

Ethiopia Renewable Energy Market 2026-2034 | Size, Share, Analysis

Ethiopia renewable energy market reached USD 960.90 Million 2025, is projected to reach USD 2,256.09 Million 2034, a growth rate (CAGR) of 8.91% 2026-2034.

ETHIOPIA, May 19, 2026
/EINPresswire.com/ --

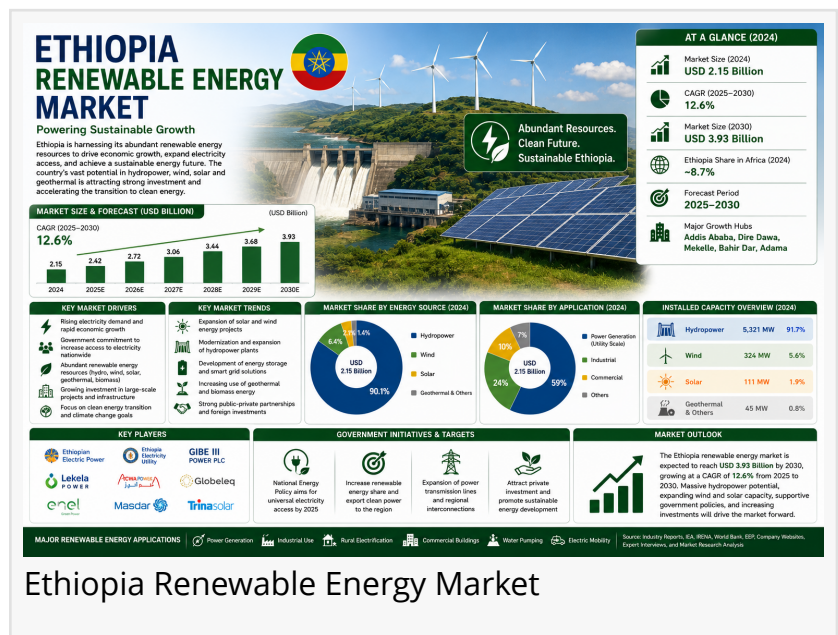
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The [Ethiopia renewable energy market](#) reached □□□ □□□.□□ □□□□□□□□ in 2025 and is projected to reach □□□ □,□□□.□□ □□□□□□□□ by 2034, exhibiting a growth rate (□□□□) □□ □.□□% □□□□□□

□□□□-□□□□. The Ethiopia renewable energy market is accelerating rapidly, anchored by the inauguration of the Grand Ethiopian Renaissance Dam — Africa's largest hydroelectric power plant at 5.15 GW that is expected to double the country's electricity output — a massive 8.4 GW wind and solar development by China's Ming Yang Smart Energy backed by an initial USD 7.47 billion investment, and the World Bank's USD 424 million ASCENT program to bring electricity to nearly six million people. The government's strategic push to diversify beyond hydropower, which currently accounts for 96% of electricity generation, is drawing unprecedented international investment into solar, wind, and geothermal energy across the country.

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The Grand Ethiopian Renaissance Dam was officially inaugurated in September 2025 as Africa's largest hydropower plant at 5.15 GW capacity; Ming Yang Smart Energy received an investment license to develop 8.4 GW of wind and solar projects across South Omo, Afar, and Somali regions; the World Bank approved USD 424 million for the ASCENT program to bring electricity to six million people; the Assela 100 MW wind farm began supplying clean energy to the national grid powering over 140,000 households; Ethiopia launched its first grid-connected solar rooftop project with bi-directional smart meters in Addis Ababa; and Ethio Telecom partnered with Huawei to launch Africa's inaugural Solar-on-Tower solution achieving a 40% reduction in diesel consumption.



Ethiopia Renewable Energy Market

ቅጠራ ማጠቃለያ Summary:

- The Grand Ethiopian Renaissance Dam, inaugurated in September 2025 at a cost of USD 5 billion, is transforming Ethiopia's energy landscape as Africa's largest hydroelectric facility with 5.15 GW of installed capacity across both powerhouses. The dam is expected to double the country's electricity production, providing massive baseload generation capacity to power industrial growth, urban expansion, and cross-border electricity exports. However, the government's new climate plan — released barely a month after inauguration — outlines ambitions to reduce heavy reliance on rainfall-dependent hydropower by accelerating investment in solar, wind, and biogas, acknowledging climate-driven drought risks to the hydropower-dominant energy system.
- China's Ming Yang Smart Energy is developing an 8.4 GW renewable energy portfolio comprising 5.4 GW of wind and 2.8 GW of solar capacity across the South Omo, Afar, and Somali regions, with an initial investment of USD 7.47 billion. A second investment tranche of USD 7.3 billion is funding green ammonia production alongside manufacturing of power transmission equipment and wind turbines domestically. This project represents a landmark shift toward large-scale private sector participation in Ethiopia's energy expansion through the independent power producer framework.
- The World Bank's ASCENT Ethiopia Program, approved in August 2025 with USD 400 million in IDA financing and a USD 24 million Denmark grant, is targeting electricity access for nearly six million people over five years. Building on the Ethiopia Electrification Program and the ADELE off-grid initiative, ASCENT is expanding on-grid connections while reducing connection costs for 480,000 low-income customers. Solar mini-grids installed by the Ethiopia Electric Utility are already providing approximately 4,000 connections and supplying electricity to around 20,000 people across 11 villages.
- The Assela 100 MW wind farm, financed by Denmark and built by Siemens Gamesa, began supplying clean energy to the national grid in May 2025, powering over 140,000 households annually. This project is strengthening Ethiopia's energy diversification strategy and demonstrating the viability of wind power as a complement to hydropower. The geothermal sector is also advancing, with Tulu Moyo Geothermal Operations, Meridiam, and Reykjavik Geothermal in talks to resume development at the Tulu Moyo site targeting an initial 50 MW by 2026.
- Ethiopia launched its first grid-connected solar rooftop project with bi-directional smart meters in Addis Ababa in June 2025. The 100 kWp system, inaugurated by the Minister of Water and Energy, allows households to both consume and feed surplus solar power back to the national grid — modeling decentralized clean energy adoption for urban areas. Simultaneously, Ethio Telecom and Huawei launched Africa's first Solar-on-Tower solution, reducing diesel consumption by 40% at telecom sites while demonstrating how vertical infrastructure can serve

