



Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 09-Apr-2021 | Report No: PIDA31110

**BASIC INFORMATION****A. Basic Project Data**

Country Benin	Project ID P173749	Project Name Benin Electricity Access Scale-up (BEAS) Project	Parent Project ID (if any)
Region AFRICA WEST	Estimated Appraisal Date 21-Apr-2021	Estimated Board Date 14-Jun-2021	Practice Area (Lead) Energy & Extractives
Financing Instrument Investment Project Financing	Borrower(s) Republic of Benin	Implementing Agency Ministry of Energy	

Proposed Development Objective(s)

The PDO is to increase access to electricity services for households, enterprises, and public facilities

Components

Component 1: On-grid electrification

Component 2: Policy and regulatory actions to implement the national electrification strategy and related investment programs

Component 3: Technical Assistance and Implementation Support

PROJECT FINANCING DATA (US\$, Millions)**SUMMARY**

Total Project Cost	200.00
Total Financing	200.00
of which IBRD/IDA	200.00
Financing Gap	0.00

DETAILS**World Bank Group Financing**

International Development Association (IDA)	200.00
IDA Credit	200.00



Environmental and Social Risk Classification

Moderate

Decision

The review did authorize the team to appraise and negotiate

Other Decision (as needed)

B. Introduction and Context

Country Context

- 1. Benin is a lower-middle income country with significant economic growth but persistent poverty levels.** Bordered by Togo, Nigeria, Burkina Faso, and Niger, Benin has a 121-kilometer-long coastline on the Gulf of Guinea and a population of close to 11.5 million (2018) spread over 114,760 km² of land. Despite being the 4th fastest growing economy in Sub-Saharan Africa (SSA) with growth averaging 6.7% in 2017-2019, poverty remains high at 46% in 2018. The country's high population growth rate (3.5% per year over the previous decade) is an added challenge in increasing GDP and reducing the poverty rate, but despite that, Benin reached low middle-income status in early 2020 for the first time in its history.¹ However, the economic shock of the COVID-19 pandemic is likely to result in a regression to low-income status.
- 2. The Government of Benin (GoB) has oriented its development strategy toward the acceleration of structural transformation for sustained and inclusive high growth.** Benin's structural transformation process is constrained by an unproductive agriculture sector, a small manufacturing sector and an informal services sector. Aiming to reverse these trends and achieve the Sustainable Development Goals (SDGs) by 2030, government policies have put renewed emphasis on enabling private sector investment with initial reforms focused on improving the business climate, strengthening governance and fiscal management, and enhancing social service delivery. More recently, GoB has turned its attention to supporting investments in the development of productivity-enhancing infrastructure. Benin will hold a national election on April 11th. The incumbent party is currently expected to be re-elected and there is low risk of violence disrupting the vote.
- 3. Prior to the COVID-19 outbreak, economic growth in Benin was buoyant.** In 2019, real GDP growth reached 6.4% despite Nigeria's unilateral border closure that weighed down on trade and growth. This acceleration was mainly driven by booming cotton production and strong construction and port activity following a series of reforms that improved port management and facilitated trade. As the two

¹ World Bank Data, 2020, <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>



economies are closely linked, Nigeria's decision to unilaterally close the shared border in August 2019² reduced the annual real GDP growth by 0.3% in Benin, but this was cushioned by the better-than-expected performance in the first half of the year. In 2019, the fiscal deficit declined due to continued effort on domestic revenue mobilization and debt-to-GDP stabilized for the first time in five years.

4. **Despite steady, robust economic growth over the past two decades, poverty in Benin remains widespread owing to limited growth in per capita terms (only 1.6% on average during 2006–16).** While the poverty levels remain high, the overall level is declining. World Bank estimates suggest that US\$1.9 a day (2011 PPP) poverty declined from 50% in 2015 to 46% in 2018. Non-monetary poverty indicators have improved over this period as well. Inequality is estimated to be moderate based on consumption aggregates, with a Gini index of 48% in 2015. Female-headed households experience lower levels of poverty (28% compared to 38% for male-headed ones) but comprise only 23% of all households and generally women suffer from a lack of economic opportunity and are under-represented in high-level decision-making positions. The education and health sectors account for a significant share of public expenditure (23% and 7%, respectively, on average). Greater public spending efficiency and a more equitable geographical distribution of resources would pave the way for lower poverty rates and more inclusive growth.

