

Transitioning to renewable energy in Sierra Leone

How getting the legal framework right and developing legal capacity can help get there

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By harnessing its significant unexploited potential for renewable energy generation, Sierra Leone has the opportunity to transform its economy and the livelihoods and health of its people. A properly adapted legal framework – with the capacity required to implement it – can smooth the transition to renewables and help attract the substantial investment that this will require.

Renewable energy to plug the gap in Sierra Leone’s supply – and improve its sustainability

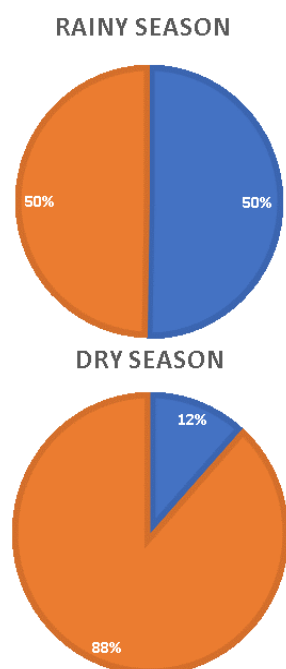
Demand for electricity in Sierra Leone greatly outstrips supply. Currently, operational generation capacity is approximately 98 MW, merely 35% of estimated demand. As Sierra Leone’s economic and social development continues, demand for electricity will continue to rise. Peak demand for electricity in 2022 is estimated at 283 MW, and is expected to increase significantly to 386 MW in 2023.

Access to electricity remains low, at around 26 percent of the overall population, and is concentrated in urban areas, dropping to between 2.5 and 5 percent in rural communities. Poor access to electricity is recognised as a debilitating constraint to long-term economic growth in Sierra Leone. This has numerous effects on people, impacting their livelihoods, access to education and health.

Sierra Leone still relies on fossil fuels for most of its supply – diesel generation and heavy fuel oil powerships, power plants mounted on a barge or a ship, provide 88% of electricity during the dry season and 50% during the rainy season, as shown in Figure 1. Not only is this

Figure 1: Power generation in rainy and dry seasons

■ Renewable (hydropower) ■ Non-renewable (diesel/heavy fuel oil)



Compiled from data provided by Sorie & Bangura

polluting, it is also expensive, as it relies on imports from neighbouring Cote d’Ivoire and is vulnerable to global market price fluctuations. Power supply from the main grid is erratic, undependable and financially burdensome or beyond the means of many households. Dependence on mostly privately owned diesel generators to provide or supplement power to homes and businesses is commonplace throughout Sierra Leone.

However, **hydropower has been providing a substantial proportion of Sierra Leone’s domestic energy supply** since the Bumbuna dam was commissioned in 2009. A second phase of Bumbuna is under development, which will see Sierra Leone’s generation increase dramatically.

Yet hydropower in Sierra Leone is heavily seasonally dependent – during the rainy season, which is typically from June to October with the months of July, August and September the

heaviest period, it makes up 50% of supply, reducing to 12% during the dry season with the period between February to April as the hottest and driest months. Other substantial sources of renewable electricity, therefore, will also be needed to meet the expected demand.

The Government of Sierra Leone has shown a strong commitment to sustainability in its policy statements. Its Medium Term National Development Plan set a 2023 target for 65% of electricity generation to be from renewable sources.

The good news is that Sierra Leone has significant further potential for renewable energy – hydropower, solar and biomass – as shown in Figure 2 and Figure 3 below. The Government has stated its intention to capitalise on this in its Renewable Energy Policy of 2016 and the Medium-Term National Development Plan of 2019-2023. Greater investment in renewable energy project development progress Sierra Leone towards self-sufficiency in its electricity supply. A renewable energy transition would support the growth of industries (such as mining, tourism, construction and agriculture). This would create new business and employment opportunities for the citizens of Sierra Leone as well as provide a real boost to

