THE INTERNATIONAL REC STANDARD

Country Assessment Report

Country/Region name:

Burkina Faso is situated in West Africa; bordered by Mali, Niger, Benin, Togo, Ghana and the Ivory Coast. It has a population of over 20 million and a GDP worth $15.746 billion[1]. It is a rapidly developing economy with a growth rate of 5.7%.

Generation and demand: (type, MW, TWh)

As of 2019, Burkina Faso had an installed electrical capacity of 386.79MW[2], with figure 1 depicting a breakdown per technology for both existing (2017) and future (2025) capacity. Thermal technology contributes over half of the nation's installed capacity, mainly through HFO (heavy fuel oil) and diesel. Burkina Faso also relies heavily on imports, accounting for over a quarter of the nation's installed capacity.

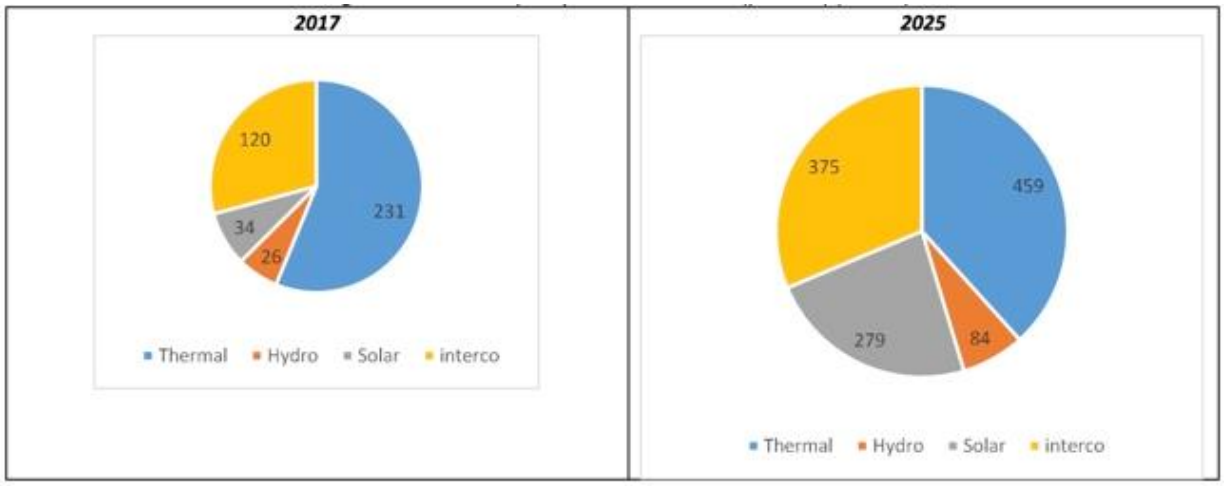


Figure 1. Existing (2017) and projected (2025) installed capacity per technology[4].

Figure 2 highlights the growth in Burkina Faso's installed capacity over the last 5 years. As depicted, growth in new capacity has been moderate, with Solar PV the only technology registering significant growth, increasing 87% from 2014 to 2019. Renewable energy capacity is expected to grow significantly over the next 5 years and share a third of overall installed capacity, mainly through solar PV. Burkina Faso's reliance on imported electricity is also projected to rise and compete with domestic thermal generation.

[1] World Bank (2020) Available at: https://data.worldbank.org/country/BF.
[2] ARSE (2020) Available at: https://www.arse.bf/IMG/pdf/rapport_arse_2018.pdf.