5. **Benin has a Gender Inequality Index (GII) of value 0.613, ranking it 148 out of 162 countries in the 2018 index and below the Sub-Saharan average of 0.573.** The GII reflects gender-based inequalities in three dimensions – reproductive health, empowerment, and economic activity and indeed in Benin only 7.2 percent of parliamentary seats are held by women, and 18.2 percent of adult women have reached at least a secondary level of education compared to 33.6 percent of their male counterparts. In addition, economic opportunities are less accessible to women with their participation in the labour market at 69.2 percent as compared to 73.3 for men.³

6. **Benin has very low greenhouse gas emissions but is highly vulnerable to the impacts of climate change.** Benin accounts for 0.05 percent of global emissions but is ranked 168th out of 188 as less resilient countries in terms of its vulnerability and readiness to climate change impact in Notre Dame Global Adaptation Initiative (ND-GAIN)'s 2018 country index.⁴ The climate and disaster risk screening indicate that Benin has a high risk of river and urban floods, water scarcity, extreme heat and wildfires.⁵ An increase in the frequency and severity of extreme weather events would inflict a heavy toll in human lives and welfare, with a high risk of damage to the country's scarce and valuable capital. In addition, mean annual temperature is projected to rise by over 2°C by mid-century.⁶ The poorest, marginalized and most vulnerable households and communities will be hit the hardest, as income and health shocks will drive them deeper into poverty. Infrastructure assets including electricity transmission and distribution network can be vulnerable to both chronic and acute climate hazards. According to the World Bank's

² Nigeria, one of Benin's main economic partners (40 percent of total exports in 2018), closed its land border in August 2019 severely impacting informal trade (including re-export) and tax revenue collection.

³ http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/BEN.pdf

⁴ Notre Dame Global Adaptation Initiative Country Index <https://gain.nd.edu/our-work/country-index/rankings/>

⁵ <https://thinkhazard.org/en/report/29-benin>

⁶ <https://climateknowledgeportal.worldbank.org/country/benin/climate-data-projections>



Lifelines report, the cost of disruption to power sector due to natural shocks was about 2.17 percent of GDP in 2019.⁷

COVID-19 crisis

7. **Benin was among the first hit by the pandemic in SSA but has managed to avoid a major outbreak of COVID-19.** The first known COVID-19 case was reported in March 16, 2020. By the end of March, the country had recorded fewer than 100 cases, but swift containment measures were immediately put in place to contain and mitigate the spread of the virus. These measures were lifted by mid-May. The COVID case count in Benin has mostly remained controlled, with very few new reported cases between August 2020 and February 2021. However, following an increase in COVID cases across SSA, Benin has seen an outbreak since February that has led to the highest reported daily new cases (479 on 15th February). There has been a total of 6,071 confirmed cases (75 COVID-19 deaths) as of March 5th, 2021.⁸ The number of cases per million people remains low (51).

8. **The COVID-19 crisis has compromised recent economic and social gains and exposed the vulnerabilities of Benin's growth model.** Measures to contain the spread of the pandemic impaired commerce, transport, and hospitality-related activities and exposed the country's economic reliance on Nigeria and the concentration of exports in traditional products like cotton and cashew nuts (the share of agriculture in the GDP remains stable at 25 percent). Recognizing the economic threat posed by COVID-19, the government introduced a National Response Plan that went beyond the containment of the health crisis and provided assistance to mitigate the economic impact of COVID-19 on private consumption and investments through a mix of cash transfers, delayed payments for utilities, temporary tax exemptions for targeted groups, deferred taxes, credit to small business, and other measures (see Annex 7).

9. **Despite the global recession, real GDP growth in Benin only slowed to 2 percent in 2020.** Benin is one of only four countries in west and central Africa countries to maintain a positive real GDP growth rate in 2020.⁹ The fiscal balance deteriorated due to large counter-cyclical fiscal spending and lower tax revenues. The fiscal deficit (including grants) significantly widened, from 0.5 percent of GDP in 2019 to 5.1 percent in 2020, as authorities turned to counter-cyclical fiscal spending to counter the crisis. The ambitious health and socio-economic response plan amounted to 2.7 percent of GDP. In parallel, subdued demand, combined with the adverse impact of the border closure, reduced total revenues (driven by lost customs earnings). The current account deficit (CAD), including grants, widened from 4.0 percent of GDP in 2019 to 4.6 percent in 2020. Despite the strong cotton production (Benin was the major exporter in West Africa), exports have been hit by declining commodity prices and lower re-export activities.

COVID-19 recovery

7 "Hallegatte, Stephane; Rentschler, Jun; Rozenberg, Julie. 2019. *Lifelines: The Resilient Infrastructure Opportunity*. Sustainable Infrastructure; Washington, DC: World Bank. © World Bank. <https://openknowledge.worldbank.org/handle/10986/31805> License: CC BY 3.0 IGO."

