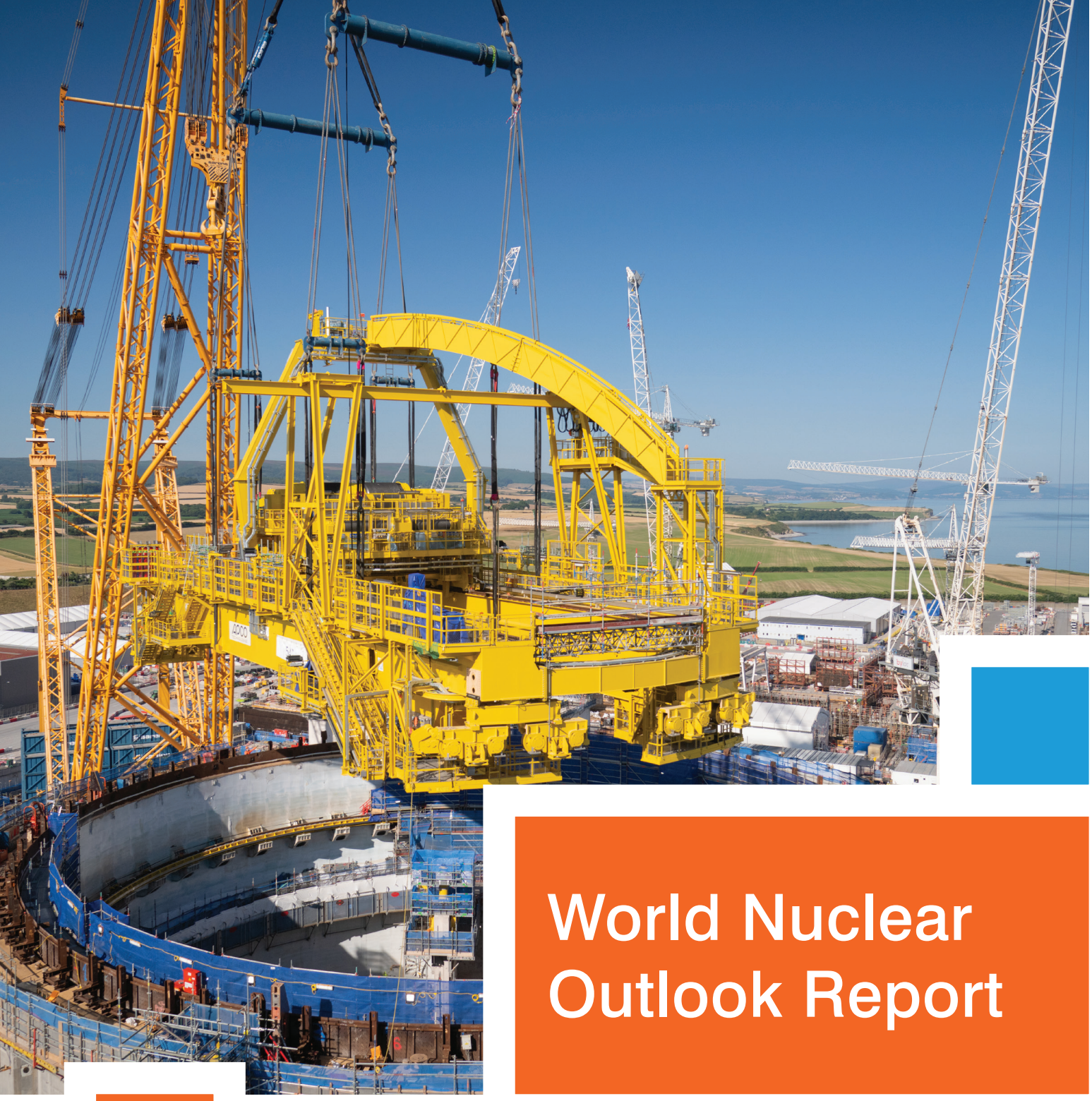

World Nuclear Outlook Report

WORLD NUCLEAR ASSOCIATION

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1 Executive Summary

Nuclear energy entered 2026 with renewed growth and stronger policy support. Global nuclear generation reached a record **2702 TWh in 2025**, 35 TWh higher than in 2024, and supplied around **9% of world electricity**. Growth was led by Asia, while generation remained broadly stable in the Americas and Africa and declined in Western and Central Europe following reactor closures.