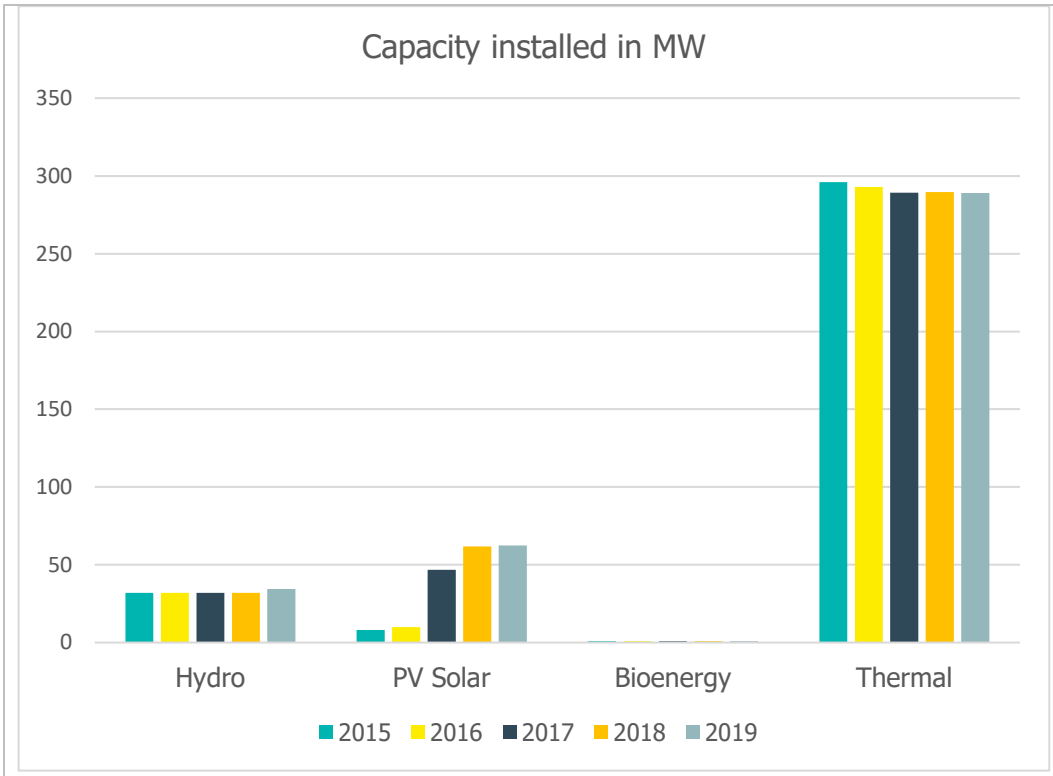


Figure 2. Installed capacity per technology between 2014 and 2019[2].

Burkina Faso has one of the lowest rates of electrification in the world at just 19%, with only 3% of the rural population having access to electricity[3]. However, electricity demand is increasing at around 10% annually (see Fig. 3), with Burkina Faso looking to invest in renewable energy and cheap imports to cover their needs in the future and increase electrification, particularly amongst rural communities[4].

[3] Sustainable Energy for All (2020) Available at: https://www.se4all-africa.org/seforall-in-africa/country-data/burkina-faso/.

[4] World Bank (2019) Available at: http://documents1.worldbank.org/curated/en/889901551115559831/pdf/Concept-Project-Information-Document-PID-BURKINA-FASO-ELECTRICITY-ACCESS-PROJECT-P166785.pdf

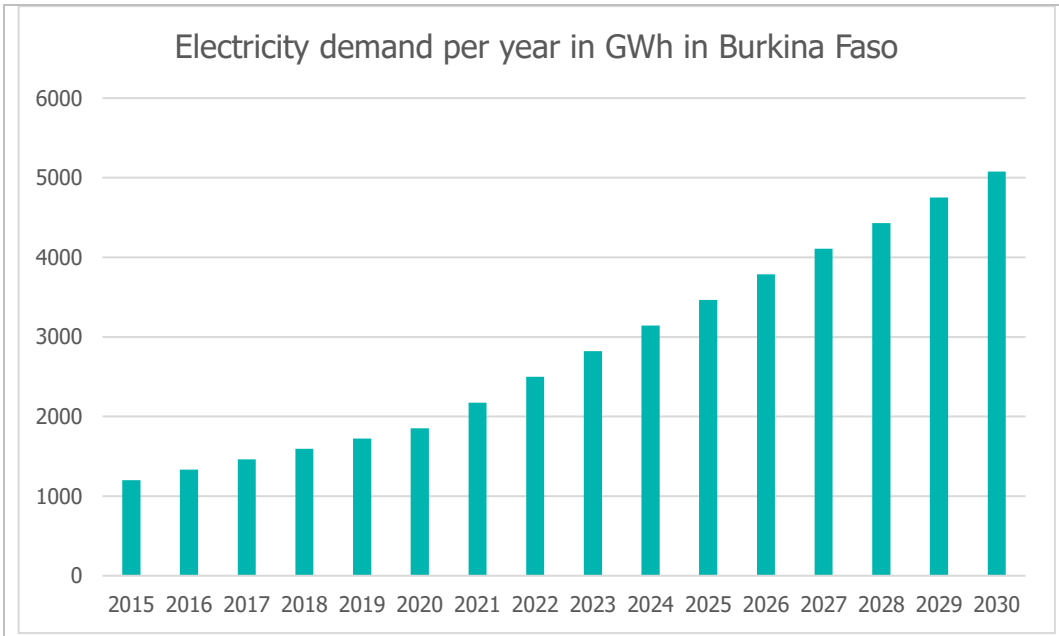


Figure 3. Historical and forecasted demand for electricity in Burkina Faso[5].