⁸ Africa CDC Dashboard <https://africacdc.org/covid-19/>

⁹ World Bank Group, *West and Central Africa Update to the Board 2021*, pg 11



10. **There is reason for optimism that Benin will escape the worst downsides of the COVID crisis.** Benin is expected to recover gradually, with growth rebounding to 5.0 percent in 2021, and progressively reaching 6.5 percent in 2023. Private consumption and exports should drive the recovery, pushed by higher commodity prices, and positive growth in Nigeria, which reopened its border with Benin in December 2020. In per capita terms, however, Benin will not achieve pre-COVID 19 levels in the next two years given its population growth and growth remaining below potential.
11. **The fiscal deficit (including grants) is expected to gradually decrease as authorities revert to fiscal consolidation by reigning in recurrent spending.** As revenues also bounce back, the fiscal deficit will reach the WAEMU convergence criteria of 3 percent of GDP in 2022. The deficit is expected to be increasingly financed by non-concessional borrowing. On January 2021, Benin raised EUR 1 billion (5.7 percent of GDP) in Eurobonds. Part of the proceeds will serve to rollover the 2019 debut Eurobond and improve Benin's debt servicing capacity. Still, increased exposure to commercial borrowing may raise vulnerabilities linked to low domestic revenue collection. The public debt ratio is projected to reach a peak at 46.4 percent of GDP in 2021, before gradually declining. On February 11th Fitch increased Benin's outlook rating from 'stable' to 'positive', making it the first country to receive an upgrade since the beginning of the COVID crisis.¹⁰
12. **World Bank estimates suggest that poverty in Benin will continue its long-term trend of declining as the country recovers from the crisis.** Despite increasing slightly in 2020 to 45.9 percent, as a result of the slowdown in per capita growth, the \$1.9/day PPP poverty headcount rate is expected to decrease to 42.5 percent in 2023, while the \$3.2/day PPP poverty rate declines from 72.8 percent in 2020 to 69.8 percent by 2023. The recent acceleration in the pace of poverty reduction led by growth in agriculture could be compromised by any resurgence of the COVID-19 pandemic or other border shocks.
13. **COVAX administered first vaccines in west Africa March 1st but uncertainty remains about the timeline for vaccination in Benin.** Government coordination will be required to support the logistics of a vaccination campaign. The COVID-19 outbreak in Benin remains active and its trajectory may worsen before the country is fully vaccinated, bringing urgency to the vaccination campaign.
14. **Benin's outlook is also subject to risks beyond COVID19.** Tighter-than-expected financial conditions in international markets and additional tensions in international trade may put pressure on financing the current account deficit. Benin is also exposed to climate shocks (floods, droughts and associated health hazards) which could affect key sectors such as agriculture. Increased security threats spilling over from the Sahel region could also threaten growth.
15. **In Benin, the Government Action Plan (GAP), 'Revealing Benin', for 2016-2021 establishes GoB priorities for economic and social development and provides policy guidance for economic stimulus for the country's COVID-19 recovery.** The GAP guides government action and is used to define ministries' activities and allocate the national budget through its three pillars, which are themselves split into seven key priorities. The second pillar, structural economic change, has a key priority of improving economic growth. The energy sector is considered a strategy sector for achieving this priority. Accordingly, the GAP establishes an objective of developing a largely independent and competitive energy system and providing reliable and high-quality electricity to homes, small and medium enterprises and agricultural across Benin.

¹⁰ <https://www.fitchratings.com/research/sovereigns/fitch-revises-benin-outlook-to-positive-affirms-at-b-11-02-2021>



The electricity sector action plan is based around four flagship projects that have been estimated to require approximately US\$1.3bn in financing with an estimated benefit of creating 9,100 new jobs.

16. **Supporting the investment program of the GAP will not only support Benin’s economic recovery and job creation, it will also ensure the recovery is framed to ensure a more sustainable and equitable economy.** Expanding energy access is a key driver of long-term economic transformation, job creation and human development. Short-run impacts include social benefits, such as lighting for reading and enhanced security. With electrification business opportunities become available for micro, small, and medium-sized enterprises. Impacts rise in the medium term as complementary factors are introduced and households and businesses adjust to electricity’s potential. Education and health outcomes may improve through the electrification of schools and clinics. Economic impacts grow as electricity becomes increasingly available as a strategic input for industries and services. Electrification is central to ensuring Benin’s economic recovery is inclusive and supports the objective of economic structural transformation. Delaying electrification has a high opportunity cost because the lack of electricity impedes modern technology adoption and lowers the quality of delivery of services such as health care, education, and other public services.