dual energy and telecommunications functions.

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Artificial intelligence is increasingly transforming the Ethiopia renewable energy market, with AI-driven energy management capable of reducing operational losses by up to 20% according to the International Energy Agency, while smart grid technologies, predictive analytics, and automated load balancing systems are enhancing grid stability and optimizing the integration of diverse renewable sources across Ethiopia's rapidly expanding power infrastructure.

- የባለሙያዎች ምክር ቤት የኢትዮጵያ የአዲስ አበባ ከተማ አስተዳደር ጋር በተቃራኒ ሲሆን፡ AI-driven smart grid platforms leveraging real-time data analytics, IoT sensors, and automated control systems are enhancing grid stability across Ethiopia's expanding power network. These systems dynamically adjust energy flows based on real-time demand and supply conditions, optimizing load balancing as the grid integrates power from the 5.15 GW GERD alongside growing solar and wind inputs — a critical capability for managing a system currently 96% dependent on variable hydropower.
- የባለሙያዎች ምክር ቤት የኢትዮጵያ የአዲስ አበባ ከተማ አስተዳደር ጋር በተቃራኒ ሲሆን፡ Machine learning algorithms are analyzing hydrological data, rainfall patterns, and reservoir levels to optimize water release scheduling and power generation at Ethiopia's hydroelectric facilities. These predictive models are particularly valuable for managing the GERD's massive reservoir and the country's network of existing dams, helping operators maximize generation during wet seasons while conserving water resources during drought periods.
- የባለሙያዎች ምክር ቤት የኢትዮጵያ የአዲስ አበባ ከተማ አስተዳደር ጋር በተቃራኒ ሲሆን፡ AI-powered weather prediction and generation forecasting models are improving the accuracy of solar irradiance and wind speed predictions, enabling grid operators to anticipate renewable output fluctuations and schedule complementary generation sources accordingly. These forecasting tools are essential as Ethiopia integrates the planned 8.4 GW of new solar and wind capacity into a grid that must balance intermittent generation with dispatchable hydropower.
- የባለሙያዎች ምክር ቤት የኢትዮጵያ የአዲስ አበባ ከተማ አስተዳደር ጋር በተቃራኒ ሲሆን፡ AI-powered platforms are optimizing off-grid and mini-grid solar installations across rural Ethiopia, using machine learning to manage battery storage, predict consumption patterns, and balance generation with local demand. Platforms like SWaDE are already deploying AI to support small-scale farmers by optimizing agricultural water use and energy efficiency, demonstrating practical applications of AI-driven energy management in rural communities.
- የባለሙያዎች ምክር ቤት የኢትዮጵያ የአዲስ አበባ ከተማ አስተዳደር ጋር በተቃራኒ ሲሆን፡ AI-powered condition monitoring systems are analyzing vibration, temperature, and performance data from wind turbines, solar inverters, and hydroelectric turbines to predict equipment failures and schedule maintenance before breakdowns occur. These systems are reducing unplanned downtime and extending asset lifespans across Ethiopia's growing renewable infrastructure, particularly for remote wind and solar installations where maintenance logistics present significant challenges.

የጥናቱ ስራ ለጥንቃቄ ማረጋገጥ ማሳሰቢያ: <https://www.imarcgroup.com/ethiopia-renewable-energy-market/requestsample>

