IRENA
International Renewable Energy Agency

A JUST ENERGY TRANSITION FOR COMMUNITIES

LARGE-SCALE WIND AND SOLAR PROJECTS IN SUB-SAHARAN AFRICA

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The International Renewable Energy Agency (IRENA) is an intergovernmental organisation that supports countries in their transition to a sustainable energy future, and serves as the principal platform for international co-operation, a centre of excellence, and a repository of policy, technology, resource and financial knowledge on renewable energy. IRENA promotes the widespread adoption and sustainable use of all forms of renewable energy, including bioenergy, geothermal, hydropower, ocean, solar and wind energy in the pursuit of sustainable development, energy access, energy security and low-carbon economic growth and prosperity. **www.irena.org**

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ABBREVIATIONS

AfDB	African Development Bank
AfSeM	African Single Electricity Market
ASYV	Agahozo Shalom Youth Village
CSP	concentrated solar power
CSR	corporate social responsibility
DEI	diversity equity and inclusion
DFI	development finance institution
ECOWAS	Economic Community of West African States
ESIA	environmental and social impact assessment
FiT	feed-in tariff
GDP	gross domestic product
GHG	greenhouse gas
Gt	gigatonnes
GW	gigawatt
IFC	International Finance Corporation
ILO	International Labour Organization
IPP	independent power producer
IRENA	International Renewable Energy Agency
INSPIRE	Initiative for Social Performance in Renewable Energy
KES	Kenyan shilling
KGRTC	Kafue Gorge Regional Training Centre
M&E	monitoring and evaluation
MW	megawatt
n.d.	not dated
NGO	non-governmental organisation
O&M	operations and maintenance
PV	photovoltaic
PPA	power purchase agreement
REIPPPP	Renewable Energy Independent Power Producer Procurement Programme
REMP	Rural Energy Master Plan
SDG	Sustainable Development Goal
SEforALL	Sustainability Energy for All
SME	small and medium enterprise
tCO_2eq	tonnes of carbon dioxide equivalent
USD	US dollar
ZAR	South African rand

USD figures provided, unless otherwise stated, are 2020 USD values, as referenced in source reports.

1 INTRODUCTION

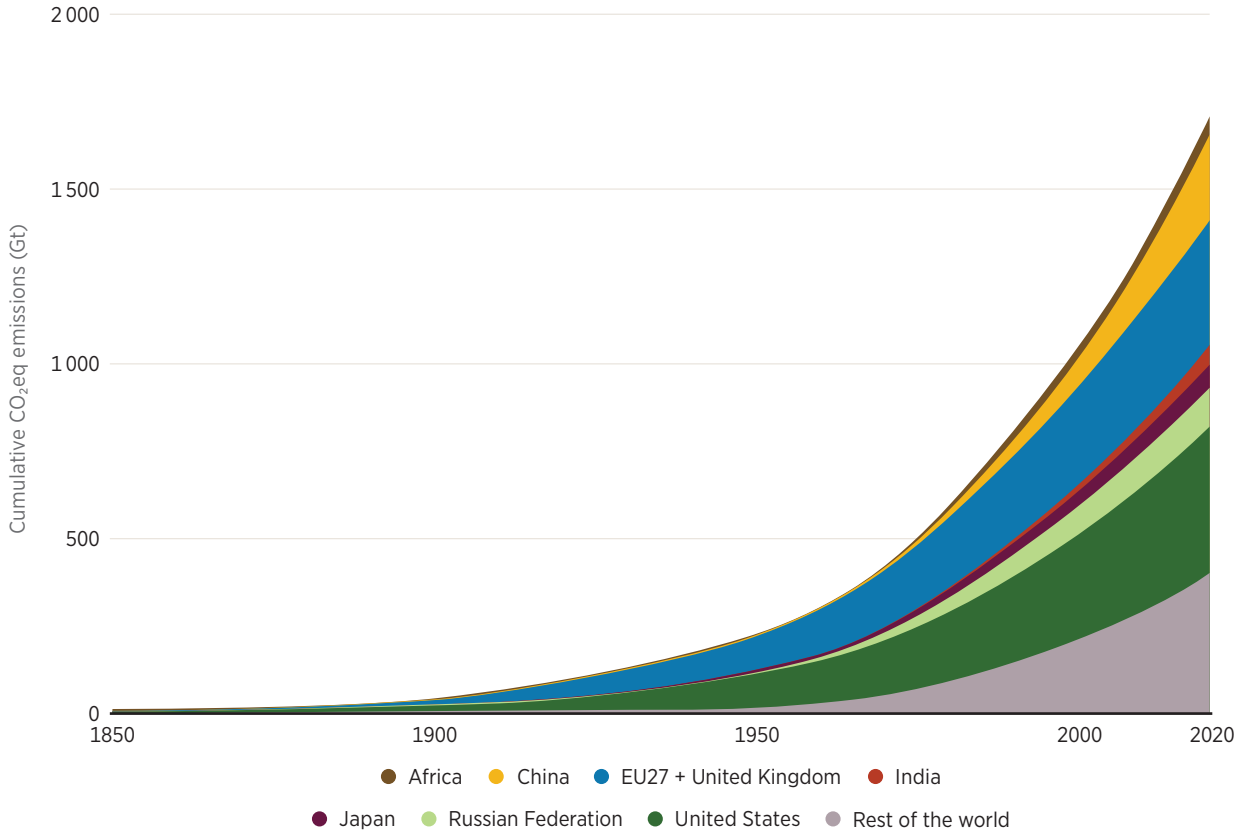
1.1 Context

The people of Sub-Saharan Africa find themselves at a crossroads characterised by significant challenges and unique opportunities: an escalating climate crisis, a global push for sustainable development, the rapid evolution of energy systems, geopolitical instability, and continued social injustice and vulnerability. Accessible, reliable and affordable energy plays an essential role in human and economic development, especially in improving livelihoods and access to opportunities. As IRENA and the African Development Bank have observed, renewables are crucial to "overcoming energy poverty, providing energy services without damaging human health or ecosystems, and enabling sustainable socio-economic development" (IRENA and AfDB, 2022). Furthermore, when considering equitable development, "a transition to a renewables-based energy system in Africa promises substantial gains in gross domestic product (GDP), employment and human welfare in each of the continent's constitutive regions" (IRENA and AfDB, 2022).

The challenge of translating renewables' potential into tangible gains for people is immense. In 2022, around 83.3% of the global population without access to electricity (571 million people) lived in Sub-Saharan Africa (IEA *et al.*, 2024). Low electrification rates hamper the climate resilience of communities by limiting their adaptive capacities and increasing their reliance on environmentally harmful energy sources like fossil-based fuels. Reaching universal electricity access by 2030, as laid out in the Sustainable Development Goals (SDGs), requires significant effort. As the global shift towards low-carbon energy progresses, it is vital that it does not hinder the development goals of Africa, which contributes just 2.7% of global greehnouse gas (GHG) emissions (Figure 1). It is also important to ensure that the continent can harness renewable energy to inclusively address its energy needs in a people-centred, just energy transition (AfDB, 2022). To achieve SDG 7 (ensuring universal access to clean and affordable energy), Africa must connect around 75 million people to electricity each year to 2030. At the same time, about 124 million people a year must transition from using unsustainable and inefficient cooking fuels and technologies to efficient options (IEA *et al.*, 2024).[1]

[1] *A lack of access to clean cooking, which affects around 70% of Africa's population, contributes to 3.7 million premature deaths annually and disproportionately affects women and children (IEA and AfDB, 2023a).*

FIGURE 1 Cumulative carbon dioxide emissions by region, 1850-2020



Based on: Global Carbon Budget, with major processing by Our World in Data (Andrew and Peters, 2024).

Notes: The United States had the highest share (25%) of cumulative global emissions between 1850 and 2020. It was followed by the EU27 + the United Kingdom, at 22.5%, and China, at 14%. Africa's cumulative share is just 2.7%. Further, the average American had a carbon footprint of 14 tonnes of carbon dioxide equivalent (tCO_2eq) in 2020, while the average African had a footprint of 0.95 tCO_2eq. The required global per capita average to achieve the 1.5°C target is 2.0 tCO_2eq (AfDB, 2022). EU27 = 27 Member States of the European Union; Gt = gigatonnes.

Many donor countries and international development finance institutions (DFIs) have adopted a policy approach centred on reforming the electricity sector; creating stable, transparent and predictable environments to attract investment; and establishing norms, standards and frameworks for energy efficiency (AU, n.d.). Addressing these objectives will likely bolster the confidence with which private investors and international DFIs consider investing in large-scale renewable energy projects in Sub-Saharan Africa.

However, it has been acknowledged for several years that the creation of enabling environments could trigger a range of risks for the host communities of large-scale renewable energy projects (IRENA, 2017). Many affected communities are geographically and socio-economically marginalised; they exist on the peripheries of development, excluded from reliable energy access and, frequently, from broader development planning and state service delivery (Nzo, 2021; Walker, 2023). Many of the most promising locations for large-scale solar and wind projects in Sub-Saharan Africa are in rural areas. Meanwhile, many rural residents' livelihoods rely on the use of land and other natural resources already vulnerable to the impacts of climate change (World Bank, 2022).

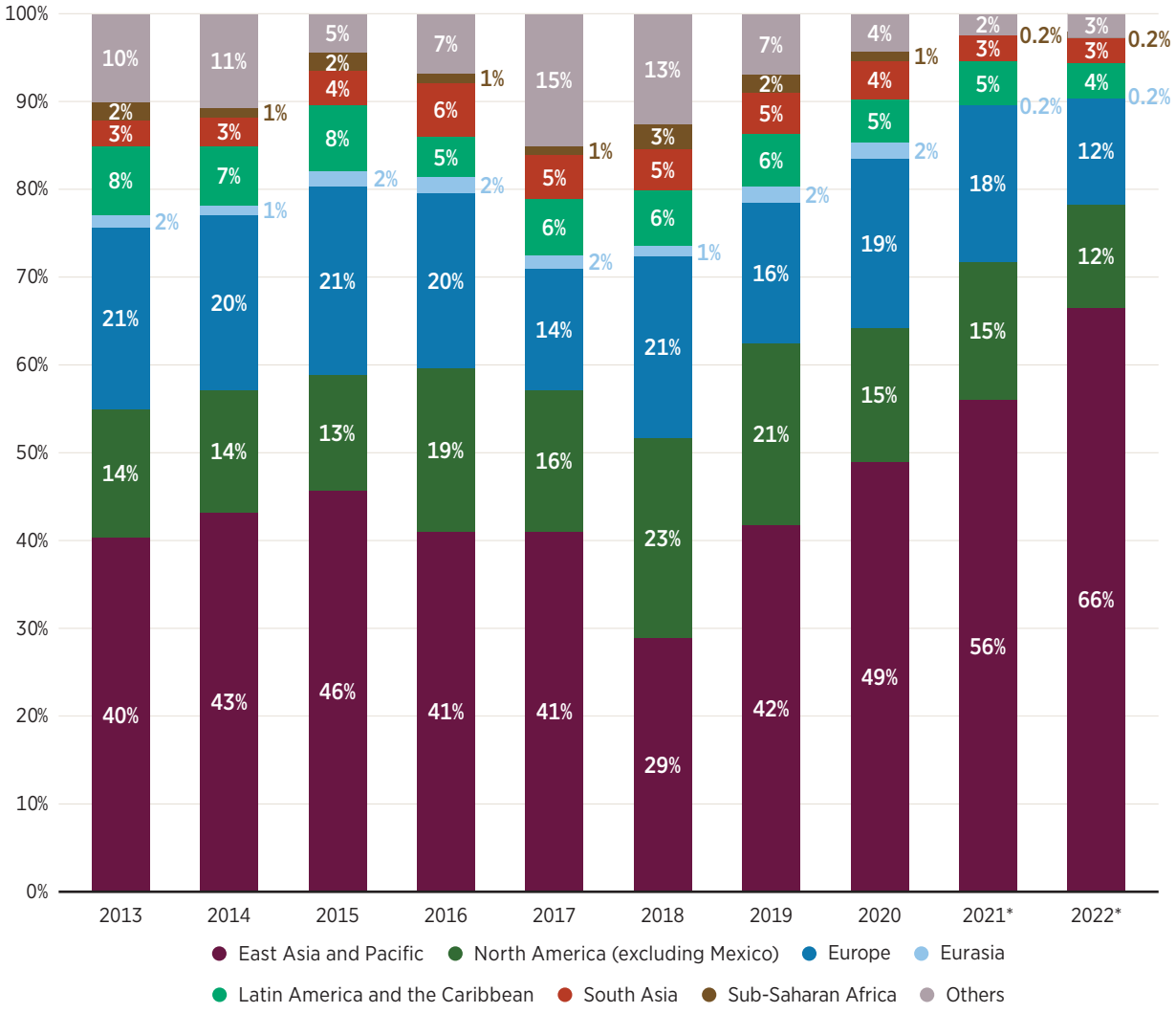
An accelerated roll-out of climate and energy solutions with land-intensive requirements would increase competition for land (Sachs *et al.*, 2023), exacerbating the vulnerabilities of communities living on or around prime renewable energy sites.[2] Careful analysis of land use and project siting, focusing on the needs of local populations and the environment, could avoid further marginalisation due to the uneven distribution of benefits and costs that have historically been associated with large energy projects (Dolton-Zborowski and Szoke-Burke, 2022). In addition, an integrated approach to climate change and land use would recognise the overlapping and disproportionate effects on women, indigenous peoples, and rural and marginalised communities. Thus, the participation, experiences and voices of groups affected by renewable energy development would offer critical knowledge and insights in Sub-Saharan regions with low access to energy and high reliance on land (IRENA, 2022).