17. **The relationship between the electricity sector and the country’s economic competitiveness can be seen in two key World Bank indexes.** The *Regulatory Indicators for Sustainable Energy* (RISE) report measures countries’ policy and regulatory framework for reaching SDG 7 of universal access to affordable and clean energy. On the RISE access to electricity pillar Benin scores 63%, placing it in the moderate range for access-deficit countries. The energy access sub-indicators that Benin scores low on include the scope of the officially approved electrification plan, framework for grid electrification, consumer affordability of electricity, and utility transparency and monitoring. The high cost of getting electricity in Benin is further reflected in the *Doing Business* report (2019), which identifies the cost of getting electricity as one of the main barriers to an efficient investment climate in Benin. Benin ranked very low (178 out of 190) with respect to the cost of getting electricity, significantly hindering the competitiveness of the private sector (an in-depth discussion of financial barriers to grid connections can be found in the sector context section).

Sectoral and Institutional Context

18. **Access to electricity is critical to achieving the GAP’s objectives.** One of the four flagship projects for the electricity sector under the GAP is restructuring and modernizing the national operator (Société Béninoise d’Energie Electrique, SBEE) and its grid, with an objective of providing all Benin citizens with permanent access to reliable electricity service. In 2018, 42% of Benin’s population has access to electricity,¹¹ which is a lower rate than the SSA average of 47% (Figure 2). The national electrification rate masks a stark disparity between urban and rural areas. Seventy-three percent of the urban population has access to electricity, with the highest access rate in the coastal cities, such as Cotonou, and lower rates in medium urban centers where considerable proportions remain unconnected. Less than 17% of the rural population has access to electricity (Figure 3).

¹¹ All electrification data is from SE4all SDG7 tracker, 2018, <https://trackingsdg7.esmap.org/country/benin>



Figure 2: Benin's national access rate was 42% in 2018, below the average for SSA

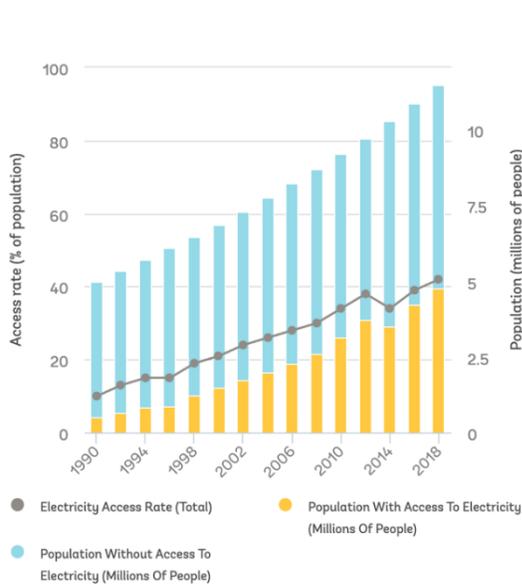
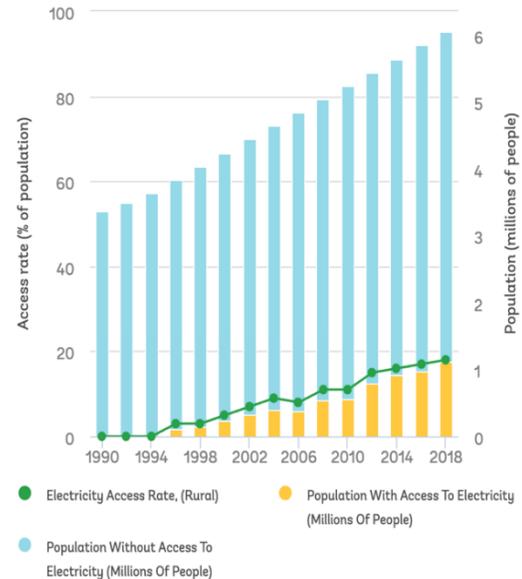


Figure 1: Benin's rural access rate was only 17% in 2018



Source: SE4all SDG7 tracker, 2018, <https://trackingsdg7.esmap.org/country/benin>