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- Ethiopia's strategic diversification beyond hydropower is reshaping the energy mix, with the government's climate plan explicitly targeting reduced dependence on the 96% hydropower-dominant system through accelerated solar, wind, and biogas investment. The 8.4 GW Ming Yang portfolio and the Assela wind farm are concrete steps toward building a more resilient and balanced generation portfolio that can withstand climate-driven drought impacts on hydroelectric output.
- International financial commitments are reaching unprecedented levels, with the World Bank's USD 424 million ASCENT program, USD 400 million in transmission infrastructure agreements, and over USD 13 billion in energy investment agreements signed at the Invest in Ethiopia forum. These multilateral and bilateral partnerships are accelerating grid expansion, generation capacity, and electricity access while strengthening institutional capabilities and aligning Ethiopia's regulatory framework with international standards.
- The off-grid and distributed energy sector is gaining momentum, with Ethiopia's first grid-connected solar rooftop project introducing bi-directional metering in Addis Ababa, solar mini-grids serving 20,000 people across 11 rural villages, and the ASCENT program reducing connection costs for 480,000 low-income households. These decentralized solutions are complementing large-scale grid infrastructure to reach underserved populations across Ethiopia's diverse geography.
- Geothermal energy development is advancing despite setbacks, with the Tulu Moyo project — involving Meridiam and Reykjavik Geothermal — in negotiations to resume operations targeting an initial 50 MW capacity. Ethiopia is also targeting implementation of 17 geothermal projects to tap into the East African Rift's substantial geothermal potential, adding a dispatchable, weather-independent renewable source to complement the country's hydropower and variable solar and wind assets.
- The convergence of telecommunications and renewable energy is creating innovative dual-use infrastructure models, as demonstrated by Ethio Telecom and Huawei's Solar-on-Tower solution that achieves 40% diesel reduction while addressing urban space constraints. This approach is expanding renewable energy adoption beyond traditional power generation into the telecommunications sector, with potential applications across Ethiopia's growing network of cellular towers and digital infrastructure.
- Ethiopia's clean energy leadership is positioning the country as a regional power hub, with the GERD's 5.15 GW capacity and cross-border transmission infrastructure enabling electricity

exports to neighboring countries. The Digital Ethiopia 2030 strategy is connecting energy modernization with broader economic digitalization, while the government's framework for independent power producers is attracting private sector investment at scale.

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Ethiopia's government is driving renewable energy expansion through comprehensive national strategies that prioritize energy security, universal electrification, and emissions reduction. The country's climate plan explicitly targets diversification away from 96% hydropower dependence, while institutional reforms, streamlined procurement processes, and the independent power producer framework are providing regulatory clarity and attracting investment. The integration of renewable energy objectives into the Digital Ethiopia 2030 strategy and the 10-year national development plan demonstrates the government's commitment to positioning clean energy as the foundation of industrial growth, rural electrification, and regional competitiveness.

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Multilateral and bilateral financial partnerships are providing transformative capital for Ethiopia's energy expansion. The World Bank's USD 424 million ASCENT program, Denmark's financing of the Assela wind farm, Ming Yang's USD 7.47 billion initial investment in 8.4 GW of solar and wind capacity, and over USD 13 billion in cumulative energy investment agreements are collectively building generation capacity, expanding grid infrastructure, and improving electricity access. These international partnerships combine financial resources with technical expertise, strengthening institutional capabilities and aligning Ethiopia's energy sector with global best practices.

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Technological advancement is enabling Ethiopia to deploy a diverse portfolio of renewable solutions beyond traditional hydropower. The country's first bi-directional solar rooftop system, Africa's inaugural Solar-on-Tower telecommunications solution, advanced wind turbine technology at Assela, and emerging geothermal development at Tulu Moya demonstrate the breadth of technological innovation reaching Ethiopia's energy market. AI-powered grid management, predictive analytics for hydropower optimization, and smart metering infrastructure are enhancing operational efficiency across the entire value chain.

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IMARC Group's research categorizes the Ethiopia renewable energy market as follows:

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- Solar
- Wind
- Hydro
- Bioenergy

- Others

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- Addis Ababa
- Oromia Region
- Amhara Region
- SNNPR Region
- Tigray Region
- Others

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The competitive landscape of the Ethiopia renewable energy market includes a comprehensive analysis of key player positioning, market structure, top winning strategies, competitive dashboards, and company evaluation quadrants. Detailed profiles of all major companies are provided within the full IMARC Group research report.

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ግብርና ጥገና: The World Bank approved the USD 424 million ASCENT Ethiopia Program, comprising USD 400 million in IDA financing and a USD 24 million Denmark grant, to bring clean and reliable electricity to nearly six million people over five years.

☐☐☐☐ ☐☐☐☐: Ethiopia launched its first grid-connected solar rooftop project with bi-directional smart meters in Addis Ababa — a 100 kWp system allowing households to both consume and feed surplus solar power to the national grid.

🌬️ 🌿: The Assela 100 MW wind farm, financed by Denmark and built by Siemens Gamesa, began supplying clean energy to the national grid, powering over 140,000 households annually and strengthening Ethiopia's energy diversification strategy.

□□□□: Ethio Telecom and Huawei launched Africa's first Solar-on-Tower solution in Addis Ababa, achieving a 40% reduction in diesel consumption at telecom sites while demonstrating innovative dual-use infrastructure combining telecommunications and renewable energy.

□□□□: China's Ming Yang Smart Energy received an investment license from the Ethiopian Investment Commission to develop 8.4 GW of wind and solar capacity across South Omo, Afar, and Somali regions, with an initial investment of USD 7.47 billion and a second tranche of USD 7.3 billion for green ammonia and equipment manufacturing.

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