The overlapping global climate and energy crises are driving accelerated investment in cleaner energy sources worldwide. Between 2010 and 2020, 75% of renewable energy investment in Africa went to just four countries whose access to electricity was already significantly higher than others on the continent (Egypt, Kenya, Morocco and South Africa) (IRENA and AfDB, 2022). These countries have more established policy and institutional environments and regulations, and provide greater access to finance and markets (IRENA and CPI, 2023). They are thus considered to be less risky for investors. Meanwhile, the region as a whole attracted only 1.5% of global renewable energy investment, or some USD 41 billion, in the same decade (IRENA and CPI, 2023). This is even though the continent's renewable technical potential is among the greatest of any region. For instance, IRENA and the AfDB estimated its technical potential for solar and wind power at 7 900 gigawatts (GW) and 461 GW, respectively, based on a 1% land utilisation factor (IRENA and AfDB, 2022). By comparison, in 2023, installed solar capacity in Africa was about 13.5 GW, and installed wind capacity about 8.7 GW – both below 1% of global capacity (IRENA, 2024a).

Figure 2 shows a declining trend in renewables investments in Sub-Saharan Africa, from USD 5.3 billion in 2019 to less than USD 3.6 billion in 2022. The gap in global renewable energy investment per capita starkly underlines this situation. In 2021, investment per capita in Europe was 41 times higher than in Sub-Saharan Africa, while it was 57 times higher in North America (IRENA and CPI, 2023). The tendency of investments to disproportionately favour established technologies and specific markets underscores a core attribute of mainstream private capital: a preference for low-risk opportunities and a primary focus on financial returns, often at the expense of social, environmental and climate-related benefits (IRENA and CPI, 2023). In so doing, it furthers the energy marginalisation of African countries with less established and less developed regulatory environments.

[2] *It is interesting to note that the land area required to provide a given amount of electricity is higher for solar photovoltaic (PV) than hydropower and wind power (IEA and IFC, 2023).*

FIGURE 2 Investment in renewable energy by region of destination, 2013-2022



Source: (IRENA and CPI, 2023).

Where renewable projects have been proposed or developed in Sub-Saharan Africa, a shift in focus towards transmission and distribution systems is evident, to balance energy supply and demand within and across neighbouring countries (African Energy, 2020). Constraints result predominantly from unreliable and weak electricity grids, high system losses, low access and consumption, and expensive power (African Energy, 2020). There has also been a shift from state-led enterprises to private sector investments. The low credit ratings of many Sub-Saharan African utilities may render them likely to default on debt obligations and less likely to receive new debt from investors (ESMAP, n.d.). Between 2013 and 2020, the cumulative domestic and international investment in renewables was divided 50:50 (IRENA and CPI, 2023). As anticipated by the Africa Energy Atlas, covering 2020/2021, by 2022, over half of new renewables' capacity would be privately funded (African Energy, 2020). Reinforcing this perspective, IRENA and the AfDB estimate that by 2030, private sector financing of renewable power could account for just under 75%, DFI investment could account for about 15% and public funding for about 10% (IEA and AfDB, 2023b).

1.2 Initiatives and projects to drive renewable energy growth

Multilateral development banks, DFIs and Sub-Saharan African policy makers have been making efforts specifically to improve Africa's policy environment in order to reverse the "flagging investment" trend discussed above (IRENA and AfDB, 2022), making investment in renewable energy projects easier to finance than most other types. Renewables-based projects have increased since 2020 as a result, with solar photovoltaic (PV) in the lead (IRENA, 2024a). Importantly, in 2021, the African Union launched the new African Single Electricity Market (AfSEM), touted as the largest single electricity market and serving a population of 1.3 billion. By linking the continent's various energy strategies and action plans, the AfSEM intends to cultivate a consistent regulatory framework and integrate national generation, transmission and distribution master plans (IRENA and AfDB, 2022).

Several Sub-Saharan utility-scale solar and wind projects are already under development or in operation. On balance, these projects are clustered in southern Africa, and the most significant number of operational projects is in a single country – South Africa since the inception of South Africa's Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) in 2011, 13 422 megawatts (MW) of renewable energy have been procured from independent power producers (IPPs) in six bid rounds[3] (IPPO, 2024). As of March 2024, 95 IPP projects were operational, providing 7 335 MW of electricity capacity for integration into South Africa's national power grid (IPPO, 2024). There are far fewer utility-scale wind and solar PV facilities elsewhere in the region. Existing energy sources like oil, gas and hydropower pose health and environmental risks, while utility-scale wind and solar PV development is hindered because electricity utilities do not have investment-grade credit ratings amid other investment disincentives, mentioned above (IRENA and AfDB, 2022). Also, feed-in tariff (FiT) mechanisms have failed to generate substantial investments. Furthermore, unsolicited and negotiated power purchase agreements (PPAs), which lacked transparency and were often initiated under emergency supply contexts, have resulted in high-cost systems with overcapacity.[4] The increased structured procurement processes, particularly auctions and, to a lesser and declining degree, FiTs, may have contributed to a more transparent and predictable investment environment – as their implementation coincides with increased renewables investment in Sub-Saharan Africa (IRENA and AfDB, 2022).

[3] BWR 1-6 of the REIPPPP itself, not counting battery storage procurement (IPPO, 2024).

[4] Ghana has placed a moratorium on PPAs until more sustainable contracting mechanisms are developed (IRENA and AfDB, 2022).

To encourage, facilitate and manage the anticipated surge in renewable energy development in Sub-Saharan Africa, international agencies, donors and other partners or national governments have provided their support to relevant initiatives and projects. The International Finance Corporation's (IFC's) Scaling Solar programme has been a driver of some large-scale projects in the region; tenders for and projects in Zambia, Senegal, Madagascar and Ethiopia have been announced. The AfDB is investing USD 20 billion in the Desert to Power Programme, which will provide 10 000 MW of solar power to 250 million people across 11 countries in the Sahel and East Africa region, which will in turn become the world's largest solar zone (IEA and AfDB, 2023b). The AfDB has also funded the Lake Turkana wind project in Kenya, the largest wind farm in Sub-Saharan Africa with a capacity of 310 MW (IEA and AfDB, 2023b). Germany's development bank, KfW, has provided support for setting up auctions and solar PV grid integration through its "GET FiT" programme in countries like Uganda and Zambia. The West Africa Clean Energy Corridor was initiated in 2017 as a regional initiative to support the development and integration of utility-scale power from renewable energy resources into West Africa's power systems. The African Union launched the AfSEM on 3 June 2021. The implementation of the AfSEM will be supported by the completion of the Continental Power System Masterplan by the African Union Development Agency, NEPAD. Following the launch of the AfSEM, in September 2023, Kenya, Ethiopia, Namibia, Rwanda, Sierra Leone and Zimbabwe, with support from Denmark, Germany, the United Arab Emirates and IRENA, launched the Accelerated Partnership for Renewables in Africa (APRA) to accelerate the energy transition in these countries.

These and other national and regional initiatives for renewable energy deployment span activities utilising various project development approaches. The activities include government auctions inviting the private sector into project development, projects developed by the private sector for state or other off-takers, and government-led and -owned projects. Since 2010, 25 countries have announced auctions,[5] totalling 22 GW of capacity, of which over 13 GW have been awarded, predominantly for solar projects (IRENA and AfDB, 2022).[6] Most of the procured capacity has been in southern Africa, weighted by South Africa's extensive power system and economy and its REIPPPP. IRENA has highlighted that the long-term success of auctions increases with the implementation of a process that aligns with policy objectives and creates a balance among objectives that sometimes diverge (IRENA, 2018). In this context, more than technical and economic considerations matter. Crucially, auction design can support environmental and socio-economic development goals (IRENA and AfDB, 2022).

[5] *Among these countries are Ethiopia, Ghana, Malawi, Mauritius, Namibia, South Africa, Uganda and Zambia.*

[6] *It must be highlighted, though, that the volume of cancelled or delayed auction capacity in Africa is almost 40% (IRENA and AfDB, 2022).*

1.3 Social justice and community engagement in renewable energy projects

Mary Robinson, former President of Ireland and Chair of The Elders, cautions in her introduction to *Renewable Energy and Human Rights Benchmark: Key Findings for the Wind and Solar Sectors*, that although the climate crisis cannot be averted without a rapid expansion of the renewable energy industry, a "net-zero carbon future can and must go hand in hand with sustainable development, poverty reduction and reducing inequality" (BHRRC, 2021).

Meeting the requirements of SDG 7 to ensure "affordable, reliable, sustainable and modern energy for all" and the African Union's Aspiration Goals 1 and 7 are challenges rendered more urgent and simultaneously more difficult by the impacts of climate change, to which Sub-Saharan Africa is particularly vulnerable despite being the least responsible (RES4Africa, 2023). Large-scale wind and solar projects hold great promise for poorer countries and communities historically lacking access to affordable and reliable power and the associated development opportunities (IFC, 2019). However, it is also necessary to acknowledge that the implementation of renewable energy projects can create fresh social injustices, much as they may be intended to address the fundamental and urgent crisis of climate change (Baker, 2023). Emerging social injustices may touch on a variety of critical areas, including community dynamics, economic inequalities and political governance. In communities, forced displacements and expropriations, ownership, job opportunities, and revenues are often distributed disproportionately; while certain groups enjoy favour, others are marginalised. A lack of genuine consultation and participation can hamper effective community engagement and buy-in. Economic inequalities may be exacerbated as nations incur more debt to build infrastructure, leading to further financial distress. When political and governance injustices persist, they can undermine equitable development. Therefore, the concept of energy justice in renewable energy projects goes beyond simply mitigating the adverse impacts of projects, as required by national legislation and international standards, and recognises the rights of affected communities to benefit from such projects.

How these projects are designed and implemented will shape the legacy of renewable energy. They could evoke the negative experiences often associated with the extractive mining industry if not executed well. Conversely, they could earn lasting acceptance from local communities, securing a social licence to operate. The key here is meaningful community engagement throughout project design and development. By including local knowledge and considering local circumstances, these projects could secure a positive legacy and deliver numerous benefits for communities (AEIC, n.d.; Norton Rose Fullbright, 2020). There is a growing focus on the social justice and social performance aspects of renewables-based projects along the entire supply chain, especially from the perspectives of human rights, gender, indigenous peoples and vulnerability (BHRRC, 2023; Timperley, 2022). In addition, according to IRENA and the International Labour Organization's *Renewable Energy and Jobs* publication (IRENA and ILO, 2022), "governments, civil society groups and academics are increasingly scrutinising industry practices in the commodity sector with regard to environmental and labour standards, consequences for local communities, and impacts on jobs and job quality".

In the context of an equitable and just energy transition, social justice goes far beyond the basic provision of energy – it calls for an equitable distribution of resources and opportunities, ensuring that the most vulnerable sections of society are not left behind. At the heart of this lies the emerging practice of "social performance", which refers to "the outcome of a company's engagement, activities and commitments that can, directly and indirectly, impact stakeholders or affect the quality of its relationships with them" (ICMM, 2022). This professional approach to corporate-community relationships promotes an inclusive approach to project implementation by ensuring that the development needs of local communities are thoroughly addressed (Mbungu and Helgenberger, 2021). As the renewable energy sector endeavours to leave a lasting positive legacy for community stakeholders, it becomes imperative to view every initiative, project or intervention through this lens of social performance (IASS, 2022).

Prevailing evidence indicates that, amid its dynamic growth, there is room for the renewable energy sector to advance in terms of social performance (Funder *et al.*, 2021; TENTRANS, 2021; Wlokas *et al.*, 2017). Organisations such as the Business & Human Rights Resource Centre and the Initiative for Social Performance in Renewable Energy (INSPIRE), along with numerous think tanks and intermediary bodies active in the field, are advocating for the development of more robust capacity within the sector (INSPIRE, 2021; JustRE Alliance, 2024).

1.4 Objectives and scope

The prospect of harnessing the community benefits of renewable energy projects is receiving more attention across multiple countries. However, as the amplified energy crisis pressures governments for urgent solutions, some of the requirements for meaningful community participation, often a time-consuming process, are at risk of going unmet. There is a crucial need for a more focused study of this topic, especially in Sub-Saharan African countries, where the social impacts and justice implications of large-scale renewable energy infrastructure projects remain under-researched. Large-scale wind and solar projects appear particularly viable since the energy needs in the region are very high, the electrification rate is low, the region is rich in renewable resources and the potential for economic and social windfall is considerable. These projects could be sources of employment, local economic diversification and increased access to energy – key development imperatives. Their realisation would also be crucial in the global transition to a renewable-energy-based energy system to mitigate climate change. Yet, little comprehensive work has been done to research the social impacts and justice implications of these projects in Sub-Saharan Africa (Bishoge, Kombe and Mvile, 2020; Farghali *et al.*, 2023; IRENA, 2024b; KfW *et al.*, 2021; Sokona *et al.*, 2023).