19. **Efforts to expand electricity access in Benin have struggled to match population growth due to underinvestment in the sector.** Benin has expanded electricity access by 1.7m people between 2010 and 2018, increasing the electrified population from 3.1m to 4.8m Beninois. However, in the same time period the total unelectrified population has also risen; in 2010 6.1m Beninois lacked access to electricity, but in 2018 this figure had grown to 6.7m due to population growth. SBEE has been unable to provide electricity connection to a long list of potential customers who have been waiting for an electricity connection due to a lack of an operating budget. At the same time, demand for electricity continues to increase due to increasing household consumption and population growth. Illegal and unsafe electricity connections are common but decreasing in high-density peri-urban areas of major urban centers—such as Cotonou, Porto-Novo, Abomey-Calavi, Parakou, and Natitingou. The ongoing Bank-funded ESIP is addressing part of the illegal connections and the BEAS will build on this work. Benin’s electricity access deficit is especially acute in the northern region, which has the country’s high levels of poverty. Poverty incidence in Benin tends to increase from south to north, and the three northern departments all have a poverty incidence of over 60%. This tracks with the provision of basic services, such as electricity.¹² Supporting grid connections is the most efficient way to contribute to achieving the forthcoming National Electrification Strategy (NES); previous GIS work suggests that the upper range for grid electrification is approximately 80% of the population.¹³

¹² More accurate data on this will be available following the GIS least-cost electrification expansion plan that is underway and funded through the ESMAP-funded Geospatial Electrification Planning in the Africa Region project

¹³ Based on a previous GIS-least-cost study (KTH, Electrification Pathways for Benin, 2018). This figure will be updated with a



20. **The upfront payment of connection charges is a barrier to the connection of more people especially those who are vulnerable.** Before getting connected to the grid, people are required to pay significant upfront charges and this situation has slowed down the electrification of vulnerable households in Benin. Currently, households are required to make an upfront payment of CFAF 85,000¹⁴ (US\$ 142 equivalent) to get connected to the grid. The different connections charges are presented in the Table 1. The GoB is considering the setting in place of a mechanism to remove this barrier and to facilitate the acceleration of on-grid electrification in Benin. In addition, electricity retail tariffs in Benin are above global averages, even though they are set below cost-recovery levels, mainly due to high technical and commercial losses.

Table 1: Connection charges in Benin (2020)

Type of connection	Capacity (Amp)	Connection fee in FCFA
2 wires	5-30	85,000
4 wires	10-30	130,000
4 wires	45	330,000
4 wires	50	390,000
4 wires	60	530,000

21. **In order to better support the GAP’s objective of electrification, the GoB has prepared the Benin-PROSPERE report (Programme Spécial d’Extension et de Renforcement des Réseaux Electriques du Bénin).** Benin-PROSPERE notes that with the key institutions in the energy sector facing budget deficits, the required investments for maintenance and growth of the distribution network have not materialized. The GoB therefore considers concessional finance to be necessary to reach their GAP objectives and the Benin-PROSPERE report provides an overview of current energy access activities among DPs and provides planning for future investments.

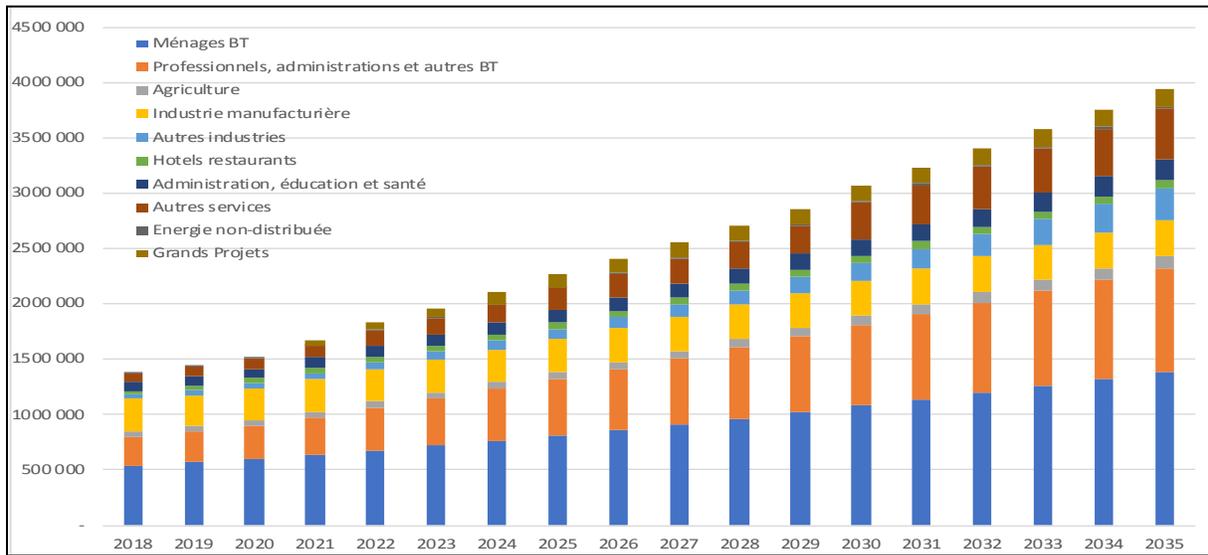
22. **Benin is facing rapidly increasing demand for electricity.** The baseline projection for annual demand growth is 6.3%. All segments of the Benin electricity sector are projected have increasing demand up to 2035, but household and commercial consumption comprise the largest and fastest growing segments (**Error! Reference source not found.**). The baseline growth scenario projects peak demand increasing from 256 MW in 2018 to 429 MW in 2025 and to 773 MW in 2035.¹⁵