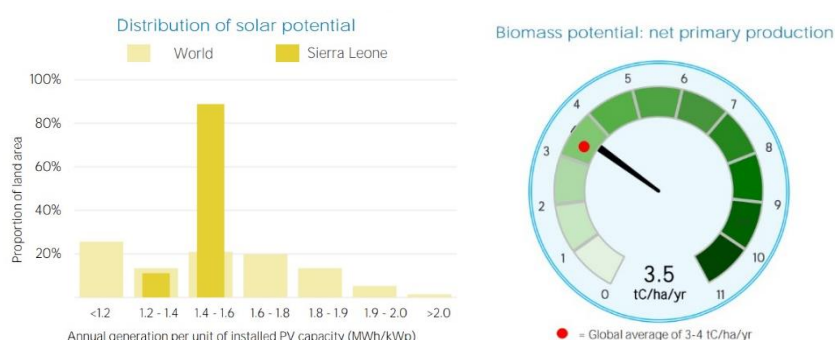
Figure 2: Sierra Leone's renewable energy potential

| Hydropower MW | Solar TWh | Biomass MW | Wind MW |
|---------------|-----------|------------|---------|
| 840 | 90.6 | 166 | 0 |

their quality of life through improved education, recreation and health – provided that those who need electricity are able to access it. It is the expectation that renewable energy will provide a cheaper source of electricity for consumers in Sierra Leone.

Compiled from International Renewable Energy Agency (IRENA), *West African Power Pool: Planning and Prospects for Renewable Energy, 2013*

Figure 3: Renewable resource potential



IRENA, *Sierra Leone Energy Profile (2022)*

Looking at the law

It is clear that delivering a reliable and accessible power supply is a key political driver in Sierra Leone. Domestically, Sierra Leone does not have sufficient financial resources to harness its renewable energy potential. To achieve its ambitions, Sierra Leone will therefore need to maximise its ability to attract foreign investment in the sector to complement domestic investment.

A country's legal framework underpins its investment environment and is often overlooked when considering transitioning to renewable energy (given the scale of investment required). In order to attract the necessary (foreign) direct investment to bring about the renewable energy transition, Sierra Leone needs to ensure that its legal framework **engenders confidence, provides stability and certainty, and ensures that investment in renewable energy makes commercial sense.**

In addition, technological advances often outpace regulation, meaning that **unintended impediments to adopting renewable energy solutions may persist in legal and regulatory frameworks**, entrenching fossil fuel dependence and use.

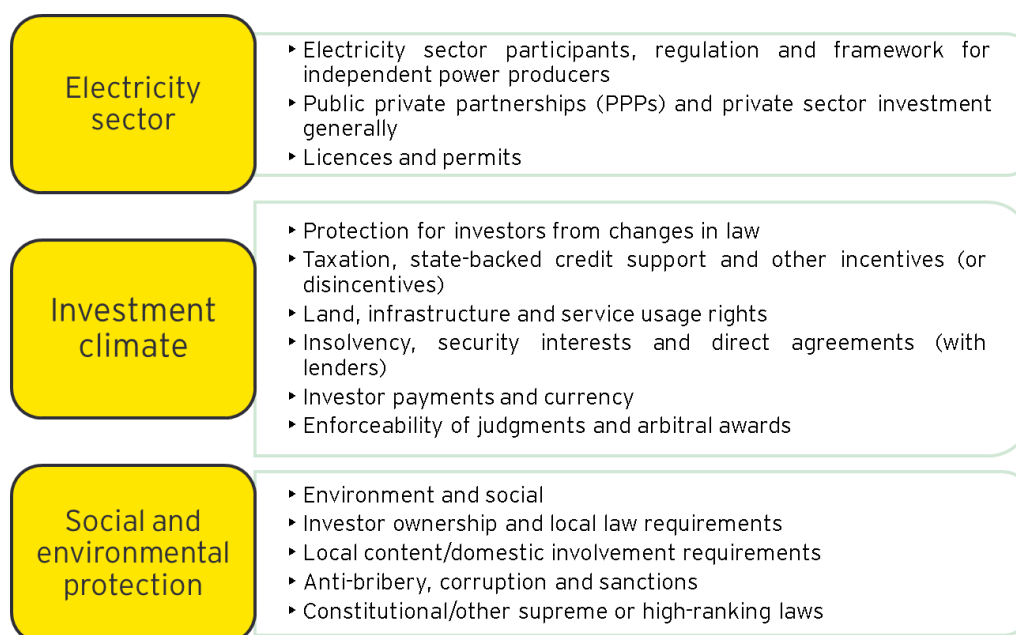
Finally, **Sierra Leone must ensure that its transition to renewable energy is sustainable** – financially, socially and environmentally. Given the predominance of agriculture in Sierra Leone's economy – it represents more than 60 percent of GDP – the impacts of the renewable energy transition on the agricultural sector require particular consideration. The transition has the potential to modernise the sector, allowing farmers to produce greater and more reliable yields and participate in a larger part of the value chain. Without adequate attention to access, the transition risks excluding the agricultural sector and the many poor groups who depend upon it. It is also imperative to ensure that land allocation, use and management gives adequate protection for the ecology on which the sector relies.