The existing fleet continues to perform strongly. The average capacity factor rose to **83.7%**, with no general deterioration among reactors operating for more than 40 years. This reinforces the value of long-term operation as an immediate and cost-effective source of low-carbon electricity. Since 1970, nuclear generation is estimated to have avoided **43.6 billion tonnes of CO_2 compared with gas and 97.2 billion tonnes compared with coal**.

Construction is increasing, but remains below the level required. **Eleven reactors started construction in 2025**, nine in China and two in Russia. Three reactors were connected to the grid and seven permanently shut down. Tripling global capacity by 2050 would eventually require build rates around six times current levels.

1.1 The capacity ambition is sufficient for tripling

The central World Nuclear Outlook Report (WNOR) 2026 finding is that government ambitions remain collectively sufficient to triple global nuclear capacity by 2050. If national targets and identified projects are achieved and the existing fleet continues operating, capacity would reach **1467 GWe in 2050**.

The project pipeline has strengthened. Since the previous edition, capacity under construction has risen from 76 to 88 GWe and planned capacity from 107 to 112 GWe, whereas proposed capacity remains at 294 GWe and potential capacity has fallen from 24 to 14 GWe, showing a shift to more certain and nearer-term categories. Additional capacity required to meet government targets has increased from 542 to 548 GWe, with additional targets introduced by new governments.

Existing nuclear countries account for **1313 GWe** of projected 2050 capacity, sufficient by themselves to meet the level associated with the Declaration to Triple Nuclear Energy. New entrant countries contribute a further **153 GWe**.

1.2 Delivery capability will determine whether ambitions are achieved

WNOR assesses **Policy Framework Readiness, Institutional & Infrastructure Readiness, Project & Programme Development Readiness**, and the credibility of achieving **National Government Targets**. Targets are most credible where political commitment, institutions, financing and projects advance together.

The assessments identify five programme groupings:

1. **Pacesetters** maintain continuous construction programmes and established licensing, delivery and commissioning systems. Their priority is to preserve and expand this capability.
2. **Expanders** have active or recent new-build experience but need to increase deployment substantially and convert individual projects into repeat programmes.

3. **Restarters** have mature institutions and operating experience but limited recent continuous construction. They must adapt and scale existing capabilities for new build.
4. **Newcomers** have recently completed, are constructing or are advancing their first plant. They should retain the regulatory, workforce and supply-chain experience gained for subsequent projects.
5. **Candidates** have decided nuclear should play a future role but must convert political commitment into institutions, financing and deliverable projects.

1.3 Policy recommendations for tripling global nuclear capacity

The country assessments support coordinated action across the nuclear system:

1. **Establish durable policy.** Governments should integrate nuclear into long-term energy and industrial strategies and frameworks that recognize nuclear's contribution to achieving policy goals.
2. **Create a favourable investment environment.** Investment in nuclear energy should be encouraged, recognizing it as a strategic national asset, mobilizing a full range of public, private and multilateral financial institutions to support nuclear deployment.
3. I**mprove regulatory efficiency.** Licensing and regulatory frameworks should be optimized. Greater international cooperation and use of credible assessments from other jurisdictions can improve efficiency. Regulators need sufficient expertise and resources for existing reactors, new construction and emerging technologies.
4. **Use existing assets fully.** Lifetime extensions, uprates, improved performance, suitable restarts and timely completion of reactors under construction preserve both generating capacity and the wider nuclear ecosystem.
5. **Deploy proven reactors while enabling SMRs and advanced technologies.** Repeat deployment of proven designs offers the fastest route to scale, while R&D, licensing and demonstration support can bring newer technologies to commercial deployment.
6. **Expand fuel supply ahead of demand.** Uranium exploration and mining, conversion, enrichment, fabrication and specialized fuel capacity require early investment because of their long lead times.
7. **Remove barriers if reprocessing is adopted.** Governments with a policy of reprocessing should provide consistent long-term policy frameworks, with regulatory certainty to support closed fuel cycles.
8. **Plan for waste management and decommissioning.** Credible, funded strategies should cover storage, transport, recycling where adopted, disposal and decommissioning.
9. **Strengthen the supply chain.** Credible pipelines should support investment in manufacturing, construction, engineering and qualified suppliers, aided by greater alignment of codes and procurement requirements.

10. **Move from projects to programmes.** Standardized designs, clear delivery models, early supply-chain engagement and coordinated procurement can transfer learning and reduce risk.
11. **Build the workforce early.** Strategies should evaluate skills needs across regulation, construction, operation and the fuel cycle, supported by education, training, knowledge exchange, international mobility and reskilling from adjacent industries.
12. **Build public confidence.** Enable communities to participate in early, sustained and evidence-based engagement and build understanding of the energy, employment and regional benefits of projects.