Figure 3: Base case demand projection by segment (MWh)

more accurate figure when the NES is completed (October 2020) based on a more granular model but is expected to be in a similar range. This considers populations less than about 7km from the existing grid as receiving grid connections

¹⁴ CFAF 85,000 is the cost for single phase connection (1-6 kVA; 5-30 Amp) as stated in the Note de service 228-20/SBEE/DG/SG/DCC

¹⁵ Benin demand study, *Assistance Technique dans le cadre de l’appui institutionnel et du renforcement des capacités des acteurs du secteur de l’énergie au Bénin (RECASEB)*, October 2019



Source: RECASEB

23. **Benin has been developing its generation supply capacity to meet the growing demand and reduce its dependence on electricity imports.** The GAP action plan for the electricity sector has so far been primarily supported through increasing domestic generation capacity and improving the performance of the power distribution sub-sector. The Benin power sector had an installed capacity of 218 MW in 2018 (including a rental power of 100MW) with a peak demand of 258 MW and is increasing the domestic installed capacity (rental power decommissioned) to about 390MW by 2023 with an estimated peak demand of 431MW in 2025. The additional generation capacity that would be installed for the next 2-3 years includes: (i) the 120MW public plant financed by the Islamic Development Bank running on gas (already commissioned); (ii) another 146MW gas public plant under preparation following an unsuccessful development of an IPP; (iii) smaller plants of 50MW with private investment, located at Maria Gléta 2 to operate on gas; and (iv) solar generation through independent power producers (IPPs). Support for solar generation is materializing with MCC and Agence française de développement (AFD) committing to invest in 75 MW of solar PV with public finance. In addition, the GoB has started the development of the hydro project of Dogobis of 128MW. The results of the ongoing Least cost power development plan (LCPDP) will confirm these figures. SBEE has also contracted 100MW with an IPP based in Nigeria and carried over a transmission line with a capacity constraint of 600MW. The remaining gap in demand will be supplied through imports from Nigeria and Ghana (via the Togo-Beninese energy importing and transporting company Communauté Electrique du Bénin, CEB). Overall, there will be enough capacity to cover the rising demand for electricity. Moreover, the GoB has recently established a new generation company (GENCO) to adequately handle the operations and maintenance of the two public gas plants at Maria Gléta and the public solar plants under construction.

24. **Since the beginning of the GAP in 2016, a comprehensive and integrated energy strategy emerged with the support of development partners (DPs).** In 2015, the GoB signed a US\$375 million Compact in the form of a grant for the power sector with the Millennium Challenge Corporation (MCC). The majority of MCC funds are committed to modernizing the electricity distribution network by increasing reliability and lowering losses. MCC is also involved in developing the off-grid regulatory



framework and financing program. The MCA aims to strengthen SBEE, attract private sector investment, and fund infrastructure investments in electricity distribution as well as off-grid electrification for poor and unserved households. MCA currently has four projects under implementation: i) a policy reform and institutional strengthening project; ii) an electricity distribution project, which is financing an electricity dispatch and control center, as well as 50 miles of new underground cabling and the rehabilitation of over 530 miles of overhead power lines; iii) an electricity generation project, which is financing the 50MW solar IPP in Benin's north and has released solicitations to pre-qualified bidders in December 2019; iv) the off-grid electricity access project, which is supporting policy reforms and infrastructure financing for off-grid solutions.

25. **The Government adopted progressive adjustments of the electricity tariff in December 2019.** The tariff plan maintains the status quo in 2018-2019, with a 5% increase for 2020 and another 10% increase for 2021. These adjustments are needed to reflect costs to ensure the financial equilibrium of the sector and enable SBEE to gradually improve its performance and quality of service for the benefit of its customers. The increase in percentage is less for those with low consumption. SBEE's tariff adjustment results in a cumulative tariff increase of 10% for the social tranche (20kWh), 13% for the prepayment meter scheme, 15% for consumptions between 20 and 250 kWh, and about 29% for consumers consuming above 250 kWh. Government policy thus aims to preserve the poorest segments of the consumers. Regarding the 5% increase, the Government has decided not to implement it because of the impact of the COVID19 crisis and has introduced a subsidy mechanism to compensate SBEE for the gap. The GoB applied the 10% increase in January 2021 for richer consumers and it also decided to provide subsidy to some categories of customers. The GoB would need to establish and implement a differentiated subsidy policy for any tariff adjustment to effectively target the vulnerable people. A Willingness to Pay (WTP) study would need to be completed.