RE Market Potential:

Like much of West Africa, Burkina Faso presents significant potential for renewable energy development, particularly from solar. Taking advantage of these clean energy resources would not only increase electrification in the region, but also reduce the nation's dependence on imported energy resources. Increasing renewable development would subsequently increase the nation's energy security, which is currently susceptible to macro shocks because of fluctuating fossil fuel prices.

34.5[2] MW of hydropower has already been installed, with 1,100 MW worth of potential hydropower also identified. However, unreliable precipitation may thwart future development of hydro[6]. Solar energy represents the most promise across all renewable options, with solar irradiations levels averaging 5.5kWh/m2 per day across the year.

Technical potential per technology (MW)[7]:

- Small hydro: 38 MW
- Solar CSP: 0
- Solar PV: 82,556
- Biomass: 1,075
- Wind: 9,881

Electrical interconnection and import/export:

[5] IRENA (2018) Available at: https://www.connaissancedesenergies.org/sites/default/files/pdf-actualites/electricite-afrique-ouest.pdf.

[6] Moner-Girona, M., K. Bodis., B. Korgo., T. Huld., I. Kougias., I. Pinedo-Pascua., F. Monforti-Ferraio. and S. Szabo (2017) "Mapping the lest-cost option for rural electrification in Burkina Faso", *European Commission Joint Research Centre.*

[7] IRENA (2018) Available at: https://www.irena.org/media/Files/IRENA/Agency/Publication/2018/Nov/IRENA_Planning_West_Africa_2018.pdf.

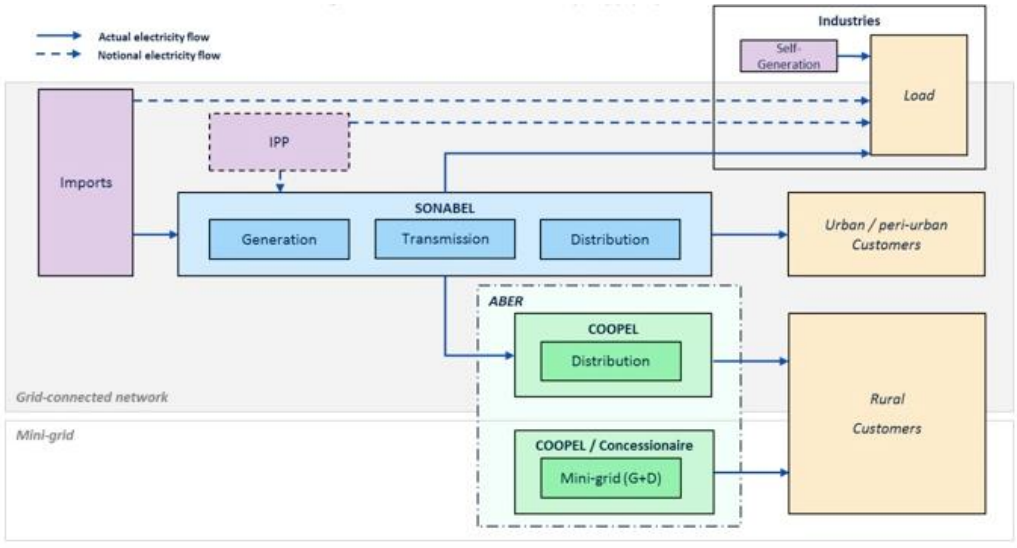
Burkina Faso is a member of the WAPP (West African Power Pool) and has direct electrical transmission between Ivory Coast and Ghana. It is interconnected with the Ivory Coast through a 225 kV transmission line and Ghana through a 330 kV transmission line[4]. The latter was commissioned in 2018 with the support of French-based 'Eiffage Énergie Systèmes'[8]. In 2019, an agreement was reached for a large-scale interconnection project called "Dorsale Nord", or "North Ridge". The 880km project of high voltage lines from Birnin Kebi, Nigeria to Ouagadougou in Burkina Faso via Niamey, Niger will have a link to the Benin Network. The "Inter-zonal Transmissions Hub Sub programme", Burkina Faso will also become electrically interconnected with neighbouring Mali[9].