This report contributes to this critical yet under-studied area. Adopting a qualitative approach, it explores the spectrum of community benefits from implementing large-scale on-shore solar and wind energy projects, and identifies good practices. The study aims to contribute to a growing knowledge base informing policy design for a just energy transition. The research highlights practices and principles that can lead to greater justice through shared benefits.

Data from various projects across five Sub-Saharan African countries (South Africa, Kenya, Namibia, Senegal and Zambia) were initially collected through site visits and semi-structured interviews with stakeholders in 2017. More information was compiled in 2023 after an extensive review of relevant literature, and nine further expert and industry interviews,[7,8] with additional project examples from Cabo Verde, Rwanda and the Republic of Tanzania.

The key objectives of this report are to:

- Explore current approaches to community participation in, benefits from, and ownership of large-scale wind and solar projects aiming for social justice and sustainability.
- Examine the potential for integrating improved practices into policy making, considering the specific contexts of various Sub-Saharan African countries.
- Deepen knowledge and understanding of stakeholder experiences in large-scale renewable energy projects. Explore and highlight reasons for failures to create enduring local benefits where possible.
- Inform policy development considerations based on the research outcomes.

This report is structured to explore community benefits from large-scale renewable energy in Sub-Saharan Africa. **Section 2** offers practical examples of a broad spectrum of benefit-sharing activities from projects across the region and highlights examples of applicable good practices. **Section 3** shares considerations relevant to implementing sustainable and transformative community benefits. **Section 4** consolidates findings from the literature and practice examples to present actionable recommendations, ensuring the report serves as a concise guide for stakeholders in the renewable energy sector.

[7] *All interviews were followed up with email correspondence for deeper discussions. The authors kept minutes of the interviews and records of exchanges. Respondents' names, companies and projects were anonymised for this study, to allow the report to focus on relevant insights and practices.*

[8] *Unless otherwise noted and cited, the information and analysis in this report draw on project site visits in the following countries: South Africa (with by far the most projects), Kenya, Namibia, Senegal and Zambia.*

2 LARGE-SCALE WIND AND SOLAR IN SUB-SAHARAN AFRICA

BENEFITS FOR LOCAL COMMUNITIES

The practical response to the need for social justice and transformation is for renewable energy projects to ensure they are designed and implemented to maximise regional, national and local development outcomes. Local community engagement should be promoted in all project-related decisions, benefit-sharing mechanisms, local capacity developed through training, and environmental and social safeguards implemented and integrated with wider economic development plans. Without this effort, projects risk adversely impacting the industry's reputation and local stakeholders, and communities may reject them. Projects need to benefit communities in order to secure and maintain a social licence[9] to operate; projects are likely to obtain that licence if they sustain approval from the local community and other stakeholders (SociaLicense, n.d.).

While renewable energy projects should have the ability to secure and maintain a social licence to operate, for them to generate a flow of shared community benefits, they typically need to comply with legal/regulatory and financier requirements, have the ability to access land and resources, have the ability to secure the needed approvals, comply with industry standards/benchmarks and maintain reputational benefits, which can help developers gain a competitive advantage (IFC, 2019).

A few examples illustrate the costs of renewables projects not being able to secure or maintain a social licence to operate. Kenya's Kinangop-based 60 MW, USD 144 million wind project reached financial close in 2013 but failed to advance to the construction phase because conflicts with the local community created material delays and depleted project funding (Reuters, 2016). More recent examples of delayed and stopped renewable energy projects in developing and emerging countries reinforce this finding (Timperley, 2022).

Establishing a social licence to operate is mission-critical not only for a given project but also for the industry at large, and, by extension, for the success of the energy transition globally. Renewable energy is gaining prominence at a time when society's expectations of natural-resource-based industries are increasingly articulate. Free, prior and informed consent, and appropriate compensation in case of economic displacement or resettlement are key markers of successful projects.

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[9] *To obtain a so-called social licence, a project or company secures long-term support and co-operation through respect for local values and sustainable practices. In other words, it gains the ongoing acceptance and approval of local communities and stakeholders through trust and transparency, active community engagement in project-related decision making and equitable distribution of project benefits.*

The social performance of companies is guided by existing frameworks related to practices, and by public policies and regulations (*e.g.* IFC's Performance Standards, REIPPPP requirements in South Africa). International bodies like the Social Practice Forum[10] are developing new frameworks and approaches. One of the current work streams of the Social Practice Forum is rethinking social impact assessments. As per the current practice, such assessments to ascertain project-related risks and impacts are conducted once the project design is confirmed. From a more transformation-oriented social performance perspective, assessments would instead lead the design process, guided by data on local socio-economic conditions, which will aid in tailoring projects to suit and support a specific social context. Legislation could enable the comprehensive appraisal of social and environment impacts through mandatory environmental impact assessments (EIAs) and environmental and social impact assessments (ESIAs) of projects. The purpose of these assessments is to identify and mitigate probable detrimental effects, promote sustainable development and build community trust. As the outcomes from the Social Practice Forum gather momentum, they could influence industry practices and policies that emphasise the upfront integration of environmental and social factors.

However, current practices that surfaced in the interviews conducted for this report contrast with the points outlined above. There is an assumption that limited impact assessments, with a superficial understanding of the social environment, are adequate for renewable energy projects – based on the presumption that social impacts are known, contained or manageable. Assessments commonly only involve stakeholders passively and peripherally rather than considering the value of community participation or engagement at the project design stage. As outlined previously, this approach constitutes a significant risk for the renewable energy industry's reputation and its prospects as it perpetrates existing unjust power dynamics.

Nonetheless, some wind and solar projects in Sub-Saharan Africa are already creating promising and transformative approaches to ensure the inclusion and participation of communities. As presented in the following "benefit insights", the projects display noteworthy examples of how to partner with communities in ownership arrangements (Kenya and South Africa), and with non-typical landowners, including not-for-profit organisations and local authorities (Namibia and Rwanda); the incorporation of local and regional skill development strategies into a project (Zambia); internship and employment opportunities creating access to the industry among local communities (Kenya, Namibia, Senegal, South Africa, the United Republic of Tanzania, and Uganda); community-inclusive procurement of services (South Africa and the United Republic of Tanzania); and community access to modern, clean and safe energy services (Senegal, South Africa, the United Republic of Tanzania, and Zambia).

This chapter, which presents insights from specific projects (see Figure 3 for locations), discusses key benefits in terms of project siting (2.1), ownership (2.2), community development investments (2.3), skill development and employment (2.4), local procurement (2.5) and community energy (2.6).

[10] *The Social Practice Forum is a global membership-based organisation of social performance practitioners, most from advanced economies. For more information, see* **https://socialpracticeforum.org**.

FIGURE 3 Locations of benefit examples

Disclaimer: This map is provided for illustration purposes only. Boundaries and names shown do not imply any endorsement or acceptance by IRENA.

2.1 Siting

Land acquisition strategies determine where projects are sited. In Sub-Saharan Africa, projects are generally either located on land owned and prepared for them by the national government, or on land accessed via negotiations with communal stakeholders or land leased from commercial farmers. Especially in South Africa, where the country's colonial and Apartheid history heavily influence land ownership arrangements, projects are sited on land leased from commercial farmers. On the other hand, across the majority of Sub-Saharan Africa, land is predominantly owned by respective states but is managed under communal governance, a system under which land is collectively held and managed based on traditional customs and rules (Slavchevska *et al.*, 2020).

Depending on the renewable energy technology deployed, land for renewable energy projects can be used for diverse activities during development and operations. Wind farms occupy land across potentially vast areas and mostly allow for mixed use, including livestock grazing and agricultural activities, during operations. However, solar PV and concentrated solar power (CSP) projects typically require more exclusive land use rights (though agrivoltaics may offer greater flexibility) (IRENA and FAO, 2021). While renewable energy project development is increasingly picking up pace in the region, several challenges related to land ownership have emerged.

In some cases, land use for large-scale renewable energy development requires resettling people and leads to pre-existing economic activities getting displaced (SMRI, 2022; USAID, 2018). The issue of customary land ownership and the absence of land titles in such cases introduces complications (Nolte *et al.*, 2022; Zimmerer, 2013). Complex socio-cultural and political milieus not only pose a challenge for project developers to navigate, they can also eventually hinder the success of projects. Project-induced resettlement triggers several human rights and socio-economic risks and impacts, including the disintegration of social support systems; disruption of women's economic activities; loss of dwellings, agricultural lands, trees, wells, shops and commercial buildings; and loss of businesses, jobs and income (CCSI, 2022; UNOHCHR, 2022). Therefore, not only should land use and acquisition by public and private sector developers be approached with great care, but significant support through government policies and agencies is also required to enable good results for all relevant stakeholders.

Inclusive land acquisition strategies offer better prospects for local communities, for example, direct financial participation and land share rights, and a greater ability to co-determine project outcomes. However, these engagement processes are complex and sensitive. Few companies have the required in-house skills, and, as a result, most rely on specialised external firms. At the same time, communities and even local authorities in Sub-Saharan Africa also typically need more experience and skills to negotiate outcomes effectively or understand the ownership structures, legal implications and opportunities of different options. They often do not have the economic resources to secure professional support.

Various land use arrangements are seen operating within these types of restrictions in Sub-Saharan Africa. When such arrangements succeed, it appears to be due to focused engagement with local stakeholders to identify and foster fruitful partnerships. Projects must include strategic stakeholder engagement and long-term commitment and vision from the beginning and throughout their life cycle. Examples exist of land partnerships involving diverse actors, including local governments, farmer co-operatives and non-governmental organisations (NGOs), resulting in projects involving a wider variety of landowners securing benefits for them through land lease income. The discussion below offers a sketch of five cases: two solar and three wind projects.

1 Rwanda: Solar project on NGO land

Agahozo Shalom Youth Village (ASYV) is an NGO established in a Rwandan village by Ms. Anne Heyman, a South African–born lawyer who gave up her legal career in New York and devoted herself to philanthropy. The idea of the youth village, which was established for orphaned teenagers, was inspired by an example from Israel of residential communities for children whom the Holocaust had orphaned in the late 1940s. The ASYV has shelters, through which it serves vulnerable children and young adults who were orphaned during or after the 1994 genocide in Rwanda. About 500 young Rwandans live, study and play in the 144 acre residential community. In February 2014, Dutch solar developer Gigawatt Global developed an 8.5 MW solar PV plant on a portion of ASYV's unused land. Scatec is the project contractor responsible for engineering, procurement and construction. The plant now generates rental income for the NGO to support its core operations through the land lease payments. The construction of the solar plant has also created jobs. All unskilled labour for the project has been hired locally, and over 350 workers have received training to work on-site during construction.

2 South Africa: Wind developer leases land from a farming co-operative

The Wesley-Ciskei Wind Farm leases land from a 28-member farmer co-operative, which was established to serve as a contractual partner in the wind project. As part of the process, the developer financially and legally supported the farmers on communal land to acquire land title deeds. This was made possible through the corporate culture of a project development team that prioritised the potential socio-economic benefits to the landowners and made the required resources available (*e.g.* access to a relevant network of professionals to support the process).

3 Namibia: Wind farm on Town Council land

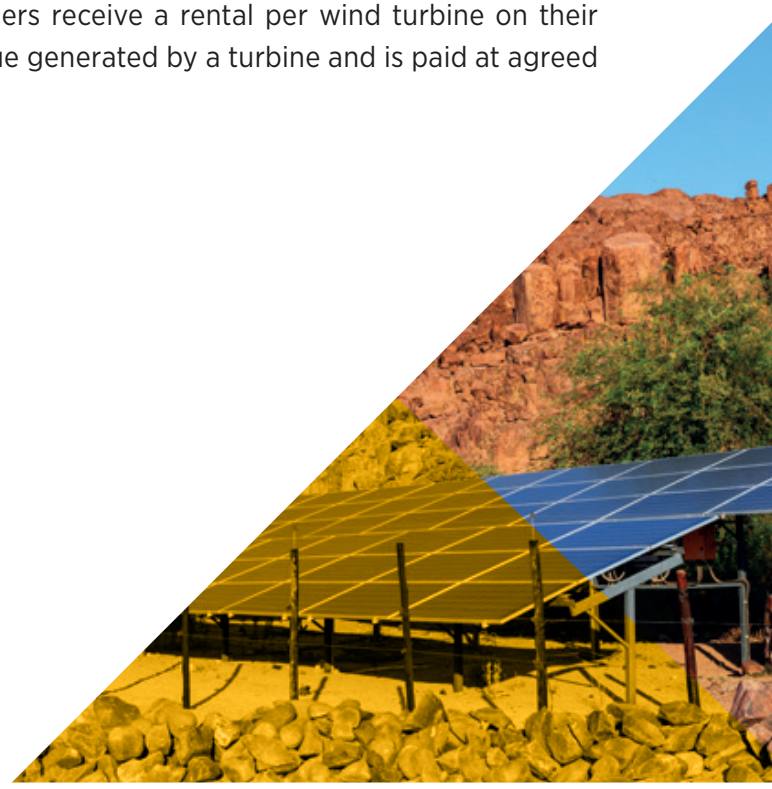
The Namibia-based Ombepo Wind Farm was constructed in 2016 and began commercial operation in December 2018. Ombepo Energy (Pty) Ltd, a wind farm company with 95% and 5% ownership, respectively, by InnoSun Energy Holding (Pty) Ltd and the Lüderitz Town Council (ECC, 2020), operates a 10 MW-rated wind power facility in the town of Lüderitz. This wind farm was developed in a unique partnership with the local authority, the Town Council. The three wind turbines of this wind farm are located on land owned by the Town Council. The council benefits through extra income from the lease, which helps it to strengthen its budget to fund essential community services.