26. **An indicative geospatial electrification planning financed by ESMAP was completed in November 2020 and shows that by 2025 about 91% of the population in Benin would live within 7km of the grid.** The electrification scenarios developed under this study highlight the importance of an integrated electrification strategy. Grid-connection will be the least-cost option for a majority of the population in Benin as a large share of the population lives in close proximity to MV lines, but off-grid technologies are expected to play a role as well.

C. Proposed Development Objective(s)

Development Objective(s) (From PAD)

The PDO is to increase access to electricity services for households, enterprises, and selected public facilities in Benin.

Key Results

27. The project will concentrate on two key results area:
- Expanding access to grid electricity services to households
 - Expanding access to grid electricity services to small and medium enterprises and to selected public facilities.



28. The following indicators have been selected to measure progress toward the PDO:
- PDO Indicator 1: people provided with access to electricity under the project by household connections (number); of which female (percentage)
 - PDO Indicator 2: small and medium enterprises provided with new or improved electricity services implemented under the project (number); of which female-headed enterprises (percent)
 - PDO Indicator 3: public institutions (clinics, and/or schools, and/or administrative centers) provided with new or improved electricity service (Number).

D. Project Description

The project will be an Investment Project Financing (IPF) with a PBC component. It has three components as follows:

Component 1: On-grid electrification (US\$ 185 million IDA)

29. This component will finance the design, procurement of materials and construction works required to electrify all participating households and businesses in the project target areas with high population density, located within about 7 km from the existing electricity networks (in urban, peri-urban and rural areas). This component will support:

- Grid densification investments:* these are connections to households, enterprises, or public institutions that are near the existing network infrastructure of the SBEE. These connections mostly require short low voltage (LV) expansion, service drops, and meters and/or ready boards for households. The densification of the existing grid under this component will contribute to the monetization of the existing capital assets of SBEE.
 - Grid extension investments:* connections for new customers who are located within about 7km from the existing grids. These connections will require both medium voltage (MV) and LV extensions. Detailed network design for grid expansion will be informed by the comprehensive geospatial least-cost rollout plan. Least-cost technologies allowing to reach applicable levels on quality of service and safety in each type of area (urban, peri-urban, medium and low density rural) will be adopted to the largest possible extent to minimize life cycle cost of electrification projects.
30. The component will emphasize competitive procurement of main equipment (transformers, cables and conductors, poles, meters and accessories, etc.) in bulk, and separate contracts for project design and for construction and installation works to optimize effectiveness in the allocation of resources available by minimizing investment costs and, thus, maximizing the number of connections per dollar invested. The project, in line with the NEP, will use an average total investment cost per connection less than US\$1800 as a cap for the grid extension based on the experience from similar World Bank-funded projects in the region.
31. The project will cover about 1,100 localities located throughout the country in the departments of Littoral, Ouème, Atlantique, Borgou, Donga, Zou, Mono, Collines, Atacora, Plateau, Couffo, and Alibori. Based on the results of the indicative geospatial least cost electrification and on the data in the



Government electrification document (Benin PROSPERE), the project will construct or rehabilitate at least 2,000 km of MV lines and at least 4,000 km of LV lines and will add about 100,000 kVA of distribution transformer capacity. Moreover, about 150,000 households (25% of which female-headed) and about 1,000 businesses (20% of which women-led) and about 500 public facilities will be connected to the grid under the project. This Component will also finance the installation of about 20,000 public lightings in project targeted areas.

32. This Component will also finance consultancy services necessary for the review of design and the supervision of works.

Component 2: Policy and regulatory actions to implement the national electrification strategy and related investment programs (US\$ 5 million IDA)

33. This component will support the implementation of key reforms necessary for the sustainability of electrification strategy and related investment programs.

34. On the policy area, the Government will establish a policy for “connection charges” to be paid by new users to ensure that those charges do not become barriers to electrification programs (households should be connected first and start paying affordable charges) and that amounts collected are transferred to a special purpose electrification fund or equivalent to be used to accelerate electrification. This component will support the GoB to establish a mechanism for defining amount of connection charges and financing arrangements for payment by new connected households. Mechanism could imply partial or full subsidization of connection charges (for low-income rural, urban, and peri-urban households) considering the households’ willingness to pay.¹⁶

35. On the regulatory area, the component would support the Government to define optimum technical standards for design and construction of electricity distribution networks in urban, peri-urban and rural areas (including low cost technologies) to meet applicable quality of service levels in each case.