1.4 From targets to sustained programmes

Country assessments repeatedly show that long-term targets need intermediate milestones; programme continuity retains expertise and enables learning; institutional and financing capacity must match programme scale; and technology choices should support standardization. Maintaining the existing fleet also preserves the sites, skills and supply chains needed for expansion.

1.5 The priority is implementation

The outlook is positive but conditional. Ambitions are sufficient and the pipeline is maturing, but the rate of reactor deployment needs to increase substantially. Projects needed in the 2030s depend on financing, licensing, manufacturing and workforce decisions taken now; capacity for the 2040s depends on turning initial projects into repeat programmes.

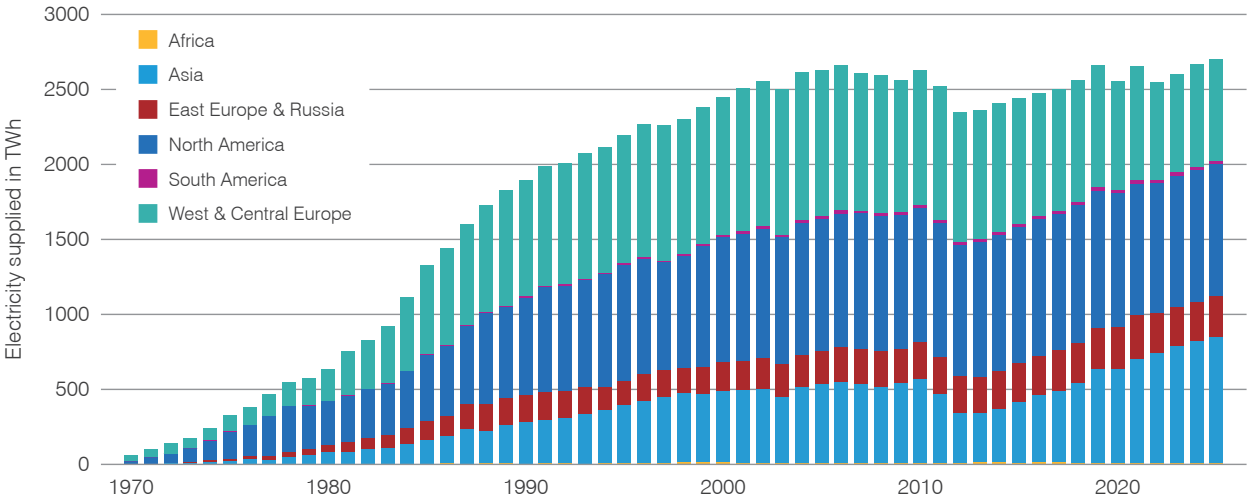
Tripling remains achievable if governments and industry preserve the fleet, complete current construction, commit to new projects and build repeatable delivery, financing, regulatory, fuel-supply and workforce capabilities. **The targets exist; the task now is to build the delivery system capable of achieving them**.

2 Global performance highlights for 2025

2.1 Nuclear generation in different geographical regions

Nuclear reactors supplied a total of 2702 TWh of electricity in 2025, up 35 TWh from 2667 TWh in 2024, thereby setting a new annual record for global electricity supply.