Historical support or development of renewables in the country/region:

Burkina Faso scored '100' in RISE's (Regulatory Indicators for Sustainable Energy) assessment of their legal framework for renewable energy, citing its ability to allow private sector involvement as a key component[10]. Despite this, the World Bank suggests there is a poor enabling environment for renewables[4] and more support mechanisms such as subsidies/incentives/tax exemptions are required to stimulate renewable development.

Electricity market structure:

The electricity market structure is largely controlled by the vertically integrated utility company SONABEL, which has a monopoly on the transport of energy resources. Following recent reforms, SONABEL no longer has a monopoly over the generation, distribution and import/export activities of electricity. This marks Burkina Faso's increasing ambition to liberalise the power sector to create more competition, improve efficiency and increase installed capacity. The schematic diagram highlighted in Figure 4 represents the latest structure of Burkina Faso Burkina Faso's electricity sector.



[8] Eiffage (2018) Available at: https://www.eiffage.com/en/home/media/actualites/area-news-block__inner/liste-dactualites-eiffagecom/6496.html.

[9] Infrastructure Consortium for Africa (2016) Available at: https://africa-energy-portal.org/sites/default/files/2018-10/Regional_Power_Pools_report_April17.pdf

[10] RISE (2020) Available at: https://rise.esmap.org/country/burkina-faso.

Figure 4. Burkina Faso Electricity Market Structure (World Bank 2019).

2018	**Power generation in MWh**		**Share per actor**	
	SONABEL	IPP	SONABEL	IPP
Thermal	875,174	0	100%	0%
Hydro	91,447	0	100%	0%
PV Solar	54,092	0	100%	0%
Bioenergy	0	124	0%	100%
Total	1,020,713	124	99.988%	0.012%

Table 1. Ownership of Power Generation (2018).

2019	Power generation in MWh		Share per actor	
	SONABEL	IPP	SONABEL	IPP
Thermal	588,100	149,549	80%	20%
Hydro	105,317	0	100%	0%
PV Solar	58,840	0	100%	0%
Bioenergy	0	0	0%	100%
Total	**752,257**	**149,549**	**83.417%**	**16.583%**

Table 1. Ownership of Power generation (2019).

Description of renewables support mechanism:

Article 57 - "The production and import of renewable energy materials and equipment benefit from fiscal and customs incentives."

Article 58- [11]"Self-producers who have surplus production benefit from a buy-back privilege under conditions defined by decree issued by the Council of Ministers".

Article 68 - "Producers of energy produced from biomass, excluding wood and charcoal, benefit from favourable and incentives tax measures."

Responsible government department: (include key contacts)

Ministry of Energy are responsible for the development of policy, planning, management of energy infrastructure and general supervision of the electricity sector.

SONABEL is the state-owned, vertically integrated utility with a monopoly on the transport of electricity and formerly the generation, and distribution, which have recently opened up to the private sector. Production Manager: [redacted].

[11] Available at: https://lavoixdujuristebf.files.wordpress.com/2018/02/loi_014-2017_portant_reglementation_gle_du_secteur_de_l_electricite.pdf.

ARSE (Regional Authority for the electricity Sector) regulates the electricity sector, protects the interests of end-users, promotes competition and arbitrates all disputes between energy market players. Director of Economics and Pricing Service: [redacted].

ABER is the Rural Electrification Agency which is mandated to promote greater access to electricity in rural parts of Burkina Faso.

ANEREE is a government agency that is charged with controlling, overseeing and promoting both renewable energy and energy efficiency in the country.

SONABHY is a state-owned utility company with control over imports and storage of all fossil fuel products.

COOPELs are electricity cooperatives from the Electrification Development Fund (FDE). They provide local units for the production and distribution of electricity; they are at the forefront of its "Electricity for all" program[12].

IPP (Independent Power Producers) are qualified operator carrying out electrical energy production activities, all of which their production is injected into the network and which does not perform electrical energy transmission or distribution functions on the territory covered by the network where it is installed.

Local authorities are responsible for participating in the development of the municipal and regional master plan for electrification; to grant the concessions and to manage public lighting among other utilities[12].

Existing/Planned energy legislation: (is there a CPO)

Law 15-2001/AN (2001)
Law revision 060/98/AN (2004)
Law 027/AN1 (2007)
} SONABEL and SONABHY opened up to the private sector[6].

Decree no. 2014-636 (2014) – details the guidelines for granting concessions, licensing and other contracts for power generators.

Law 0xx/ANxx (2017) – power generation and distribution are further liberalised as SONABEL's single buyer status is annulled. However, the law is pending enforcement.

