disconnect between policy formulation and implementation. The Rural Electrification Strategy, for example, does not have M&E frameworks to track the progress or impact of government policies, nor are its enforcement mechanisms implemented by the government/enforced on private sector players.
- The Infrastructure Gender Mainstreaming Strategy and the Rwanda Energy Group Limited's gender mainstreaming programme were both launched in 2018.²⁵ While these efforts are an important step forward for gender mainstreaming in the energy sector, they are relatively new initiatives, which makes it difficult to assess their success.
- For South Africa, the 2018 draft IRP does not include gender considerations, while the previous IRP document did not consider the impact of energy poverty on women. As a positive step forward, the DoE is currently working on a gender mainstreaming strategy for the energy sector and recent months have

seen the DoE increase its efforts to enhance women's participation in the energy sector.

Leadership in private companies in both Rwanda and South Africa is, for the majority, showing inadequate support for a transformation agenda. In Rwanda, some private sector representatives perceive GRB as a potential bottleneck in maximising their operations because GRB and gender-based investments can become a competitive constraint.²⁶ In South Africa's independent power producer (IPP) companies, women are mostly members of socio-economic development teams and environmental assessment experts. To date, there is only one female chief executive officer of an IPP company (BioTherm Energy) and only three IPP companies interviewed had professional female employment levels at 40% and above. An informal survey conducted by Green Cape on the women-to-men ratio in RE companies (across the entire energy value chain) revealed an average level of 33%. It makes engendering the energy sector more difficult if decision makers and implementers do not support a transformation agenda.

ABSENCE OF APPROPRIATE FINANCING MECHANISMS

In both Rwanda and South Africa the findings revealed that institutions financing RE projects are not specifically interested in implementing GRB mechanisms or gender mainstreaming targets. In Rwanda, there are no specific enabling programmes or services for women in place despite the government's having implemented clear GRB programmes.²⁷ In South Africa, commercial banks and DFIs are criticised for not offering financing on terms that acknowledge and cater for small and women-owned businesses. The REIPPP's auction process (because of its large-scale nature) requires upfront administrative and transaction costs that cover feasibility studies, land permits and environmental studies, which act as entry barriers for smaller, independent South African entities that cannot afford such costs.²⁸

In order to address these concerns, creative solutions to opening the market to new entrants need to be found. Industry members should create new mechanisms to open the energy market and enhance women's participation and inclusion in the energy sector. This could be done through, for example, standardising documentation and creating one-stop shops for small businesses, or through multi-institutional

partnerships and blended finance that bring together government departments with financial institutions and development agencies to create funding instruments that specifically target SMEs, women-owned businesses and new entrants to the energy sector.

Although progress is slow, there are positive changes on the horizon. In June 2018 the Development Bank of Rwanda and the Swedish International Development Cooperation Agency signed two Energy Portfolio Guarantee agreements to establish an on-lending guarantee facility of \$30 million. The fund aims to increase financial access for SMEs wanting to sell solar products.²⁹ The fund makes special provisions for women and covers up to 70% of their loan, in comparison to 50% for men.

In South Africa, the Facility for Investment in Renewable Small Energy Transactions (FIRST) is an important avenue for future considerations of how small entrants can be incorporated into the energy sector. FIRST is supported by Rand Merchant Bank and the German KfW Development Bank, and is currently funded at ZAR 1.3 billion (\$97.6 million), with potential to access additional funding to the total value of ZAR 2 billion (\$150.15 million).³⁰ KfW has specifically provided ZAR 350 million (\$26 million) that will be used to de-risk loans to smaller players. Although FIRST does not specifically target black-owned or women-owned businesses, it does provide financing to all qualifying small, new entrants whose bids fulfil the qualifying criteria. FIRST offers commercial bank rates for loans and fills a market gap by providing (i) loans between ZAR 50 million (\$3.75 million) and ZAR 300 million (\$22.5 million) to small-scale energy players for both utility-style projects and corporate/industrial projects; (ii) a technical assistance facility to assist SMEs with funding development costs; and (iii) simplified financing and administrative processes that include pre-approved standard documentation as the basis for final agreements.³¹

IMPLEMENTING ENTRY LEVEL GENDER-BASED INITIATIVES: TACKLING EDUCATION AND ENTERPRISE DEVELOPMENT

The challenges women face in qualifying as technical experts begin at secondary and tertiary education levels, where young girls do not always have the opportunity to pursue science, technology, engineering and maths

(STEM) subjects. Accessing STEM opportunities is a pervasive problem in both Rwanda and South Africa.

In South Africa, many IPP companies interviewed recognised the need for improved educational opportunities for both sexes in the communities in which they operate. IPPs spend up to 40% of their socio-economic development commitments on education and skills development, which can include providing tertiary bursaries, paying teachers' salaries and supplying better school equipment.³² Programmes such as the South African Renewable Energy Technology Centre (established to develop local skills for RE projects) and initiatives such as the National Cleaner Energy Production Centre (which supports women's engagement in the clean energy sector through life-long training, feasibility assessments and financial paperwork applications to start mini-solar plants)³³ are excellent examples of the kinds of effort required to address the skills shortage problem in the energy sector and create opportunities for women-owned companies to engage in the RE sector as technical and professional experts.

Focusing on educational opportunities for the youth is an important avenue to ensuring the viability of the RE sectors in both countries through building capacity, creating local technical experts and enhancing operational skills which, in the long term, can contribute to creating an enabling environment for women's participation and ensure sustainable development of the RE sector across Africa.³⁴

Another long-term initiative can be the increased participation of women-owned businesses in energy infrastructure projects through enterprise development. Solar energy of 5MW or less is easier to produce and can be undertaken by women-owned SMEs, to be sold on to municipalities as a form of income generation. This could easily complement the Small Projects IPP Procurement Programme once it commences.³⁵ Such initiatives should incorporate greater public-private collaboration and be scaled up to reach a larger number of women interested in participating as technical experts and professionals in the energy sector.