Figure 2.1. Global nuclear electricity supply, 1970–2025

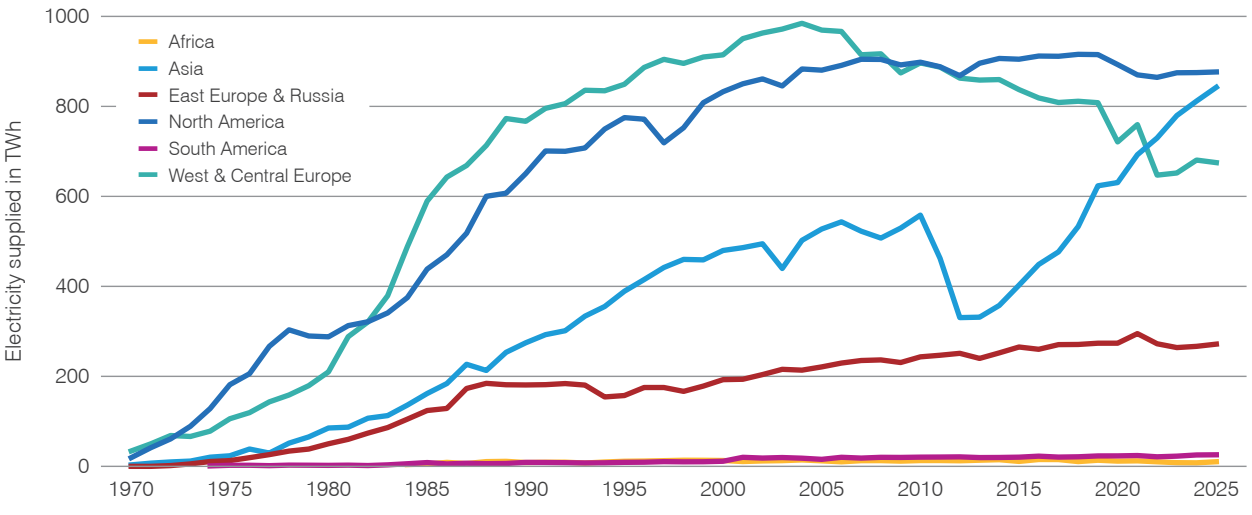


Source: World Nuclear Association/IAEA

Figure 2.1 shows the long-term development of global nuclear electricity generation. Nuclear energy was first used for electricity in the mid-1950s. It did not, however, make a significant contribution to global electricity supply until a period of rapid growth in the 1970s and 1980s. Growth then slowed through to 2006, followed by a five-year period in which global output fell, primarily because of lower generation in West & Central Europe. Generation then fell sharply in 2011 and 2012 following the accident at Japan's Fukushima Daiichi plant.

Since 2012, global nuclear output has again trended upwards, with particularly strong growth in Asia, where output rose by approximately two-and-a-half times between 2012 and 2025. This growth has been led by the rapid expansion of nuclear generation in China, alongside new reactor starts in India, Pakistan and the United Arab Emirates.

Figure 2.2 Regional trends in nuclear electricity generation, 1970-2025



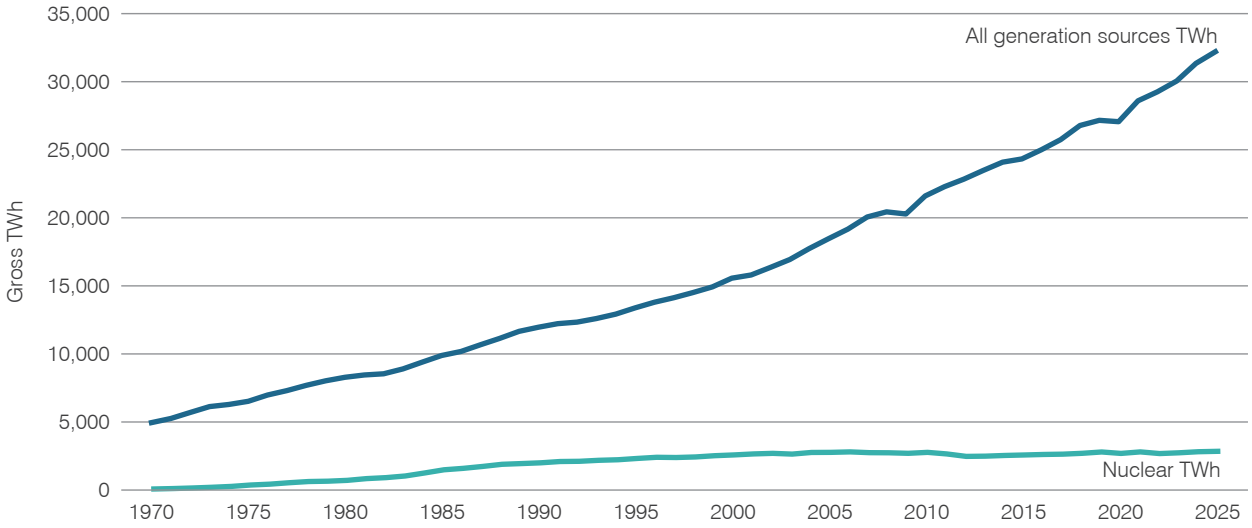
Source: World Nuclear Association/PRIS

Since 2012, nuclear generation in North America, South America and Africa has remained broadly stable, while East Europe & Russia has seen a gradual increase. West & Central Europe has continued to record declining generation, with Germany closing all its reactors and older reactors closing in Belgium, Sweden, Switzerland and the UK.