4 Namibia: Solar project reuses former mining land

The Oranemund Solar Project was developed on land formerly used for mining. Though challenging to reuse for productive purposes, such land is typically already connected to infrastructure such as roads or transmission lines. Utilisation of unproductive land, as in this case, can, depending on customary land rights and national legislation, ease land access processes and minimise the displacement of people or economic activities.

5 Kenya: Wind farm shares ownership with Maasai landowners

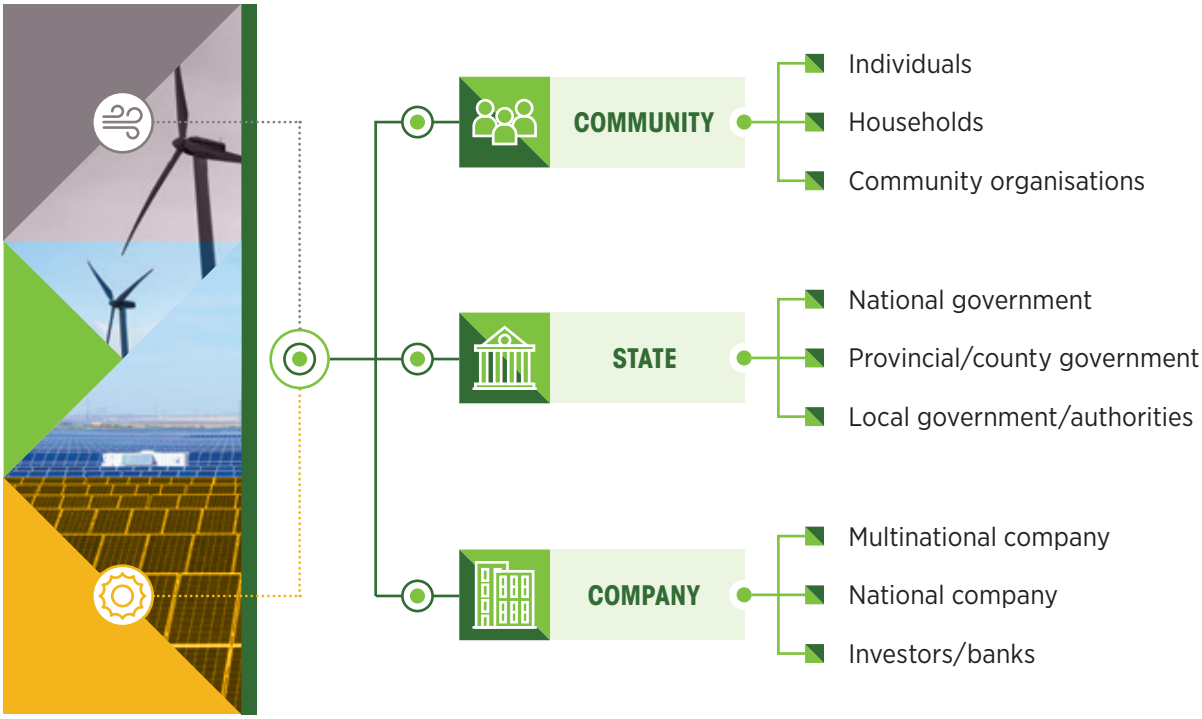
The 100 MW Kipeto Wind Farm, located within a Maasai community, has set up a partnership with local landowners. The project's multiple landowners receive a rental per wind turbine on their land. The rental is calculated on 1.4% of the revenue generated by a turbine and is paid at agreed intervals.



2.2 Ownership

Large-scale wind and solar projects in Sub-Saharan Africa are mostly privately owned based on an IPP model, but ownership structures are sometimes more diverse and may include national, provincial and local authorities. Communities, depending on their level of involvement, can be represented through individuals, households or community-based organisations (Figure 4).

FIGURE 4 Potential owners of renewable energy IPP projects



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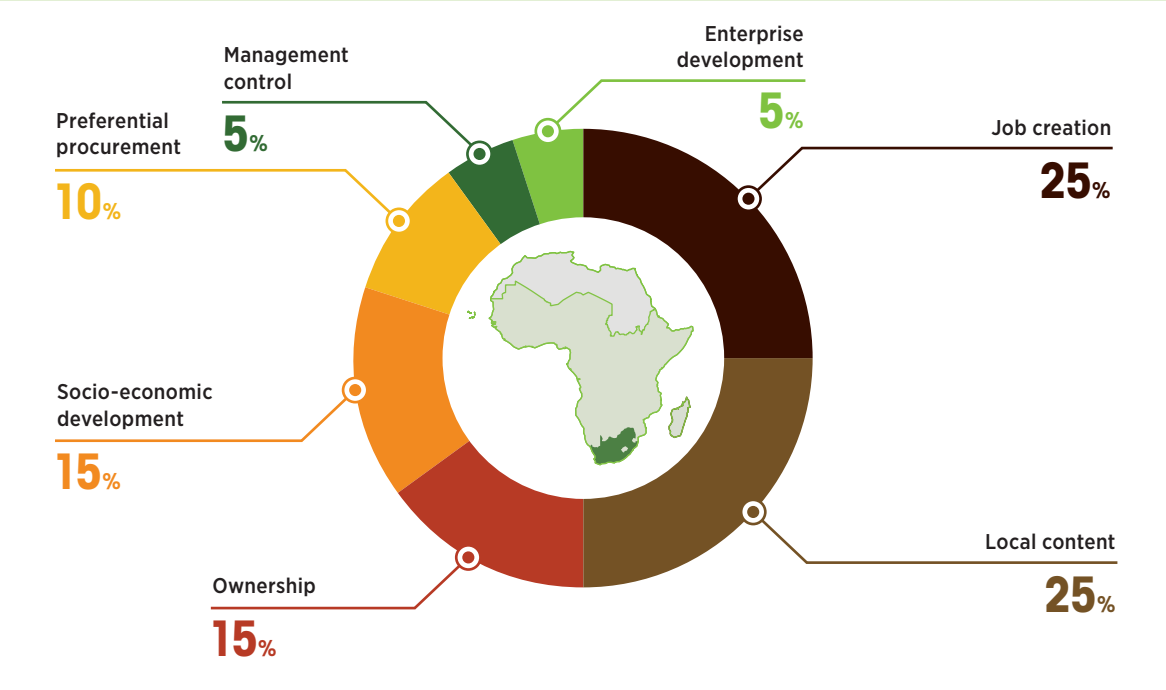
Experience in Europe suggests that community ownership presents an exceptional opportunity for IPPs to stimulate local economic development. In some countries, communities drive project development themselves, either with direct government support (*e.g.* in Denmark, Germany and the United Kingdom) or independently (*e.g.* in Australia, Canada and New Zealand). Namibia and South Africa are the only known countries in Sub-Saharan Africa to have implemented renewable energy procurement rules that require IPPs to share some ownership with disadvantaged groups or host communities. Box 1 provides more details on South Africa's REIPPPP.

Box 1 Contributions to community development through compliance with the REIPPPP (South Africa)

The Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) is unique in the world for its commitment to energy security and economic development objectives. It sets a powerful example on the continent for what can be expected of large-scale energy infrastructure.

Under the programme, independent power producers are mandated to comply with an economic development scorecard, which specifies expectations in terms of national and local benefits across seven areas: job creation, local content, ownership, management control, preferential procurement, enterprise development and socio-economic development. Bidders are required to make contractual commitments towards these criteria (see Figure 5 for details, as mandated between 2011 and 2022). Project bid evaluation rules initially assigned the economic development commitments a weight of 30%, while the price offered for electricity counted for 70%. Later, this was amended to a 10:90 ratio.

FIGURE 5 Weighting of economic development criteria for the evaluation of REIPPPP bids, 2011-2022



Source: (Eberhard *et al.*, 2014; Eberhard and Naude, 2017; WWF, 2015).

Since 2023, however, economic development commitments are no longer mandatory (Engineering News, 2023). This change contrasts with the ongoing negotiations of the South African government in the Just Energy Transition Partnership with international collaborators, where there is an emphasis on community and social ownership of renewable energy projects. Moreover, this change poses new challenges for project developers, as the public expects the REIPPPP to continue delivering related benefits. The economic development criteria did have a significant impact, as the discussion below indicates.

Preferential procurement is a strategy designed to give preference to specific types of suppliers, including those that comply with the broad-based Black economic empowerment (BBBEE) policy, qualifying small enterprises, exempted micro enterprises and women-owned vendors. As of the end of March 2024, 83% of the total procurement of ZAR 90.2 billion was spent on BBBEE-compliant enterprises, of which 77% were under construction and the remainder in operation (IPPO, 2024).

Black shareholding seeks to ensure that South Africans, especially those classified as beneficiaries of Black economic empowerment, have a significant share in IPP projects. The procurement conditions require at least 40% of each project to be owned by South African entities. In practice, this requirement has been exceeded; 54% of the total equity (ZAR 34.8 billion) is held by South Africans. On average, Black South Africans own 38% of these projects, which is 8% higher than the target. Additionally, Black South Africans hold a 22% share in engineering, procurement and construction contractors and a 31% share in operating companies – both above the respective targets.

Job creation

IPPs in South Africa have created a cumulative total of 78 075 job years for South African citizens during construction and operation. To date, 13 315 employment opportunities have been created for women and 38 728 job years for youth (IPPO, 2024). Across the nine provinces of South Africa, 45 378 employment opportunities have been created for local communities, although 63% of these jobs were generated in a single province, the Northern Cape, where the majority of renewable energy projects have been built.

Community investments

As of March 2023, IPPs collectively invested ZAR 3 billion (USD 162 million) in socio-economic and enterprise development (three-quarters of this sum went to socio-economic development and the rest to enterprise development).

Community ownership

Community shareholding is allocated to entities representing local communities residing in a 50-kilometre radius around project sites or living within the district municipal boundaries (IPPO, 2024). Local communities own an average of 9% of the overall project shareholding, exceeding the 5% target.

Ownership of project shares and/or project land are two important economic levers in renewable energy projects. If organised well, and depending on the size and profitability of an IPP project, shareholding-related dividend flows can be substantial, especially for community organisations in rural, sparsely populated and economically depressed areas. However, addressing the risks and challenges inherent in the process requires designing community ownership through appropriate structures. Often, for instance, community shareholding does not include voting rights in the project company and thus represents a passive form of ownership that does not adequately confer required legitimacy and decision-making authority to communities. In some instances, such ownership is locked in for a specific time. The REIPPPP, for example, was quickly criticised for stipulating a three-year lock-in following the start of commercial operations of the power plants (Baker *et al.*, 2015).

The following are two examples of the participation of non-corporate shareholders in project ownership structures.

6 Namibia: Wind farm shares ownership with Town Council

The Lüderitz Town Council holds a 5% share in the local wind farm, financed through a land provision (ECC, 2020). An annual lease payment benefits the council's budget. Various other town councils have followed suit. They benefit from this additional funding stream, which helps improve their financial capacity to deliver services and foster local economic development.

7 Zambia: Renewable energy training centre builds and owns a wind project

The Kafue Gorge Regional Training Centre (KGRTC) is a registered non-profit trust in Zambia, controlled by a regional board of trustees from the centre itself as well as from Eswatini, Malawi, the United Republic of Tanzania, Uganda, Zambia and Zimbabwe. The centre, which was established in 1989 and presently has a staff of 63, was established to focus on capacity building in the hydropower sector. It is now developing wind and solar projects sited on land owned by ZESCO, a state-owned power company. The two projects are in different phases of development; the 7.5 MW wind project is in a more mature stage (an environmental and social impact assessment [ESIA] for it will be conducted next to identify potential gaps and secure financing to advance to construction).

2.3 Community development investments

Whether motivated by their own commitments, driven by stakeholder expectations or mandated by regulations and policy requirements, private-sector-owned projects in the region are sharing benefits through community development investments. Less evidence exists of government-owned projects doing so. Investments range from donations and sponsorship, to support for the establishment of new community development organisations. Increasingly, project companies establish new community trusts or foundations, as ownership-sharing entities and often also to make community investments (see Box 2 for a brief description).

Box 2 Community trusts as vehicles to implement community shareholding and investments

Globally and in other natural-resource-based sectors, trusts or foundations are a common vehicle for the implementation of community development investments (IFC, 2015).

