

Country Profile

BENIN



14.46 million

population (2024)



7.5%

GDP growth rate (2024)



336.7 MW

total installed capacity (2023)



35 MW

installed solar capacity (2024)

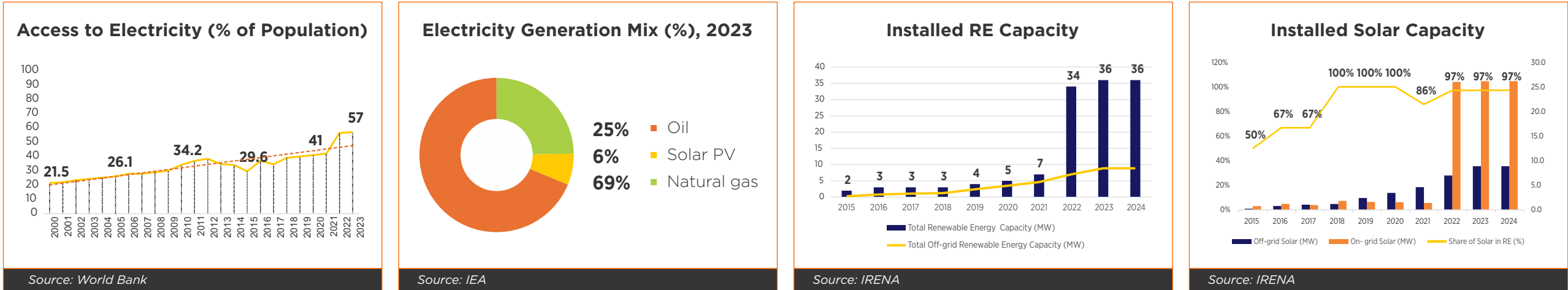


Aims to avoid 12 MT of CO₂ emissions by 2030, relative to 2016 levels



Targets renewables to become the main source of energy by 2030





KEY CHALLENGES

- Heavy dependence on electricity imports (80% of supply)
- Low rural electrification (~30%)
- **Limited grid infrastructure and high transmission losses** (~22%)
- Financing constraints for RE projects
- Vulnerability to **climate shocks and coastal erosion**

POTENTIAL OPPORTUNITIES

- Benin has **high GHI** (>5.5 kWh/m²/day), making it ideal for large-scale solar farms and distributed solar systems.
- Significant opportunity to deploy **solar-diesel hybrid mini-grids** in rural areas where grid extension is costly.
- Supported by initiatives like the Africa Minigrids Program and the OCEF (Off-Grid Clean Energy Facility).
- Integration with the **West African Power Pool (WAPP)** allows Benin to leverage regional generation capacity and reduce reliance on imports from Nigeria.

ENERGY STORAGE AND GRID INTEGRATION

- The length of **domestic transmission and distribution lines is 5620 km**, and the length of **transnational lines is 618 km**. Electricity is imported and locally generated, with SBPE managing generation and SBEE overseeing distribution nationwide

Key Policies and Framework

- **National Renewable Energy Development Policy (PONADER) 2020–2030:** This is Benin’s flagship renewable energy policy, aiming to make renewables the main source of power by 2030. It prioritizes solar PV development, rural electrification through mini-grids, and private sector participation. The policy seeks to reduce dependence on imported electricity (currently ~95%) and align with climate commitments under the Paris Agreement.
- **Electricity Code:** The Electricity Code provides the legal framework for generation, transmission, distribution, and commercialization of electricity. It promotes private sector participation, sets licensing requirements, and includes provisions for renewable energy integration and rural electrification.
- The government has a national strategy and plan for electrification, and a **target of universal access by 2030**. There is also an **O-Grid Electrification Policy (2018-2035)** to boost rural electrification.

Climate & Sustainability Commitments

- **Paris Agreement & NDC Commitments:** Benin’s Nationally Determined Contribution (NDC) under the Paris Agreement aims to:
 - **Reduce GHG emissions by 12 Mt CO₂eq by 2030** compared to 2016 baseline.
 - Focus on energy, agriculture, and forestry sectors for mitigation.
 - Promote renewable energy adoption and halt deforestation in the long term.

Investment & Financing Landscape

- **SE4ALL** granted **over USD 800,000** to **Mionw** for three solar mini-grid projects
- The **Millennium Challenge Corporation** supported **off-grid clean energy with USD 31 million (2017–2023)**
- **Federal Republic of Germany** pledged **USD 4 billion for Africa’s green energy by 2030**
- **Key investors:** African Development Bank (AfDB), World Bank Group, German Development Cooperation (GIZ), International Finance Corporation (IFC), NEoT Offgrid Africa, Millennium Challenge Corporation (MCC), Axian Energy, Sika Capital