

Country Profile

ETHIOPIA



132 million  
population  
(2024)



7.6%  
GDP  
growth rate  
(2024)



4.3 GW  
total installed  
capacity  
(March 2024)



22 MW  
installed  
solar capacity  
(2024)

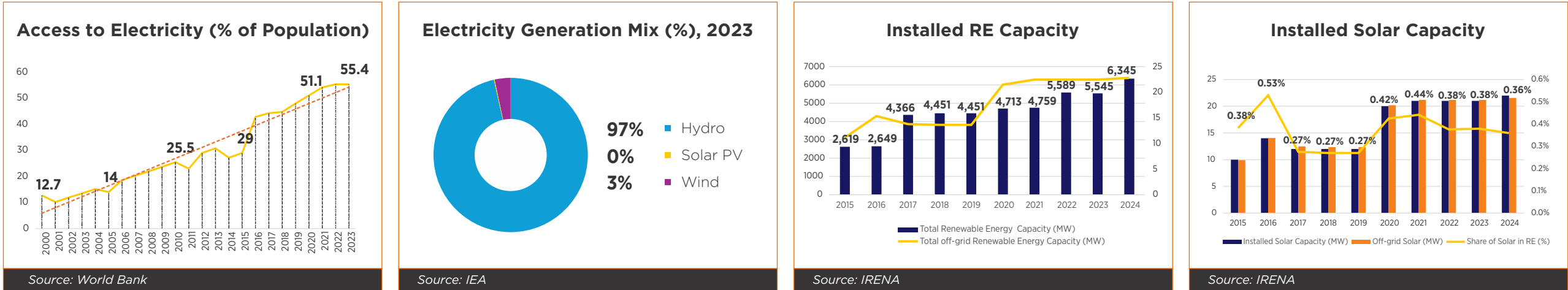


Committed to  
68.8%  
emission reduction  
below a revised BAU



Targets  
25%  
of electricity  
generation by  
non-hydro RE by 2030





KEY CHALLENGES

- **Heavy reliance on hydropower** makes supply highly vulnerable to climatic variability
- **Transmission and distribution lag behind generation growth** (e.g., GERD), creating bottlenecks for power evacuation
- **Uneven electricity access**—especially in rural and remote areas—pressures government to upgrade grids and deploy off-grid solar solutions

POTENTIAL OPPORTUNITIES

- **Vast solar resources** in eastern, southern, and central regions enable large-scale PV deployment
- **Government target of 17.5 GW by 2030** creates strong demand for utility-scale solar, hybrids, and distributed systems
- **Solar complements hydropower by supporting daytime supply**, reducing reservoir drawdown, and stabilizing output during dry seasons
- Off-grid and mini-grid solar can electrify rural communities, power schools, health centers, and support agriculture and small enterprises
- **Strengthening transmission links with Kenya, Sudan, and others opens opportunities for solar exports and regional trade**

ENERGY STORAGE AND GRID INTEGRATION

- **Hydropower reservoirs** already provide Ethiopia with inherent storage capacity, enabling flexible dispatch that can help absorb higher shares of daytime solar generation
- As solar penetration increases, BESS will be essential to manage fluctuations, protect grid stability and shift surplus generation from midday to evening peaks.
- Mini-grid and off-grid systems are increasingly deploying small and medium-scale batteries, which improve reliability and reduce dependence on diesel backup in rural communities
- Regional grid integration through the **East African Power Pool** will further support flexibility, allowing Ethiopia to trade power and use broader system balancing to manage solar fluctuations

Key Policies and Framework

- Ethiopia's national energy strategy and the **Climate Resilient Green Economy (CRGE)** framework priorities renewable energy expansion as a foundation for long-term economic growth and decarbonization
- The government has introduced **IPP programmes for solar and wind**, supported by multilateral institutions, though procurement processes continue to evolve to improve transparency and efficiency
- Policy reforms aim to strengthen the financial sustainability of the power sector, including cost-reflective tariffs and improved utility management practices, which will benefit renewable project bankability over time
- Regulations for off-grid solar and mini-grid development are increasingly supportive, encouraging private companies and development partners to expand energy access in remote regions

Climate & Sustainability Commitments

- Ethiopia's updated NDC **commits to substantial emissions reductions by 2035**, with the energy sector playing a pivotal role through renewable energy expansion and efficiency improvements
- Solar deployment supports climate adaptation by reducing dependence on river-based hydropower, which is increasingly exposed to the impacts of climate change.
- The **national climate strategy highlights renewable energy as essential for rural development, improved public services and sustainable agricultural value chains**
- Ethiopia positions itself as a **future green-energy exporter, framing hydropower-solar hybrid development** as part of its long-term low-carbon growth vision

Investment & Financing Landscape

- Ethiopia's renewable energy sector is strongly supported by multilateral partners including the **World Bank, African Development Bank, IFC, EU, GCF and other climate-focused financing institutions**
- These institutions are actively involved in **funding grid reinforcement, RE procurement frameworks and early-stage development of solar IPP projects**
- Large hydropower projects such as GERD have been financed primarily through domestic instruments, while solar and wind tend to attract blended finance and concessional loans from external partners
- Private developers are increasingly exploring the Ethiopian market, encouraged by the country's vast solar potential and long-term demand for low-cost renewable electricity