Community trusts serve as a vehicle for community development, and, in South Africa, also function as vehicles for community ownership, ensuring that communities have a direct stake. Trusts are non-profit organisations commonly governed by boards of trustees, which include members elected by communities, company representatives and an independent trustee. The inclusion of community-elected members allows communities to have a direct say in how benefits are distributed. Good practice aspires for at least 50% female representation in the board of trustees, which in turn facilitates the incorporation of gender sensitivity while prioritising benefit needs. A good practice is to involve trustees in capacity development activities to promote the broad range of skills needed to govern and operate impactful community trusts.

The board of trustees of the community trust of the Kenya-based Kipeto wind project controls the income received from the ownership of 5% of the diluted equity in Kipeto Energy Limited to support the wider community surrounding the proposed wind farm development at Kipeto. In South Africa, all but one independent power producer (IPP) partnered with a trust in response to the government's requirement for a community shareholding entity. South Africa's unique procurement programme requirements, which mandate allocating a minimum of 2.5% of the overall project shares to an entity representing local communities, have led to the establishment of over 100 new IPP-related community trusts since 2011. Shareholding is predominantly financed through loans from local development finance institutions.

Examples of community investments include the following.

8 Kenya: Wind farm invests in community capacity for development

The wind farm developer supported the establishment of a community trust for local development initiatives. It pledged KES 20 million during construction and an annual 5% of the net revenue during operations. The establishment of the trust has been a complex process, involving negotiations with the identified beneficiaries. Inclusive and culturally respectful consultations, formalised through a Community Implementation Committee, ensure all stakeholder groups are represented. Initial project assumptions defining the area of influence where benefits to be shared have been reviewed thanks to robust stakeholder engagement. Further, a new baseline study is being undertaken in recognition of the need for strategic planning. The baseline study will inform the existing Community Investment Plan, which determines the spending of the trust's funds.

Thanks to a pre-construction vocational skill training programme for approximately 200 local youth, about 150 such youth, including women, found jobs in construction. Careful legal agreements, dispute resolution mechanisms and house-building initiatives were implemented to strengthen community ties. Further, the project's commitment to biodiversity conservation, especially vulture protection, has not only benefitted the environment but has included training people, in turn generating ongoing employment, and has raised environmental awareness across local community groups. As part of its short-term budget, the developer also refurbished the Olyankalani Clinic in Kipeto, benefitting over 5 000 residents across multiple areas. During the recent drought, which severely affected peoples' access to food and livelihoods and devastated their livestock, the project provided food parcels on an ad hoc basis.

9 Cabo Verde: Wind farm's investment in developing environmental education and skills

The Cabeolica Wind Farm was established in 2009 and began generating power in September 2011. The project feeds electricity into the power grids of the four islands on which it has installations: Sao Vicente, Santiago, Sal and Boa Vista. The electricity supply into the power grids reduces power cuts and helps generate significant savings in fuel costs. Local communities around the farms are guided by a detailed and unique social and environmental plan. For instance, after the construction of the Santiago-based wind farm, small farmers whose cattle previously grazed on the land purchased by the wind farm were allowed to return under agreed safety conditions. In addition to these benefits, since 2013, the project has invested in an environmental education programme in schools and local communities that aspires to promote awareness of the need to conserve local species and the importance of renewable energy. This initiative aligns with efforts to promote the recovery of bird species populations on Boa Vista and reduce greenhouse gas emissions. The environmental programme has a different theme each year to cultivate interest among the students and address concerns related to the island's birdlife.

10 South Africa: Solar project invests in strategic community development

The 36 MW Touwsrivier Concentrated PV Solar Project is located 13 kilometres outside the town of Touwsrivier in the Western Cape. The project is owned by Soitec, the South African government's employee pension fund, Pele Energy Group and the local community, which holds a 5% share. While the project's ongoing maintenance and security operations provide jobs for approximately 35 people, it also strategically invests in community development. In line with government regulation, the project invests a percentage of its revenue quarterly into the community. These funds helped establish a hydroponics farm that hired 30 individuals, while at the same time supporting improvements to the local primary school. The community investments and the community trust also fund the Touwsrivier's Socio-Economic and Enterprise Development programme to improve residents' lives through education, skill development and enterprise development support. Bursaries assist with academic studies, offer enterprise development support for local businesses and showcase local products and services through an annual career fair. The implementing company, Knowledge Pele, hosts an annual Investment Summit to raise further capital to support community development programmes.

2.4 Skill development and employment

Globally, the renewable energy sector employed 13.7 million people in 2022 (IRENA and ILO, 2023). Of these, only an estimated 320 000 are in Africa – 2.3% of the global number. Solar PV provided 4.9 million, or one-third, of all renewables-related jobs. In an energy transition aligned with the Paris Agreement (the 1.5°C Scenario), renewable energy employment could grow significantly, to 40 million by 2050, of which solar would represent about 45%. Sub-Saharan Africa would have 3.5 million, or 9%, of global renewable energy jobs (solar representing one-third) (IRENA, 2023). Sustainable energy production could be a significant source of employment in Africa, thus playing an important role in poverty eradication. Regarding gender inequality, renewables are also expected to improve the female labour force participation rate, especially in the solar energy sector. Currently, women working in solar energy hold 40% of the total jobs available for both men and women; this is double the percentage for the wind industry (21%), and the oil and gas sector (22%) (IRENA, 2022).

The availability of skilled personnel and the depth of local supply chains in a country strongly influence the degree to which it can leverage employment opportunities from renewable energy projects. Most Sub-Saharan IPPs interviewed for this report rely heavily on imported equipment, components and specialised services. Domestically manufactured inputs remain limited, notwithstanding efforts such as local content targets in South Africa (as discussed in the previous section) or Ugandan IPPs' quantitative targets for local procurement.

This is partly because the local renewable energy market is too small and growth projections remain uncertain, making it difficult to justify long-term investments in such capacity building. The scale of a project, and thus employment opportunities, can offer leverage for building local capacity as well. The balance between local, national and expatriate employment varies considerably across projects, technologies and countries, and depends primarily on the cost and availability of skills near the IPP. Figure 6 shows key overall drivers that influence decisions to hire locals versus expats. The procurement frameworks and the transition policy have been the most effective drivers to incentivise large-scale local and citizen employment, particularly in South Africa.

FIGURE 6 Factors influencing local, national and expat employment

Some anecdotal insights are available from IPPs in the countries studied for this report:

In **Uganda**, the picture is mixed. The entirety of the operations and maintenance (O&M) workforce is composed of Ugandan nationals, including skilled and unskilled individuals, whereas the construction teams are mainly expats. In other segments of the value chain, the more specialised the skill requirements, the less likely that workers can be sourced locally. However, there is potential for skill transfer within the region, since many companies and individuals previously engaged in contracts in South Africa can bring relevant expertise.

In **Namibia**, a considerable South African presence reflects the expertise gained under the REIPPPP. Many senior construction company managers were expats from South Africa. However, construction teams and subcontractors were largely Namibian, due to excellent engineering capacities in the construction industry.

In **Senegal**, as in Uganda, skilled construction activities were mostly carried out by expats, whereas the local community mostly held unskilled positions. However, a shift occurs in operations: more local citizens were employed for security and ground maintenance. Yet, the fact that plants could be monitored remotely, and panels washed mechanically, created fewer unskilled jobs during operations compared with other PV projects.

Typically, local labour dominates unskilled positions. While training offerings for renewable-energy-specific skills are increasingly available, the limited availability of the skills needed for positions such as technician, plant manager, and health and safety professional, or for legal or financial management roles, continues to make it challenging to boost local employment. Despite intentions to hire entirely local O&M teams, IPPs in Uganda and Rwanda, for instance, have struggled to find skilled individuals in the surrounding host communities. A long-term concern is that a lack of proper skill training and transfer strategies continues to limit local knowledge generation, perpetuating reliance on international companies. A shift towards local companies and individuals can only be expected when a sufficiently large number of projects are expected to be developed (as in the case of South Africa), so companies can justify investments in training and upskilling workers.

A distinction needs to be made between workers who hail directly from communities near a renewable energy project and others who are residents of the country at large. Projects in the United Republic of Tanzania reportedly have a clear “locals first” recruitment strategy, which prioritises work opportunities for local community members. Several IPPs, from Kenya, Senegal, South Africa, the United Republic of Tanzania and Uganda, disclosed local community employment ratios (Table 1). The majority of the positions held by individuals from adjacent communities are unskilled, reflecting the low skill levels in these communities. The wide variation in the results can be attributed to the low maturity of the sector and the varying socio-economic conditions for labour in the different countries. However, enhanced data collection and monitoring for community employment can produce a more comprehensive sample size with consistent data points, one that could help formulate strategies for addressing the skill gap more effectively.

TABLE 1 Local community employment at selected independent power producers

	Renewable energy technology/segment		Local community employment	
			Number of jobs	Percent (%)
Uganda Case 1	**PV**	Construction: O&M:	180 of 250-300 n.a.	60-72 n.a.
Uganda Case 2	**PV**	Construction: O&M:	87 of 150-250 1 of 10	35-58 10
Kenya	**Wind**	Construction: O&M:	624 of 1 500 112 of 150	42 75
Senegal	**PV**	Construction: O&M:	150 of 350 n.a.	43 n.a.
South Africa	**CSP**	Construction: O&M:	n.a. n.a.	30-40 n.a.
United Republic of Tanzania	**Wind**	Construction: O&M:	n.a. n.a.	90 95

Source: Research interviews.
Note: CSP = concentrated solar power; O&M = operations and maintenance; PV = photovoltaic; n.a. = not available.

Maximising short-term construction positions involving unskilled labour does not necessarily result in decent, meaningful or long-term employment. The ILO defines "decent work" as work that is "productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organise and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men" (ILO, 2019). The qualitative aspects of jobs are equally, if not more, important for successful outcomes. Yet they are more difficult to measure, and generating desirable outcomes may require enhancing local leadership, providing mentorship support to employees and community leaders, instilling hope and aspiration in youth, providing social and gender-sensitive workplaces, and incentivising people to move back to local communities and creating more robust community structures.

Planning the roll-out of projects over time is essential to create a steady labour market. South Africa's REIPPPP was designed to stagger bid rounds to facilitate continuous demand for construction services over many years. However, delays and project timelines forced many workers to look to other industries as they waited for renewable energy projects to be finalised (Stands *et al.* 2014; Fyvie 2017). But sometimes, unintended positive outcomes emerge. In Uganda, for instance, project delays unintentionally extended the length of employment for many individuals. Instead of two projects proceeding simultaneously, staggering them resulted in unintended positive outcomes for project developers and employees since the contractors for the second project could rely on the same set of experienced workers from the first project. Despite the delay, staggering reduced the time and resources required for human resource management, lowered costs and led to an extension of the duration of work contracts for employees. Although the outcome involved employing some of the same individuals as in the previous project, there were opportunities for more meaningful work, increased labour productivity and the further honing of skills.

Local employment opportunities are also generated by investments outside core project-related activities. Whether mandated through policy or to boost community engagement in projects, IPPs investing in adjacent communities to improve quality of life and expand access to basic services are also known to create local job opportunities. The following are examples of job opportunities outside core project-related activities from the projects analysed:

- In **Kenya**, electricians were trained to maintain and operate off-grid solar PV systems installed in surrounding communities and on site.
- In **Rwanda**, five full-time jobs were created to manage landscaping and gardens and a small fruit orchard to supply a community-run agri-farm business during the O&M phase.
- In **Senegal**, additional jobs were created in the construction of a new maternity ward, the upgrade of schools and the improvement of service infrastructure in a local community.
- In **South Africa**, local temporary jobs for more than ten persons were created during the installation of more than 200 water points and a water treatment plant.
- In **South Africa**, IPPs aspired to boost local livelihoods, using funds to train local home care providers and nurses who provide community health care services.

11 Zambia: Renewable energy training centre teaches wind farm skills on campus

The Kafue Gorge Regional Training Centre (KGRTC, referenced previously in this report) provides training to the energy sector. The training focuses on skill development and offers on-site learning in all technical skill areas relevant to the operations of the state-owned power company, ZESCO. The KGRTC has two key departments: training and research, and consultancy. The consultancy department offers services from feasibility to construction. The centre's interest in owning and operating renewable energy projects (see example under ownership) is to generate income and provide opportunities to learn about and teach renewable energy deployment.

12 South Africa: IPPs collaborate on a biodiversity internship programme

Six coastal wind farms located near one another in South Africa's Eastern Cape province are developing their capacity for collaboration. One of the related initiatives is the Greater Kromme Stewardship (GKS) Internship Programme, under which the six wind farms, also called "the Coastal 6", jointly fund the placement of interns in the programme. The internship programme empowers young conservation professionals to contribute to various projects, in turn yielding multiple benefits for local communities. First, interns play a pivotal role in supporting landowners in declaring their properties as protected areas, thereby safeguarding crucial habitats and endangered biodiversity. Additionally, the programme focuses on community engagement and education; interns actively promote awareness of the significance of conservation and biodiversity, especially among the younger generation. The programme also benefits the local community in that the interns identify and nurture green economy opportunities aligned with the programme's conservation objectives.