The Oxford Policy Fellowship is collaborating with the Rockefeller Foundation to support ending energy poverty and the transition to renewables in Sierra Leone and Malawi. EY was commissioned by the Oxford Policy Fellowship to conduct a review of Sierra Leone's legal framework to assess the extent to which it supports the renewable energy transition.

We combined EY's international expertise and experience with Sorie & Bangura's detailed local knowledge to analyse the legal framework from a practitioner's perspective. The review considered the strengths and weaknesses of Sierra Leone's legal framework in the context of the transition to renewables, looking at the electricity sector specifically, the investment climate generally, and laws which protect Sierra Leone's social and environmental considerations – see Figure 4 below.

Although this was mainly a desk review – extensive consultation with stakeholders was beyond its scope – Sorie & Bangura did speak with a number of government officials for up-to-date perspectives. For further work, more systematic consultation of **key stakeholders such as government ministries, departments and agencies, industry participants and consumers (or would-be consumers) would provide valuable additional insight.**

Figure 4: Review of the legal system by sector



Legal recommendations

We identified ten areas where legal changes – whether enacting new legislation or regulation, or amending existing laws – could support the renewable energy transition. Several of these relate to the general investment climate in Sierra Leone, and apply equally to traditional energy or other infrastructure projects. The three recommendations below speak specifically to the renewable energy transition.

- **Differentiate incentives for renewable and non-renewable energy projects.** Sierra Leone currently provides an exemption on import duties for certain solar PV products – other than this, the incentive regime does not distinguish between renewable and traditional energy sources. Designing and developing an incentive regime that specifically promotes renewable energy (over non-renewable energy) will help to encourage the investment needed for the renewable energy transition.
- **Adopt regulations for small power producers.** Current regulations require power producers to have more than one customer. Adopting regulations focusing specifically on small power producers, and removing this restriction, could open up the market for renewable energy supply to industrial or agricultural users without reliance on the grid.
- **Adopt a new renewable energy law.** Renewable energy is generally dealt with under the same legislative regime as traditional (non-renewably sourced) energy. This means the legislation is not suited to the renewable energy transition (for example, environmental impact assessments are geared towards large-scale, heavily polluting projects and may be excessively burdensome for clean energy such as solar). Setting out a clear framework for renewable energy projects via a renewable energy act would send a clear message of support for the renewable energy transition.
- **Promote/facilitate ministerial collaboration.** An integrated approach to rural development will guard against rural populations being excluded from gaining access to renewable sources of energy. To achieve this integration, it is essential that there is sufficient communication amongst all relevant MDAs, most importantly between the

Ministry of Energy, State House, Ministry of Finance and Economic Development and the Ministry of Agriculture, Food Security & Forestry.

Reflections and next steps

Our legal review offers a fresh perspective in considering a country's readiness for the transition to renewable energy. It is a first step in considering adjustments to the legal framework required to ensure an effective renewable energy transition in Sierra Leone, and we hope that it will inspire increased focus on the legal and capacity aspects of the energy transition process in Sierra Leone and elsewhere.

The review highlighted the critical role of legislation and regulation in the transition process. The need for a renewable energy act, formal titled for land ownership and repealing subsidies for fossil fuel power generation are all examples of the essential legal steps that need to be taken in order to facilitate the transition.

In addition, successful, **sustainable change is only possible with political sponsorship**. Political will makes the difference between recommendations being adopted on paper alone, and genuine changes in the environment for renewable energy in Sierra Leone. The Government of Sierra Leone has shown strong commitment to the transition in its policy statements notably with its Medium Term National Development Plan. Policy statements alone do not suffice – change requires resource allocation and coordination of the various stakeholders.

Finally, change needs to be bottom-up as well as top-down: changes in legislation and regulation need to be accompanied by **support to develop relevant stakeholders' capacity to implement them**, to avoid changes being on paper only.

The Oxford Policy Fellowship and its Fellows can address some of the immediate legislative and capacity constraints facing the government. Capacity limitations, if not addressed, are likely to constrain the ability of government to bring about the requisite legislative and regulatory changes. Oxford Policy Fellowship Fellows with international experience in the energy sector can be deployed to work with government counterparts, not only to develop legislative changes, but also to support set up rigorously vetted and appropriately structured projects, and to bring working practices to develop the capacity of their host departments.