

2025 Update: Who in Africa is Ready for Nuclear Power?

Electricity demand across Africa is expected to grow almost 7x by 2050, according to the [latest IAEA nuclear projections](#). Nuclear power could help to meet a portion of this need. Newer technologies like small modular reactors (SMRs) are inching closer to commercial launch and may offer lower costs, faster deployment, and greater flexibility than large traditional reactors. But timely deployment will only be feasible if countries prepare and financing is made available.

Here's an updated summary of African countries' nuclear readiness based on the [latest analysis](#) by the Energy for Growth Hub and Third Way.

Ready by 2030

1. Egypt

- Egypt is constructing its [first nuclear power plant](#) at El Dabaa, with four reactors totaling 4.8 GW. Construction began in 2022 and completion is expected by 2028. The \$28 billion project is financed 85% by a Russian state loan through Rosatom. • Egypt has not yet formally explored SMRs.

2. South Africa

- South Africa operates the continent's only commercial nuclear power station, Koeberg.
- In 2024, the government [paused](#) a planned 2.5 GW procurement of new capacity to allow for further public consultation.
- SMRs are seen as [ideally suited](#) to replace aging coal units, particularly in water-scarce regions.
- In 2025, South Africa [signed agreements](#) with both local and Chinese partners to advance SMR development, including [reviving](#) its historic Pebble Bed Modular Reactor program.

Potentially ready by 2030

3. Ghana

- Ghana currently [operates](#) a research reactor, and the government plans to commission its first nuclear plant by the early 2030s.
- In 2024, Ghana [signed non-binding agreements](#) with Oregon-based NuScale to

deploy SMRs and with China National Nuclear Corporation (CNNC) to build a large reactor.

- Ghana is **participating** in the US-led Foundational Infrastructure for Responsible Use of Small Modular Reactor Technology (FIRST) program, which will help the country establish a secure SMR supply chain.

4. Uganda

- Uganda announced **plans** to build a plant at Buyende with CNNC's support.

5. Morocco

- Morocco **operates a research reactor** and has signed multiple agreements **with Russia and China** on nuclear cooperation.
- In 2024, the country **shared plans** to partner with France to build an experimental nuclear reactor and explore SMRs.

6. Kenya

- Kenya officially aims to commission its first plant by 2034. Officials with Kenya's Nuclear Power and Energy Agency (NuPEA) have claimed the **country is on track to start construction** on its first nuclear power plant by 2027.
- In March 2025, Kenya **signed** an MoU with CNNC for the exchange of technical expertise in nuclear energy research and innovation.
- Kenya is **actively exploring** funding models and project structuring for 100-300 MW SMRs.

7. Algeria

- Algeria **operates two research reactors**, the Nur unit, completed in 1989 with the help of Argentina, and the Es-Salam reactor, completed in 1993 with the help of China. ● A **2024 roadmap with Russia** includes nuclear medicine and energy, but there is no confirmed plant construction.

8. Tunisia

- Tunisia has had past plans that did not materialize (i.e., **constructing its first plant** by 2020). **Old agreements** with Russia were signed, but no visible progress has been made.

Potentially ready by 2050

- Rwanda is exploring both SMRs and microreactors through partnerships with **US-based NANO Nuclear Energy** and Canadian Dual Fluid. A **demonstration reactor**, funded by Dual Fluid, could accelerate this timeline. Although the

government has ambitious plans, Rwanda remains coded yellow because these initial agreements have not yet led to clear progress.

- Another 12 African countries have made initial steps and could, with more action, be ready by 2050.

No ranking due to conflict

- Nigeria has **shelved** its Rosatom-led Gereggu project but remains engaged with the U.S. via FIRST and other international partners.
- Sudan and Mali have expressed nuclear ambitions and signed deals with China and Russia.
- Burkina Faso is reportedly cooperating with Rosatom, but plans seem a long way off.

Two notable trends

Russia dominates the African markets. The state-owned Rosatom has signed nuclear energy partnerships with **at least 20 countries** in Africa, including Namibia, Niger, Zimbabwe, Burundi, Ethiopia, Congo, and Guinea in addition to many countries listed above. While these agreements reflect some level of growing interest in nuclear power, most are very preliminary and represent only the first step in a long and complex process of nuclear project development. Yet they are also a concrete sign that the US is behind the nuclear diplomacy curve.

SMRs will likely accelerate nuclear interest. Once SMRs become commercially available, they could present a promising option for African countries with smaller grids or water constraints. Modular designs should allow for lower up-front costs, improved safety features, and more flexible deployment. Several African countries, such as South Africa, Ghana, Rwanda, and Morocco, are actively pursuing partnerships and feasibility studies for SMRs. As commercial models reach the market in the 2030s, early preparation today will determine which nations benefit first.

Who in Africa is ready for nuclear power?



Ready by 2030	Potentially Ready by 2030	Potentially Ready by 2050	No ranking due to conflict
Egypt South Africa	Ghana Uganda Morocco Kenya Algeria Tunisia	Rwanda +12 more	Nigeria Sudan Burkina Faso +8 more

Source: [Global Market for Advanced Nuclear Map](#), Energy for Growth Hub & Third Way, 2024



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