

12 Priority Markets for Advanced Nuclear Technology

Nuclear power is a potential source of clean power to drive industrialization and to meet rising demand in emerging markets, especially with new [smaller, safer, and more flexible designs](#) expected to come to the market over the next decade. But where exactly will demand be greatest? And which countries will be ready for nuclear power? To estimate the future market, the Energy for Growth Hub and Third Way [created an interactive map](#). Here, we identify 12 priority markets for advanced nuclear technology. These dozen countries, all rated “Ready” or “Potentially Ready” by 2030, represent a full fifth of projected additional global electricity demand by 2050.

1. High-Coal Industrialized Economies

These two countries are industrialized economies with only modest future energy demand potential, but significant coal replacement needs. Both countries already have 123 Agreements with the United States.

1. **Poland's** electricity demand growth will be relatively limited, but it will need substantial replacement for coal in its power mix (currently ~80%) to meet its Intended Nationally Determined Contributions (INDCs). The government plans to select a partner for its first nuclear power plant (NPP) as early as 2022 with plans to begin operating by 2033.
2. **South Africa** already operates an NPP, and its total electricity demand is projected to shrink by 2050. But, like Poland, South Africa uses coal for over 80% of its electricity generation, making it a strong potential market for NPPs to replace coal installations.

2. Emerging Markets that are ready now

Each of these countries is high-population, high-growth, and uses a substantial amount of natural gas in their current power mix. They either already have an operating NPP or have one under construction.

3. **Bangladesh** has the fourth highest projected growth in electricity demand in the world. The country is already constructing the [Rooppur NPP](#) with the help of Russia. Bangladesh's high power needs and low renewable resources makes it a major potential market for advanced nuclear power.
4. **Egypt** has expanding power needs, including a potentially pressing requirement for desalination. The country is planning to begin construction on the El Dabaa NPP soon, which will provide nearly 5GW of power and be tied to desalination plants. El Dabaa, built by Russia, has reportedly been delayed.
5. **Mexico** already operates an NPP and is a good candidate to import more to meet substantial growth in its power needs. Mexico has the eighth highest projected growth in electricity demand through 2050.

3. Emerging Markets that could be next

These countries are high growth and have made serious progress on nuclear preparation.

6. **Jordan** is [heavily reliant on imported oil and gas](#) to generate power, making supply security a concern. Electricity demand is projected to double by 2050, while climate change could accelerate desalination and air conditioning demand. Jordan aims to have significant nuclear capacity by 2030, and has reached advanced stages of negotiations with Chinese, Russian, and US-based companies for the deployment of small modular reactors.
7. **The Philippines** constructed (and then immediately mothballed) a nuclear power plant in Bataan in 1985. [There are tentative plans to revive the plant](#). The Philippines are projected to experience the fifth-greatest growth in electricity demand, driven by an exploding population and economy. Low land availability and high population density make this country a prime candidate for advanced nuclear power.
8. **Vietnam** previously agreed to build plants with Japan and Russia. Officials put these plans on hold in favor of gas and coal, but they could be [revived](#). Vietnam has a 123 Agreement with the US.

4. Emerging Markets that could be ready soon

All fast-growing economic standouts that will at least double electricity demand by 2050.

9. **Ghana** is West Africa's bellwether and is expected to undergo a 10-fold increase in electricity demand by 2050. Ghana has taken multiple practical steps toward nuclear power, which it aims to bring online by the mid-2030s. Ghana has one operating research reactor.
10. **Indonesia** operates three research reactors, has a well-developed policy and regulatory environment, and has [signed a deal](#) with US-company Thorcon International to develop a 500MW floating molten salt reactor. Indonesia has a rapidly growing population and economy driving the third greatest projected growth in electricity demand of any country in the world. Limited renewable energy potential along with the geographically distributed nature of the country makes it a clear candidate for nuclear power.
11. **Morocco** operates a research reactor and has a [123 Agreement](#) with the United States. Morocco is a relatively small economy, but is still projected to triple electricity consumption by 2050.
12. **Thailand** operates a research reactor and has been developing a policy and regulatory regime since 2007. Thailand's [2012 Power Development Plan](#) lays out a timeline through 2030, including the development of up to 4GW of power in the mid-2020s.

For more detailed information, our full checklist is [here](#).