2.2 The contribution of nuclear to electricity supply

Nuclear generation supplied 9% of the world's electricity in 2025. Although generation in absolute terms is at an all-time high, nuclear's share of the electricity mix has declined from around 17% in the mid-1990s, because overall electricity supply has grown faster than nuclear generation.

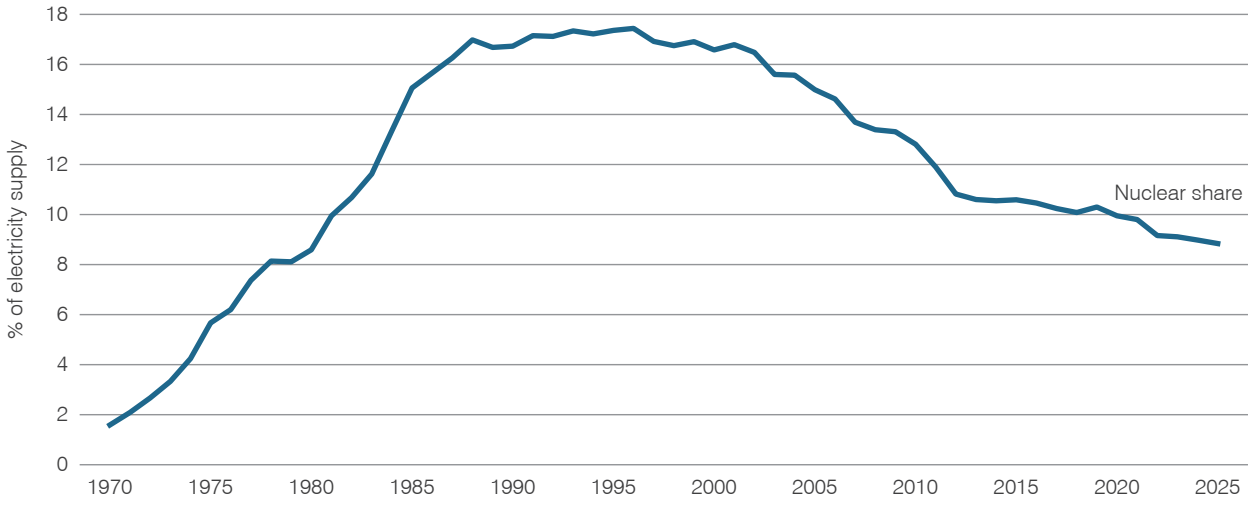
Figure 2.3 Global nuclear and total electricity generation, 1985–2025



Source: World Nuclear Association

Figure 2.3 places nuclear generation in the context of overall electricity demand, illustrating that nuclear output is at a record high while its share of global electricity supply has declined from its mid-1990s peak, as shown in Figure 2.4

Figure 2.4. Percentage of global electricity supplied by nuclear power



Source: World Nuclear Association

2.3 The contribution of nuclear to mitigating climate change

Since 1970, nuclear generation has avoided an estimated 43.6 billion tonnes of carbon dioxide emissions relative to generating the same amount of electricity in gas-fired power plants. At current generation levels, nuclear avoids the emission of around 1.25 billion tonnes of carbon dioxide each year. This is more than the combined annual CO2 emissions from the aviation and shipping sectors.