CONCLUSION

In order to address the challenges facing the industry, it is important to identify short-, medium- and long-term solutions.

- Short-term interventions should focus on existing policies and programmes and ways in which they could be improved:
- Initiatives designed for communal RE production in projects of 5MW or less that encourage technical capacity building in women-owned businesses should be encouraged and implemented. This will ensure women have the necessary experience and expertise in order to take part in larger and commercial projects in the future.
- There should be greater collaboration between private and public financiers in order to find creative solutions for financing new, small and women-owned businesses in the energy sector: for example, implementing standard documentation and creating one-stop shops for small and medium-sized enterprises (SMEs), or generating multi-institutional partnerships to create blended funding instruments that specifically target SMEs and women-owned businesses.
- Existing energy policy frameworks should contain gender-based considerations to build the political mandate required to bring gender mainstreaming issues to the forefront. Policies should include target-driven objectives for industry players, in order to engender the energy sector, and M&E mechanisms, to evaluate successes and challenges.
- Policies should also identify the necessary skills required to further promote gender mainstreaming in the energy sector – for example, requiring a development practitioner/gender expert to form part of project teams to make inputs into project design and construction, and to help the government prepare gender equality strategies.

Medium-term objectives should improve the positive gains already achieved, while also identifying gaps in existing programmes:

- A broad educational trust fund should be established that allows for the pooling of financing and tools to fund bursaries in STEM degrees.
- Enterprise development could encourage the use of technical services and expertise from women-owned businesses located in urban areas, as the rural areas

within which IPP RE plants are located cannot always meet the technical specifications and needs of RE plants.

Long-term goals require a mixture of continued policy engagement targeting education, job creation and enterprise development:

- Educational trusts and facilities should continue to be provided to facilitate take-up of STEM-based education at a primary and high-school level, combined with continued opportunities in the energy sector through internships and new jobs for graduates.
- Industry bodies should be created and/or existing industry bodies improved to enhance collaboration

between industry representatives and private companies in drawing up and implementing engendering policies across the RE sector. This includes identifying ways in which women's inclusion in the energy sector can be furthered – for example, through technical training/capacity building, linking women-led SMEs with bigger companies, etc.

- Government and the private sector should design long-term industry guidelines catering for minimum threshold requirements for women leadership and technical experts at parastatal utilities and private companies.

POLICY RECOMMENDATIONS

1 Gender equality strategies must reflect appropriate political commitments that are implementable in the private sector. Implementation is key for policies to have meaningful impact, and comprehensive monitoring and evaluation (M&E) and impact assessment of infrastructure projects from a gender mainstreaming perspective is essential to ensure that the energy value chain enables the full participation of women.

2 The necessary buy-in from RE companies must be secured to ensure that gender mainstreaming is implemented at every stage of the project cycle. RE companies should have in-house M&E experts or use the services of gender experts from M&E companies in order to monitor projects, from design through to construction, operation and impact. Follow-ups should be done for stipulated periods of time (ie, every one or two years), for which there should be appropriate gender-responsive budgeting.

3 Efforts to ensure financial access should focus on cross-cutting collaborations between the private sector, government entities and development finance institutions (DFIs). Creating financing tools/mechanisms that

enable smaller, new and women-owned businesses to participate in the RE industry requires appropriate risk allocations among government and DFIs. Commercial banks should implement a streamlined, comprehensive financing tool that is accessible to small and medium-sized enterprises (SMEs) and women-owned businesses. Funding mechanisms should be built in collaboration with gender experts, DFIs and appropriate funders to address women and SMEs' specific financial challenges to industry participation.

4 Enabling women's participation in the RE industry in technical and management positions requires a comprehensive approach to educational opportunities in science, technology, engineering and maths. A proportion of development financing should be allocated to the creation of broad-based internship and education programmes in order to facilitate the inclusion of women in the energy sector.

5 One of the avenues to support greater gender participation in the energy value chain is through cultivating enterprise development for women-owned businesses geared specifically towards providing the necessary input services and technical expertise into the energy value chain itself.

ENDNOTES

- 1 Asmita Parshotam is an International Trade and Development Expert based at SAIIA, and an admitted attorney.
- 2 Parshotam A & H van der Westhuizen, *Women and the Energy Value Chain: Opportunities for a More Inclusive Renewable Energy Sector in Africa*, GEG Africa Discussion Paper (forthcoming).
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- 17 Republic of Rwanda, 'National Strategy For Transformation, NST 1', 26 September 2017, http://www.parliament.gov.rw/fileadmin/templates/document/Important_Doc/Gahunda_ya_Guverinoma_y_Imyaka_7.pdf, accessed 15 June 2018. The Strategy for National Transformation (2017–2024) targets 100% electricity access by 2024, of which 48% is planned to be off-grid versus 52% on-grid.
- 18 Examples include the World Bank's Renewable Energy Fund 2017–2024 project (targeting 445 000 off-grid connections for sustainable development and productivity growth in urban and rural areas) and Power Africa's Gigawatt Global in Rwanda.
- 19 *Ibid.*
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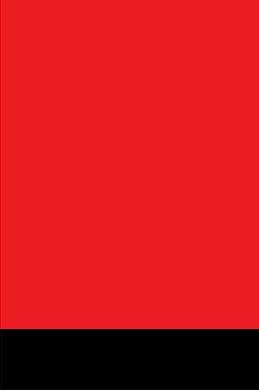
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35 The SPIPP is designed to act as an entry point for SMMEs and BBBEE companies to enter the RE industry engaging in projects of a maximum of 5MW.

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