2.5 Local business development

Local economic inclusion requires developing local businesses into viable suppliers for surrounding IPPs. This can be facilitated by operational business support and skill transfer.

However, given that the vast majority of IPPs are in rural areas, many local businesses are not set up to supply large-scale power production infrastructure or to provide the backup for the warranties and service-level agreements required by original equipment manufacturers, shareholders, banks and other actors. Therefore, most technical component procurement occurs in metropolitan areas. Supplier development and value chain capacity development are required far in advance to prepare local rural businesses for the requirements. This is especially the case during construction, when the majority of materials and expertise are required, and timelines are short.

Developing local suppliers is the most effective where there are multiple IPPs to diversify business opportunities and demand. It will not be feasible to develop local businesses for one-off transactions, or such businesses will only be created superficially. Therefore, support for local suppliers needs to be strategic and integrated into a larger economic activity or be supported across a long implementation horizon (the South African REIPPPP was designed this way to avoid booms and busts in economic activity). Regarding replicability, developing local small and medium enterprises (SMEs) takes time and relies on the local economic conditions of individual projects. Nevertheless, asset management and the 20-25 year O&M phase provide a significant opportunity for business activities.

Discussed below are two efforts at SME development: one in South Africa and one in the United Republic of Tanzania.

13 South Africa: Concentrated solar project plans for local supplier development

A South Africa–based CSP plant has a supplier development initiative to develop local SMEs and transfer business management and technical skills. It is partially funded by REIPPPP-mandated enterprise development funds. While the quantitative impact of local procurement is small relative to the full value chain, it can represent significant opportunities for local businesses. This IPP utilises joint venture partnerships between established businesses and community-based entrepreneurs (owned and operated by previously disadvantaged Black citizens) to increase the inclusion of local contractors in their operations. Local companies are contracted to provide seven types of goods and services: office and facility cleaning; industrial and solar cleaning; on-site horticulture; project site security; catering for project staff; scaffolding during construction and provision of bottled water for on-site consumption. An associated business plan forecasts that community-based entrepreneurs would be able to operate independently after three years.

14 South Africa: Wind farm helps create community-based bird monitoring business

This wind IPP supports previously disadvantaged individuals from the project host community to develop businesses that provide professional bird monitoring services. Five unemployed youth received training by a joint venture partner – an environmental specialist firm – throughout the construction of the IPP and into the operations phase.

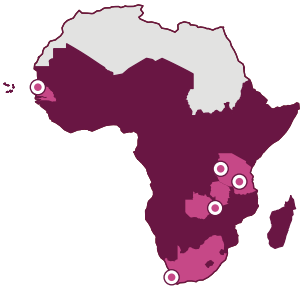
The bird monitoring focused on endangered species such as eagles and vultures. Two rotating teams monitored birds' migration paths and documented the presence of species as well as deaths, and injuries to species within the wind farm's vicinity. Each week, the teams searched the vicinity of 40 turbines on foot for carcasses. Reporting included eagle collision risk and QGIS tracking data. The uniquely proactive approach to bird monitoring allows teams to stop the operation of turbines until an endangered bird has left the area.

This joint venture eventually gave way to a community-based bird monitoring firm wholly owned by its employees. The firm contracts directly with the wind farm for the 20-year duration of the PPA. The wind IPP invested some of its REIPPP-mandated socio-economic development funds to boost the team's skills in business management and handling occupational health and safety issues, including the handling of snakes. The company is looking to extend its business to other wind farms in the future.

15 United Republic of Tanzania: Solar project created new business opportunities for local businesses run by women

The 5 MW solar project in Kigoma, United Republic of Tanzania, is supported by Power Africa. NextGen Solar, the project owner, has committed to stimulating the local economy through project-related employment and procurement opportunities. Over 170 people from the local community were employed during construction, a 14-person team is securing the project site and about a dozen panel cleaners are on site daily during operation. Those opportunities were filled mainly by men. The project therefore identified and fostered opportunities in its supply chain for women. For example, a small, woman-owned catering business delivers three meals daily to the on-site workers. Also, land maintenance, which involves regular grass cutting, is done by an all-women team. The project partnered with a local university and is taking, on an annual basis, four students enrolled in courses related to renewable energy for work on site.

2.6 Community energy and gender aspects



Integrating renewable energy in the wider discourse on poverty eradication can boost social progress, resilience, economic growth and environmental sustainability (Ezeanya and Kennedy, 2017). With adequate deployment policies, renewable energy can eventually fulfil large, unmet energy demand and serve as a major job creator and a major contributor to socio-economic development. Access to modern, clean and safe energy, as recognised in SDG 7, also helps mitigate adverse health impacts that disproportionately affect women and children. By reducing the use of cooking fuels that cause hazardous indoor air pollution, clean energy could improve human health and reduce the high number of premature deaths occurring annually.

Large-scale renewable energy projects are designed to feed electricity into high-voltage grids, usually national grids. They are unable to connect to and service residential and other consumers directly. Meanwhile, large renewable energy projects in Africa, and specifically Sub-Saharan Africa, are often located in areas not connected to an electricity grid. Investing in large electricity infrastructure in areas without electricity access raises questions about local energy service provision, whether through either grid extension or available options for off-grid service provision.

In the absence of an opportunity to extend the grid, some IPPs are embracing this dilemma in their benefit-sharing approaches. Projects utilise their technical competencies to advise and support local energy solutions, provide energy and electricity-related appliances, provide training and business support, and, in rare instances, build grid infrastructure to support entire regions with electricity.

16 Zambia: Solar project community development programme helping local farmers increase their income and resilience to climate change

The Bangweulu Solar Power Station project, a 54 MW solar power plant operating in Kafue District, Lusaka Province, includes a programme that provides farmers with small livestock, such as goats and chickens, and supports them in fruit and tree cultivation. One farmer receiving support from the programme increased his income by 50%. The programme also promotes low-carbon and energy-efficient technologies, such as solar cookstoves, which reduce reliance on fossil fuels and deforestation, reduce GHG emissions and improve air quality. The programme has distributed over 1 000 cookstoves to local households. While the IPP is feeding electricity to the national grid, the project is working to address a community priority for energy services through the community programme.

17 Senegal: IPP programme to support sustainable development and gender equality

The Taiba N'Diaye Wind Farm, a 158.7 MW project developed and owned by the Lekela Power consortium, began operating in 2021, and includes a programme dedicated to gender equality and sustainable development. Understanding that women play a leading role in driving socio-economic development, the project provided solar power systems with a combined capacity of 29.5 kilowatts to three businesses led by local women. The entrepreneurs could in turn scale up their mango, cashew nut and poultry production and processing businesses. Not only does this programme help these women save time and bring more money into their local communities, but the solar systems are also expected to save over 540 tCO_2eq across their life cycle. The project has also provided financial support for education, entrepreneurship and training in crop-processing techniques.

18 South Africa: Wind farm funds home improvement programme

South Africa's Home Improvement Programme is a project of the Umoya Wind Energy Farm located outside the town of Hopefield. While the wind energy farm was initially designed to make low-cost homes more energy-efficient, in a second phase, the focus shifted to skill development in plumbing, electrics and carpentry for the unemployed residents of Hopefield (AIIM, 2018). The programme stands out due to its participatory approach, which fosters skill development, creates employment, promotes entrepreneurship and supports the immediate improvement of living standards. It also holds great potential to improve health, education and gender equality through the increased accessibility of hot water for laundry, washing, cleaning and cooking. Under the programme, solar water heaters, insulated ceilings, and improved wiring and energy-efficient light bulbs are installed in low-income homes. The local municipal authority supports skill and capacity building, including carpentry, plumbing and electrical skills and employment for trainees. The programme also provides entrepreneurship and business skill training, and ongoing mentorship for community-based businesses resulting from the first phase. Trainees can offer these services in the Hopefield community, and the plan is to roll out these services to further homes and towns.

19 United Republic of Tanzania: Making electricity more affordable and accessible for women

The Mwengeni project provides regional residents with access to affordable electricity using a gender-sensitive approach that specifically addresses women's energy needs. The wind project sells electricity to the national utility and distributes it to over 6 000 local grid connections. The company cross-subsidises the tariff for local connections, allowing the region's residents to access electricity at a more affordable rate. The project is also implementing an evolving set of programmes supporting local economic development. It offers, for example, a financing programme for low-income households to purchase domestic appliances, and free training on the safety aspects and productive uses of electricity, and also supplies electricity at discounted prices to senior citizens and people with disabilities. The company has hired a significant number of women in technical positions and introduced technological innovations to the community – for example, its introduction of electric maize milling machines and pressure cookers has increased economic opportunities for women-headed enterprises (common in the maize and catering sector). Overall, the Mwengeni project's community investments are impacting the region's residents by making electricity more affordable and accessible, through training and employment opportunities for women, and by introducing innovations specifically designed to benefit women.

20 United Republic of Tanzania: Solar project electrifies entire region

The 5 MW capacity Kigoma solar plant, which was built to be a grid-tied project but eventually became a standalone mini-grid, supplies electricity through more than 35 000 connections. Residents and businesses are benefitting from first-time reliable access to electricity, which integrates existing diesel generation capacity and stimulates a range of economic activity in the region. Among the benefitting institutions is a girls' college whose popularity has been reported to have shifted significantly due to the availability of electricity, which has enhanced the students' experience in the classroom as well as while living on campus. NextGen Solawazi, the project owner, is expanding the project to meet growing demand.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3 DISCUSSION OF GOOD PRACTICES FOR COMMUNITY BENEFITS

The previous section highlighted the range of emerging community benefits from large-scale solar and wind energy projects in Sub-Saharan Africa. This section focuses on how rights-based approaches could be further integrated into renewable energy projects. Doing so would align the industry and developers with internationally recognised good practices (*e.g.* the UN Guiding Principles on business and Human Rights [UN, 2011] or the International Labour Organization Conventions [ILO, n.d.]), and advance social justice objectives. Further, such benefit-sharing approaches and supportive policies could amplify the benefits for project-affected communities. Approaches to human rights, gender equality and social inclusion,[11] indigenous people and stakeholder engagement are discussed.

Underlying rights-based approaches is how IPPs engage with communities – recognising their diversity and complexity. This is central to planning for and implementing sustainable benefits, which may also help communities become more resilient in the context of climate change. This section further highlights areas for strengthening practices, mentioned during interviews with the project implementers and supported by various studies.

3.1 Human rights

The United Nations' Office of the High Commissioner for Human Rights, in its key messages on renewable energy and the right to development, states that "A just transition from fossil fuels to renewables should be grounded in a human rights and development-orientated approach that would work towards fulfilling human rights for all including the Right to Development" (UNOHCHR, 2022). Promoting this right is one of the major opportunities for enhancing socio-economic benefits, as highlighted in section 1.

[11] *Gender equality and social inclusion emphasise the need for the equal inclusion of all individuals and groups, including women and those disadvantaged based on their identity, in community benefits highlighted in the project examples above. The intersectionality of social inclusion and gender equality issues is increasingly a frontier of practice globally (SMRI, 2022) While these are not explicitly explored in this report, thinking around current community benefit approaches and recommendations would recognise the interconnections of social identity (ethnicity, age, class, disability and gender) and the way those identities interact to reinforce inequalities. Their impact on energy justice in Sub-Saharan Africa requires much deeper analysis.*

Solar and wind energy projects are subject to the human rights legislation of the countries where they exist. They must also comply with any applicable requirements of the developer's country of jurisdiction. Meanwhile, there are no specific requirements for renewable energy projects in Sub-Saharan African countries to incorporate human rights considerations. However, developers based in certain countries must fulfil increasingly specific human rights due diligence requirements (*e.g.* the European Union Corporate Sustainability Due Diligence Directive of 2023). In addition, where projects are supported by international development finance, they must comply with the applicable international standards and guidelines (*e.g.* IFC Performance Standards, Equator Principles and guidelines of the Organisation for Economic Co-operation and Development), which include human rights considerations. Research and interviews for this study found a high prevalence of small companies developing projects in Sub-Saharan Africa that have little or no experience in such matters. Many demonstrate little to no recognition of the need for a proactive rights-based approach and are at best compliance driven. There is an opportunity to learn from the experiences of the extractive sector, and other industries that have more readily embraced this agenda, while in the case of renewable energy, it is still largely civil society that is paying attention (BHRRC, 2021; CCSI, 2022).

Perhaps this gap is based on the industry's self-perception that renewable energy projects generally have lower environmental and human rights impacts. However, large-scale projects can pose significant threats, which are compounded by the remote locations of the projects and the pre-existing socio-economic and socio-political vulnerabilities of the affected communities (BHRRC, 2021; Dolton-Zborowski *et al.*, 2022). Like fossil fuel projects, human rights infringements and violations in renewable energy projects typically relate to land rights and displacement, and the rights of indigenous peoples (*e.g.* free, prior and informed consent). To some degree, there have also been threats against human rights defenders, including women, where projects have faced resistance (Bansal and Green, 2021; Timperley, 2022). Other potentially salient impacts could include those on community health, safety and security, working conditions for employees, and access to information and stakeholder engagement (Bansal *et al.*, 2021).