36. The Performance Based Conditions (PBCs) disbursements upon their achievement and eligible expenditures that will be adopted to incentivize the implementation of policy, and regulatory actions in the scope of this component are against the achievement of the following indicators as detailed in the Annex 3:

- Adoption by the Government of a connection charges policy (process), with disbursement linked to certified adoption of the policy and to certified progress in the connection of households (number) to the electricity grid under the project and incorporation to SBBE’s customers database
- Adoption by the Government of grid electrification norms and standards (process), with disbursement linked to certified adoption of the norms and standards and to certified progress in the construction of MV lines (km) under the project.

Component 3: Technical Assistance and Implementation Support (US\$10 million IDA)

¹⁶A Multi-Tier Framework Energy Access Assessment for Benin will be done as part of project preparation and this will include WTP data



37. This component will finance technical assistance (TA) and capacity building activities and implementation support to ME, SBEE, ABERME, and ARE to ensure project sustainability and to facilitate the monitoring of the achievement of targeted results. Preliminary areas of support, to be confirmed during appraisal, include:

- a. Support for an effective implementation of the Geospatial planning tool with capacity building
- b. Support to address gender-based barriers to electricity connection as well as the development and execution of interventions that could successfully address these. In addition, it would also develop a community awareness campaign to inform people in target areas of the benefits and costs of electricity services, as well as the payment mechanisms, procedures, and safety practices of the electrification process.
- c. Support to enhance women’s employment in the energy sector, focusing on SBEE as key stakeholder.
- d. Communication and outreach campaign that will include consumer awareness campaign with special consideration for gender issues, and customer satisfactory survey
- e. A Multi-tier Framework (MTF) assessment for energy access in Benin.
- f. A study on the potential for utility financing for consumer appliances.
- g. A Climate Change and Disaster Risk and Vulnerability Assessment, funded by AFRI-RES, will provide an assessment of vulnerability of the BEAS project’s investments to climate disaster risk. The assessment will do a climate risk assessment, site assessment and vulnerability risk analysis, and propose resilience measures that can be incorporated into the project design, including the detailed engineering design, location, and environmental management plan.
- h. Support to project implementation through the hiring of specialized consultants to support implementing agencies
- i. Hiring of an Independent verification agent (IVA) for the monitoring and verification of the achievement of PBCs under the component 2 of the project
- j. Acquisition of vehicles necessary for the supervision of works and the implementation of the project safeguard measures, as well as the purchase of office equipment. Financing incremental operating costs for the PIU.

Legal Operational Policies

	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Summary of Assessment of Environmental and Social Risks and Impacts



E. Implementation

Institutional and Implementation Arrangements

38. The preparation and implementation of the BEAS will be overseen by the Ministry of Energy (MoE), as the government entity responsible for the sector. Within the MoE, there is a Project Coordination Unit (PCU) within the General Directorate of Energy Resources (GDER) which has been set up for the preparation and implementation of projects financed by the World Bank since more than 10 years. The PCU can continue to play this role for the preparation and implementation of the BEAS. The PCU will work in close collaboration with SBEE in the procurement and supervision of the activities of the Component 1 and with the concerned stakeholders for the implementation of the Component 2.

39. In line with its responsibility for the development of the energy sector, the MoE's role would focus on the elaboration of strategy and provision of guidance, as well as overall project monitoring. SBEE will play significant roles in the densification and extension of the distribution network and the connection of new customers. The project will provide technical assistance to help the MoE to prepare and adopt important reform activities.

40. The PCU has been implementing power projects and has been acting as the responsible for the preparation, implementation, and monitoring and evaluation of World Bank-financed energy sector projects in Benin. The PCU will be the implementing entity for the BEAS, responsible for procurement, financial management, implementation of safeguard instruments, and monitoring and reporting. The PCU will be strengthened to increase its capacity to effectively implement the activities of the BEAS. Although the PCU has a good track record in implementing World Bank projects and is familiar with World Bank procedures, its capacity would need to be strengthened. Therefore, the project will recruit additional staff to strengthen its fiduciary (procurement and financial management), environmental and social safeguards, technical, etc. The PCU will mainly continue to rely on the technical inputs of the SBEE but will also promote the participation of ABERME.

41. As SBEE operates and maintains the distribution networks in the country, SBEE will be a key actor for the expansion of grid access. It will assist the PCU in the preparation of technical specifications, evaluation of bids, and supervision of works. Agreements will be prepared by the project to clarify the roles of SBEE and ABERME and other stakeholders in the implementation of the BEAS.

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