Environmental legislation for RE:

Decree 2001-342/PRES/PM/MEE (2001) [13]established the scope, content and process for conducting environmental impact assessment. Amended by law No. 006-2013/AN (2013) to include the necessary procedures for undertaking ESIA's (Environmental and Social Impact Assessment).

[12] National Assembly of Burkina Faso (2017) Available at: http://extwprlegs1.fao.org/docs/pdf/Bkf181529.pdf.
[13] World Bank (2017) Available at: http://documents1.worldbank.org/curated/fr/970061513479640534/pdf/BURKINA-FASO-PAD-11212017.pdf.

Decree No 2015-1187 (2015) defines the scope, contact and processes for conducting SESA's (Strategic Environmental and Social Assessment).

Existing/Planned energy certificate systems: (purpose, extent)

There is currently no mechanism to claim for use of renewables in Burkina Faso.

Extent of engagement with government:

Potential contact pending from [redacted].

Response from Government in relation to attribute tracking systems:

N/A.

Demand-side market potential or strategic nature of market development:

Origo, a consultancy based in France helping companies and communities access renewable energy contacted I-REC services to develop the I-REC market in West Africa. Origo has registered an increasing demand for RECs from multinationals based in West Africa. As many of these companies have subsidiaries based in Africa, they will require I-RECs to meet their renewable energy targets, with many multinationals having already signed up for the RE100 initiative. The presence of I-REC in West Africa will help stimulate renewable energy growth in a region renowned for one of the lowest electrification rates in the world, despite its vast potential.

Distribution companies.	Presence in West of Africa
Decathlon	Senegal, Ivory Coast, Ghana
Colruyt Group	Senegal, Mali.
Unilever	Ghana, Nigeria
Service companies	**Presence in West of Africa**
Allianz Group	Ivory Coast, Senegal, Ghana, Nigeria.
AXA	Ivory Coast, Senegal, Ghana, Nigeria.
JCDecaux	Ivory Coast, Nigeria.
La Poste	Burkina Faso
PwC	Ghana, Ivory Coast, Liberia, Sierra Leone, Guinea, Gambia, Nigeria, Cape Verde
Industrial sector companies	**Presence in West of Africa**
3M	Nigeria
AB InBev	Ghana, Nigeria
Ajinomoto Group	Ivory Coast, Nigeria
Apple	Ivory Coast.
AstraZeneca	Nigeria
Coca-Cola European Partners	Nigeria, Gambia, Ghana, Sierra Leone, Liberia.
Diageo	Nigeria, Ghana
Givaudan	Ivory Coast, Nigeria

Google	Ghana, Nigeria, Senegal.
Nestle	Ghana, Nigeria, Senegal, Ivory Coast.
P&G	Ghana, Nigeria, Senegal
SAP	Nigeria

Table 1. Multinationals with subsidiaries based in West Africa who have signed up to the RE100 initiative.

Analysis of political disruptions or market risks:

Since the Burkinabé uprising in 2014 which ultimately led to an unprecedented general election, the political climate in Burkina Faso has been relatively stable[14]. However, the security situation has proven more volatile, with a recent uptick in terrorist activity. Most notably, the government and its representatives in the North and East Burkina Faso have been targeted by groups in recent years[4]. In response, the government has increased military and security spending to combat terrorism as it continues to threaten the socio-economic prospects of Burkina Faso, particularly public finance.

Analysis of regulatory risks including linkages with carbon markets and support systems:

Two carbon allocation systems exist in the form of Verra and Carbon Footprint. Both operate on a voluntary basis and issue carbon-based credits as opposed to RECs. Neither organisation have carbon compensations projects located in Burkina Faso and is therefore not expected to conflict with the introduction of I-REC.

Current environmental reporting in energy:

Environmental reporting in the power sector is conducted by the national environment protection agency (BUNEE). It is the responsibility of BUNEE to review and approve environmental impact assessments, audits and instruments[13].

Mechanisms in place to support the reliable verification and issuance of I-RECs:

Public records of electricity output are available on the ARSE's website to support the reliable verification and issuance of I-RECs for any future Issuer.

Local organizations of importance and their opinion on local I-REC market development:

SONABEL would welcome the introduction of the I-RECs to Burkina Faso.

Any other relevant information:

Report Prepared by	Travis Caddy (I-REC Services)

[14] ADF (2018) Available at: https://www.afdb.org/fileadmin/uploads/afdb/Documents/Boards-Documents/BURKINA_FASO_-_Energy_Sector_Reform_Support_Program_EN.pdf.

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