Corruption-related risks may be indicative of potential human rights violations and undermine community benefits (CCSI, 2022). For example, a company acting inappropriately or fraudulently to secure tenders, licences or permits may infringe on communities' human rights by causing environmental damage, illegally "grabbing" land or diverting project finances otherwise due to local governments for socio-economic development and infrastructure delivery.

Concerning hiring practices, interviews across different project locations highlighted instances of local councillors and traditional authorities adopting unfair and exclusionary practices in allocating employment opportunities. Developers and their contractors must follow transparent employment processes. In addition, the involvement of a trusted community liaison officer was deemed essential to help ensure fair and transparent employment. Trustees were reported to have been unduly pressured to push for certain community development initiatives using specific service providers. In one instance, a trust provided trustees with training and a supportive environment to mitigate this risk. All of this underlines the importance of communities voting for trusted local community representatives who are invested in the bigger picture of local socio-economic development and the public good.

3.2 Gender equality

As noted in *Solar PV: A gender perspective* (IRENA, 2022), there is an intrinsic link between human rights and gender equality, reinforcing the need to take a gender-aware approach to developing renewable energy projects in Sub-Saharan Africa. As in many other parts of the world, gender disparities are deeply entrenched on the continent (Mckinsey Global Institute, 2019; Sokona *et al.*, 2023),[12] and increasing the active participation of women, and securing benefits for them, is an immense task. The energy transition offers an opportunity for profound societal transformation towards diversity and inclusivity in the workforce across affected communities (GWNET, 2019). If achieved, this would also help address historic and present systemic injustices in the energy sector and society more broadly (Sokona *et al.*, 2023).

It is encouraging to note the growing attention to gender in some of the projects explored for this report. However, some interviewees noted that gender mainstreaming is yet to be genuinely achieved in government policy, implementation and institutional capacity. This is even though national gender policies are in place, including, for example, in the Tanzanian Rural Energy Master Plan (REMP 2022) and the Sustainable Energy for All (SEforALL) project.[13] Also, significant gender-focused work is ongoing with the support of continental and wider international organisations including the AfDB, the Climate Investment Fund and the ENERGIA International Network on Gender and Sustainable Development, or regional bodies such as the Economic Community of West African States[14] (ECOWAS, n.d.).

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[12] *In exploring existing gender and other inequalities in Africa, Sokona et al. emphasise the continent's legacy of colonisation, in which "institutions and systems were designed to extract primary commodities to supply markets in Europe", and which, to do so, also restructured African economies and "devastated many thriving societies, embedded systems of patriarchy and racism and left structural dependencies…" (Sokona et al., 2023). In its research towards advancing women's equality in Africa, McKinsey Global Institute states that "although some countries have made tremendous progress towards gender parity in some areas, overall the gap between men and women in Africa in both society and the world of work remains high… African women have lower levels of education, and have less access than men to the financial services and digital technologies that increasingly unlock doors to economic opportunity" (Mckinsey Global Institute, 2019).*

[13] *The REMP (2022) recognises that "electricity access is gendered…" It presents the SEforALL Gender Action Plan as a strategic tool for gender-responsive SEforALL. Key issues in the REMP for mainstreaming gender in governance and decision making recognise the need for "policy development, implementation and monitoring, service delivery and financing" as well as "promoting increased women's participation and leadership in energy governance and institutions … and promoting gender equity in planning, designing, producing, supplying, and managing sustainable energy solutions" (REMP 2022).*
The Tanzania Country Brief (2020) emphasises the need for significant attention to the details of implementing SEforALL. From a gender mainstreaming perspective, institutional capacity constraints and gaps in detailed job descriptions and mandates to intervene in policy formulation and planning were seen to persist (Ngoo and Kooijman 2020). For example, the Gender Committee, established in 2018 to work closely with the SEforALL secretariat on gender issues, including in the implementation of the SEforALL Action Plan, had not yet developed the required interventions, including the capacity-building activities for the Gender Commission itself (Ngoo and Koojman, 2020). While the more recent REMP outlines roles and responsibilities for implementation, interviews conducted for this study highlighted constraints that include inadequate institutional capacity, the absence of clear targets for policies and projects, and a lack of gender-disaggregated data for monitoring and evaluation.

[14] *The ECOWAS Policy for Gender Mainstreaming in Energy Access is a framework governing the implementation of gender mainstreaming across energy sectors in all member countries of West Africa. To align with it, the ECOWAS Programme on Gender Mainstreaming in Energy Access of 2013 put gender at the centre of energy-related policies, laws and projects. The policy envisions equal access to modern energy services for both men and women, to raise living standards and boost economic development. Key objectives include increased awareness of gender and energy issues; gender-inclusive energy policies; women's increased participation in energy-related fields; and the establishment of comprehensive monitoring and accountability mechanisms.*

Interviews that highlighted gender awareness in project design and implementation focused on employment opportunities and constraints, land access and livelihood activities, and community benefit planning and structures. Several of the project examples discussed in section 2 recognise some specific women's needs that would be well served in the early design of benefit projects. For example, access to clean cooking and water heating technologies (South Africa and the United Republic of Tanzania) saves the time spent collecting wood and improves women's health (Ngoo and Koojman, 2020). Such improvements have ripple benefits for the wider family. Prevailing gender role expectations result in girls being commonly involved, along with female adults, in gathering heavy wood resources and burning wood for heating and cooking, exposing them to indoor air pollutants, which impact their health (Ngoo *et al.*, 2020; Sokona e*t al.*, 2023).

Early involvement of women in energy-related projects is essential to ensure the projects consider their needs and perspectives. One example is the electrification of mills and water pumps. Although men almost exclusively own and profit from mills (Pueyo *et al.* 2022), electrification would reduce the cost of milling for women, letting them invest time and money elsewhere, while generating nutrition and health gains for the family. The money saved could also be spent on children's schooling. Where water is pumped and treated closer to people's homes, it benefits women and other marginalised individuals, including older people and people with physical disabilities, who have to spend less time and physical energy to fetch it. Improved water sanitation benefits women and vulnerable community members and contributes to broader family and community health.

Community access to electricity was demonstrated to further benefit women, who could extend their entrepreneurial activities (Senegal, South Africa, the United Republic of Tanzania, and Zambia); for example, they could sew clothes faster, stock their shops with new products requiring refrigeration and use electrical appliances to make and store juices and beers. In fact, where fishing is exclusively the economic activity of men, access to refrigeration has enabled women to buy, freeze and sell fish to wider markets, in turn boosting their income and security (United Republic of Tanzania). The emotional and psychological ripple effects are hard to overstate – moving women from the invisible and voiceless periphery of communities towards the centre, where they felt empowered and increasingly able to assert themselves in community decision making.

Gender perspectives must also be embedded from the beginning to ensure that women have a share in the benefits from skill development and enhancement, and business development programmes. However, it is clear from the literature and from research interviews that women are often not represented in the decision-making structures related to community investments and benefits (Practical Action, n.d.), including structures that determine who owns land and earns a livelihood or gains other benefits from it. "It is oftentimes the case that those who live and cultivate the land, mostly women, are in a more disadvantaged position. When women don't have access to resources, they are cut out from decision-making processes and do not have a say in deciding where the investment goes" (Bansal *et al.*, 2021). Interviews for studies conducted for wind projects in South Africa and Kenya, where community trusts are a part of the benefit opportunities, showed intentional and demonstrable female representation,[15] suggesting that women may play increasingly active roles in gender-inclusive decision making.

[11] *On the Eastern Cape, two wind farm projects with established community trusts saw community members vote women into the trusts, to reach shares of 60% and 50% .*

The concept of diversity, equity and inclusion (DEI) is increasingly a focus among organisations and policy makers globally. Black economic empowerment legislation that aims to address past inequalities in both South Africa and Namibia has been applied in these countries' renewable energy procurement programmes. This has resulted in more diverse workforce, management and ownership structures than would likely have been the case without the stipulated quotas and targets. DEI is also starting to find its way into renewable energy companies via ad hoc training or workshops (but was mentioned by interview respondents in South Africa only). But data on DEI are rarely gathered.

The energy sector is traditionally male dominated. While women have a larger share, 32%, in the global renewable energy workforce than in the oil and gas industry, at 22% (IRENA, 2022), their participation in the wind sector remains at 21%, while it is 40% in the solar energy industry. Across these sectors, women remain under-represented in technical roles related to science, technology, engineering and mathematics (STEM) relative to administrative roles. Women are generally typecast as fulfilling administrative functions, such as human resources, accounting, marketing, personal assistant or supporting services, rather than holding technical and operational roles. Several barriers limit women's entry, retention and advancement opportunities in renewable energy. These include gender roles, social and cultural norms, access to training and skill development opportunities, inflexible work conditions, self-perceptions, prevailing hiring practices and limited mobility (IRENA, 2019).

IPPs outside South Africa and Namibia generally lack a gender focus in recruitment strategies or training facilities. And science education for girls and young women is rarely prioritised in these other countries.

Uniquely in South Africa, women hold roles across the wind equipment manufacturing value chain, as well as in the O&M segment of a CSP IPP. Thanks to socially progressive policies, women were more likely to be in permanent senior roles in South Africa than in other countries studied. In South Africa, women occupy management and director positions (*e.g.* chief executive officer and economic development manager), and work in finance and accounting, human resources and talent management, project management, as well as commercial and legal roles. One reason may be that the total number of projects is much higher in South Africa than elsewhere in the region, but thanks is also due to the country's transition policy and the commitments of IPPs within the REIPPPP.

With few exceptions, women employed on site at IPP projects hold low-skilled and low-paid positions, such as cleaning, office management and traffic safety. As reported by industry stakeholders, for example, women were excluded from PV module cleaning but hired as security guards in Rwanda (where this is culturally more acceptable than in other countries). In Senegal, project stakeholders reported that 250 people were hired from local communities, yet not one among them was a woman. Meanwhile, female students participating in a wind technician course reiterated that they had lived away from their families for long periods and preferred to relocate where there is work so they can support their families.


LE PICTORIUM © Alamy Stock Photo

Besides cultural barriers,[16] women face other obstacles to their more equal participation across the renewable energy value chain (ISO, 2022; Ngoo *et al.*, 2020). First, fewer women choose a technical career in vocational colleges or tertiary education than men. Examples of locally recruited female technicians were rare, and the exceptions were worth highlighting. In Uganda, one IPP in the solar PV sector employs a female O&M electrician with ten years of experience. After starting in rooftop PV, she progressed to working in utility-scale plants, and now works within an hour of her hometown. She visits schools to inspire young women to pursue technical career paths, specifically in PV. Given that technical careers are rare for women, South African IPPs and training institutions are targeting local women to address the gender gap.

Second, worksite conditions are not gender sensitive: separate and clean toilet facilities are rare. Also, childcare considerations are not accounted for: there are no flexible hours, and working conditions do not account for safety. In South Africa, REIPPPP procurement and compliance reporting metrics are a primary driver for company practices to include women in the renewable energy value chain. For such information to aid in better understanding and better planning and implementing gender-aware socio-economic development benefits, its collection and evaluation needs to be disaggregated. Combining women and children in M&E reporting, as was reportedly the practice in projects, for example, in Senegal, does not align with international good practice focused on gender equity.

3.3 Indigenous peoples

There is an increasing emphasis globally on understanding the impacts and opportunities of large-scale renewables-based projects for indigenous peoples, who are increasingly confronted with the impacts of extractive and industrial operations linked to commercial agriculture, mining, energy (including renewables) and infrastructure projects that jeopardise their traditional lifestyles and the environments they safeguard and rely on (Kennedy *et al.*, 2023).

[16] *Research into gender-specific barriers to participation in the renewable energy workforce and industry is growing. Cultural barriers are commonly acknowledged, yet their complexity is beyond the scope of this paper. Cultural barriers include matters surrounding normative gender roles; the participation of girls and women in science, technology, engineering and math courses; and local rates of sexual harassment and gender-based violence.*

In 2016, the AfDB worked to incorporate provisions for indigenous peoples into its Integrated Safeguard System. The vulnerability of indigenous peoples to economic and social marginalisation, exploitation and exclusion warrants special attention (AfDB, 2016).[17] The existing literature on indigenous peoples highlights the importance of a project developer understanding local contexts, decision making and traditional governance (Bansal *et al.*, 2021; Kemp *et al.*, 2023; Kennedy *et al.*, 2023). Companies often lack the expertise and capacity to address these complex social issues (Bansal *et al.*, 2021). Compounding the difficulty is the current gap in DEI among social performance practitioners and consultants engaged to grapple with the issues.

Excluding indigenous peoples from decision making in project processes may lead to land grabbing and forced displacement. Worse, it is not only their land and livelihoods that are lost, their communities' cultural integrity is lost as well. The Business & Human Rights Resource Centre has found that between 2010 and 2020, over 200 allegations of adverse human rights impacts related to renewable projects were reported, suggesting widespread failure in rights protection (Business & Human Rights Resource Centre, 2021).

Therefore, a rapid energy transition that respects the rights and traditions of indigenous peoples must incorporate inclusive and participatory methods of finding solutions to the socio-economic and cultural implications of large-scale renewable energy projects, so that the projects themselves are sustainable and just (World Economic Forum, 2023). Even projects that have adverse effects may bring important benefits that will bolster the welfare and resilience of local communities.

Community participation will also help to better understand and appreciate traditional knowledge systems while also making renewable energy projects more sustainable and effective. The traditional ecological knowledge of indigenous peoples is a rich source of information concerning sustainable land management and biodiversity conservation to, respectively, plan and implement projects (KfW *et al.*, 2021). An all-encompassing approach fills the gap between renewable energy technologies and the age-old practices of people in managing the environment in a manner that ensures the equitable and sustainable distribution of the energy transition's benefits. Such an approach strengthens community support and boosts the long-term viability of renewable energy initiatives in line with international human rights standards. Governments, DFIs and international organisations may promote a rapid and equitable global energy transition by implementing policy measures that prioritise rights protection.

[17] *The IFC recognises indigenous peoples in similar ways as "social groups with identities that are distinct from mainstream groups in national societies, are often among the most marginalised and vulnerable segments of the population. In many cases, their economic, social, and legal status limits their capacity to defend their rights to, and interests in, lands and natural and cultural resources, and may restrict their ability to participate in and benefit from development. Indigenous peoples are particularly vulnerable if their lands and resources are transformed, encroached upon, or significantly degraded. Their languages, cultures, religions, spiritual beliefs, and institutions may also come under threat" (IFC, 2012).*

3.4 Stakeholder engagement

Ensuring socially just and sustainable implementation of renewable energy projects in Sub-Saharan Africa requires a solid commitment to community engagement from the outset. Operating close to a community for 20 years or more necessitates maintaining a high degree of trust to sustain the social licence to operate. Community engagement must include several key elements – it must be sufficiently comprehensive and inclusive, occur early in the project process and be of high quality. An example of good practice in community engagement on a Kenyan wind farm included formal stakeholder engagement plans with regular public meetings, focus group discussions with vulnerable populations and appropriate methods to communicate project updates (OAG-DoJ, 2018). Stakeholder groups included representatives of local communities, particularly acutely or potentially vulnerable groups (women, older people, children, indigenous populations and minorities) and civil society organisations.

Providing transparent and relevant project information and committing to adequate budgets and experienced personnel is also critical. For example, pilot Development Coordination Forums in two municipal districts in the Northern Cape Province, South Africa, established multi-stakeholder forums involving companies, community trusts, agriculture associations, local governments and faith-based organisations to build consensus on communicating and collaborating around corporate social responsibility (CSR). Importantly, including an outsider with relevant social performance skills and with limited or no stake in the project to drive the process was seen as valuable to minimise conflicts of interest, ensure the agency and opportunity to act deliberately with foresight and capacity and advance multi-stakeholder collaboration. Establishing such forums takes time and resources but is critical to ensure participants' understanding and buy-in. Thus, a "just" process design might require additional efforts in contexts dominated by poverty and inequality. Universities carry great potential to support such planning processes. On a Kenyan wind farm project, a local community member leads the social performance team, and a Community Investment Committee was established, elected by community members, including women, different clan representatives and covering a broad geographical area, to focus on socio-economic development benefits. The project also established a representative Project Labour Committee to facilitate ongoing and transparent recruitment practices.

Complaints and concerns are going to arise around all projects. An accessible, well-functioning grievance management procedure is therefore important to ensure transparency with host communities. This is required by the IFC safeguarding standards. The grievance mechanism must be established from the outset. Tools include websites and online grievance mechanisms. Projects in Senegal, for instance, offer a combination of letterboxes installed at the village marketplace, forms obtained from the project site office/gate and submitted on site, and a telephone line. Beyond this, effective grievance mechanisms must ensure that local stakeholders can communicate in their own language and that potentially vulnerable populations (*e.g.* women and disabled) can access them. It is important to include anonymous channels for reporting possible incidents of gender-based violence and harassment and, similarly, to ensure adequately skilled project team members are available to address such incidents sensitively and appropriately.

Success in stakeholder engagement lowers the overall risk profile of a project (leading to more advantageous financing terms and higher returns), reduces the likelihood of any need for dispute resolution, and avoids cost and time overruns during construction (IFC, 2019; USAID 2017). The diversity of socio-economic, cultural, political and historical contexts within which renewable energy projects are developed in the region means there is no one-size-fits-all solution. Understanding the nuances of local economic, customs and political landscapes, developed in collaboration with local expertise and anchored in local culture, encourages greater acceptance and better results from local development efforts (SMRI, 2022). Previous sections of this report sketch an emerging landscape of engagement practices shaped by national renewable energy policies, international institutions, private company interests and host community needs and initiatives. Several project examples already include human rights, gender equality and social inclusion, and indigenous peoples' considerations in their engagement activities. However, this often appears to be unintentional and ad hoc. The need for structured and inclusive community engagement to incorporate affected communities beyond landowners and land users (*i.e.* local community members, regional and local government structures, traditional authorities, and NGO and community-based organisations) was acknowledged during interviews. It was further emphasised that community engagement needs to go beyond the compliance-based approach of the initial ESIA stage.

Case studies and project interviews highlighted several engagement areas requiring more systematic consideration. First, there is still limited recognition that ongoing, deep and informed community engagement takes time and requires building project-related knowledge and understanding. As seen in Namibia's wind farm town, Lüderitz, where wind is generally discussed as a local economic and cultural asset, respect for how local populations perceive projects impinging on treasured surroundings and resources (including sun[shine] and wind) is inadequately contemplated. Wind power is essential to small-scale and recreational fishing activities and is celebrated with an annual wind festival. Thus, the acceptance of wind power hinges on how the project is integrated with local customs and priorities. Second, several project examples demonstrate that engagement with communities is often still blind to issues of gender and vulnerability, as well as to the needs of indigenous peoples, thus entrenching or exacerbating existing inequalities. Third, strategically integrating community benefit plans with local development objectives and priorities is largely absent. This is clear in the South African context, where local authorities are commonly excluded from projects, and attaining their consent is not a requirement. Not only does this set up potentially adversarial relationships from the start, but it also foregoes the sustainability value that local authorities could provide through their socio-economic understanding and knowledge of prioritised local and district development planning. Also, there could be unanticipated social impacts at closure, including the loss of community benefits. Where developers are one of several renewable energy providers in a larger park or economic zone, community engagement appears to be outsourced to a third-party facilitator, and engagement is separated from the developer and its activities. While possibly efficient, this disconnect may undermine project-community relationships and misses the opportunity for developers to adequately grapple with their contribution, or lack thereof, to community benefits.


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Beyond a focused project-community engagement approach, public-private collaborations provide valuable opportunities to enhance community benefits from renewable projects. Three examples were highlighted during the study. In the Eastern Cape, South Africa, efforts have been made to jointly engage community trusts and different neighbouring IPP developments to pool financial and other resources to amplify high-cost community benefit projects. This could apply to projects in renewable energy parks, special economic zones and regional developments across Sub-Saharan Africa. The need for relevant government role players to collaborate in these efforts was emphasised but has yet to be achieved. The second collaboration example, a training project in Zambia, the KGRTC[18] ILO Skills and Enterprise Development in the Energy Sector is a pilot intervention in co-operation with the ILO. KGRTC implements the training programme driven by market needs and with strong engagement by the private sector. It contributes to Zambia's skill pipeline for the expected rapid deployment of renewable energy and energy efficiency technology. The activities in the pilot project focus on the Zambian context, although KGRTC, as a regional facility, offers training to participants throughout southern Africa. Lastly, in response to the opportunities and challenges presented by the rapid expansion of renewable energy, the Initiative for Social Performance in Renewable Energy (INSPIRE) was launched in 2021 to advance the field of social performance in the renewable energy sector. This is facilitated through knowledge sharing, building capacity for social performance practitioners and community trust leaders, and improving benefit sharing for all stakeholders. Actis/Lekela and BTE Renewables provided private sector seed funding to start INSPIRE, which is now a registered non-profit company.

The investments, collaboration and co-operation, where they occur, between IPPs, governments, local communities and supporting organisations, demonstrate commitment to supporting a fair energy transition and increase the potential that economic, social and environmental benefits will come to local communities.

[18] *The Kafue Gorge Regional Training Centre (KGRTC) is discussed in project example 11 on page 31.*

4 CONCLUSION AND RECOMMENDATIONS

4.1 Conclusion

The converging climate and energy security crises underline the urgency of advancing the global transition to clean energy. At the same time, the existing energy economy has developed embedded inequalities and social injustices. As early as 1978, countries including the United States recognised that vulnerable communities, including communities of colour, suffered the most negative impacts of energy development while benefitting the least (Baker, 2023). The African continent, too, offers many examples of systemic injustice. For a new energy system to be(come) a just energy system, it cannot simply be built on the foundations and habits of the old.

Sub-Saharan Africa must address the climate and energy crises and the critical need for socio-economic development towards achieving the SDGs. Doing so will rely on the dramatic expansion of renewable energy projects, triggering significant pressures on land and in communities already marginalised by the current energy system.

For the energy transition to be just, project-affected communities must be empowered to play an active role, sharing their deep local knowledge and exercising their right to participate in, and receive the benefits of, renewable energy projects. The historic exclusion of communities by energy industries and projects (*e.g.* extractives and large-scale infrastructure builds) has provided difficult and costly lessons that should inform the nascent renewable sector's approach to community engagement. Meanwhile, expanding large-scale wind and solar projects on the African continent and elsewhere, in areas dominated by underdevelopment, unemployment and inequality, must move beyond existing industry models. The expectations of the 1990s and early 2000s for corporate citizenship and CSR are outdated. The real economic and social value of projects is to be realised in affected communities. Examples of its realisation are worth documenting and have been outlined here to inspire both practice and policy.

4.2 Recommendations

In conclusion, this report offers several key recommendations for policy makers, industry, communities and financiers.

RECOMMENDATIONS FOR POLICY MAKERS

- Define national expectations for the contribution of large-scale renewable energy projects to national and local development objectives and translate those into appropriate policy and procurement requirements that provide opportunities for the participation of diverse actors, including national, local and community-based actors, in deploying renewable energy.
- Support continuous local renewable energy industry development through staggered implementation and regional collaboration (*e.g.* on skill development, supplier development and community development investments).
- Monitor socio-economic contributions and impacts of renewable energy projects and manage cumulative impacts arising from large-scale developments in high-value renewable energy areas.
- Create effective support programmes for industry and communities with communal land rights to co-create socially sound projects that deliver appropriate community benefits.
- Leverage opportunities in the energy transition to increase diversity, equity and inclusion through mainstreaming gender and other relevant considerations in policy and establishing targets and a cross-sectoral framework and standard for monitoring and reporting.
- Collaborate regionally to develop consistent regulatory frameworks, supporting countries at different stages of their renewable energy journey.

RECOMMENDATIONS FOR INDUSTRY

- Dramatically expand the capacity and application of social performance resources across the project life cycle, ensuring that good practice elements (*e.g.* human rights, gender and social inclusion, indigenous peoples) are effectively integrated.
- Enhance timely engagement, transparent and accessible communication, co-ordination and follow-through, addressing impacts and expectations raised locally across the project life cycle and by all project stakeholders.
- Effectively communicate project contributions to local and national development objectives to build the industry's reputation and support its social licence to operate.
- Strengthen company capacity for co-ordination and collaboration with other private sector players in renewable energy and other industries to ensure that opportunities for sustainable and transformative benefit sharing are identified early on, planned for, and implemented and monitored in a co-ordinated or collaborative way to maximise positive outcomes.

- Establish and contribute to learning and collaboration platforms, bringing together industry and other relevant actors, through which opportunities for local economic and community development can be identified, mitigated, managed and/or maximised. Draw from lessons learnt the hard way by other industries (*e.g.* engage with resources in the mining sector such as made available through the International Council for Minerals and Metals).

RECOMMENDATIONS FOR COMMUNITIES

- Create sufficient capacity for civil society observation and partnerships to hold government and companies accountable.
- Proactively advance community-driven development agendas for renewable energy, and draw in trusted support and collaborations where possible.
- Utilise local and international capacity in academia and civil society to advance local preparedness to lead and benefit from a just energy transition.
- Implement transparent and democratic processes to ensure that all stakeholders are represented by trusted and competent figureheads. Such efforts should draw on knowledge, skills and resources available from local and traditional authorities.
- Strategise priority development areas – balancing the needs of the broader community at large and special interest groups (*e.g.* women, older people, particularly vulnerable people), and pooling resources among communities and with relevant government departments to maximise benefits (*e.g.* building sustainable clinics, schools, water treatment infrastructure, *etc.*).
- Empower women and youth to contribute to the decision-making process at the community levels.

RECOMMENDATIONS FOR FINANCIERS

- Integrate gender-sensitive considerations in expectations and assessments.
- Better understand and appreciate local contexts and allow for flexibility regarding the relative prioritisation of social and environmental performance standards.
- Ensure that social risk assessments are comprehensive enough to allow for confident categorisation of projects and risks.
- Support the renewables industry to manage social performance through incentives, requirements and technical training in key social performance expectations (*e.g.* social impact assessment, stakeholder engagement plan, human rights due diligence).
- Integrate M&E and reporting of community benefits into requirements and contracts.

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