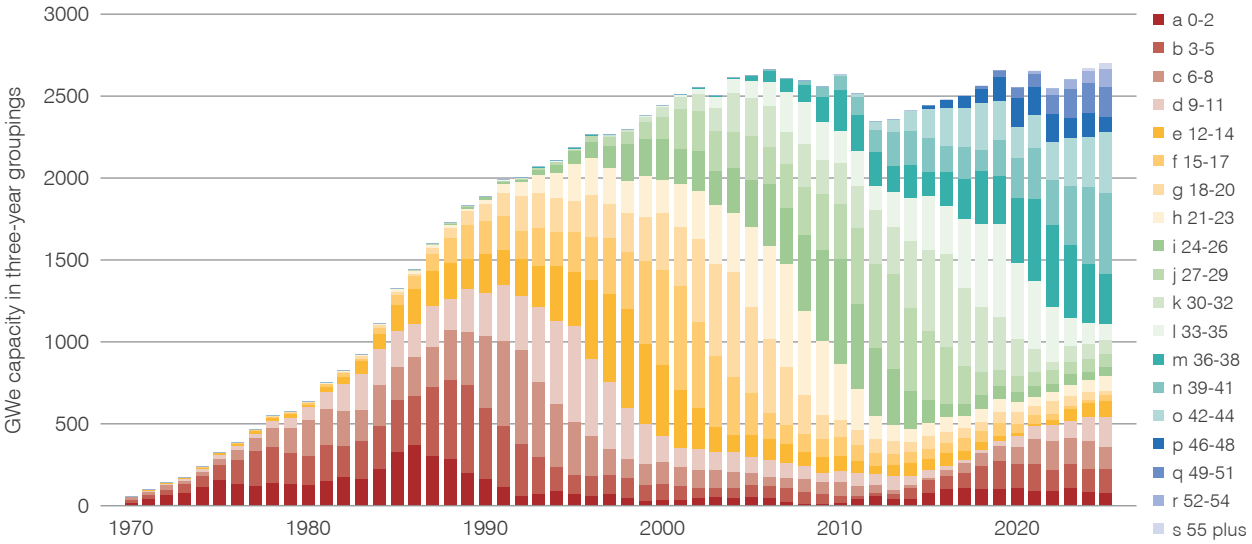
Compared with coal-fired power plants, which are more carbon-intensive, nuclear generation has avoided 97.2 billion tonnes of CO2 emissions. This cumulative total is greater than emissions from the entire energy sector in 2025 (38.1 billion tonnes CO2).

2.4 Composition of the global nuclear fleet

The current fleet of nuclear power reactors is dominated by large-capacity units. At the end of 2025, global net operable capacity was 400 GWe, up from 398 GWe in 2024.

The majority of electricity production comes from reactors that have been in service for between 30 and 50 years. However, the increase in the number of new reactor start-ups since 2015 is reflected in the rising proportion of electricity generation from reactors that have operated for less than a decade.

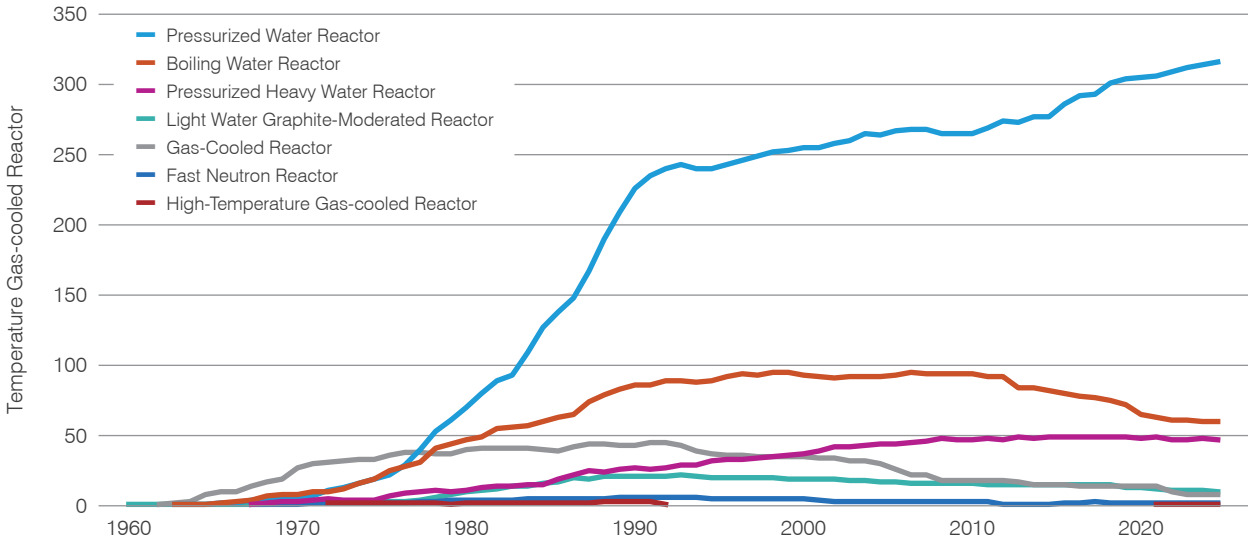
Figure 2.5 Operable reactor capacity by years of operation



Source: World Nuclear Association/IAEA PRIS

Most reactors in use today are pressurized water reactors (PWRs), which emerged as the predominant reactor type in the 1970s and have continued to increase in number. The next most common reactor types are boiling water reactors (BWRs) and pressurized heavy water reactors (PHWRs), although the number of reactors using these designs has declined in recent years.

Figure 2.6. Number of operable reactors by reactor type

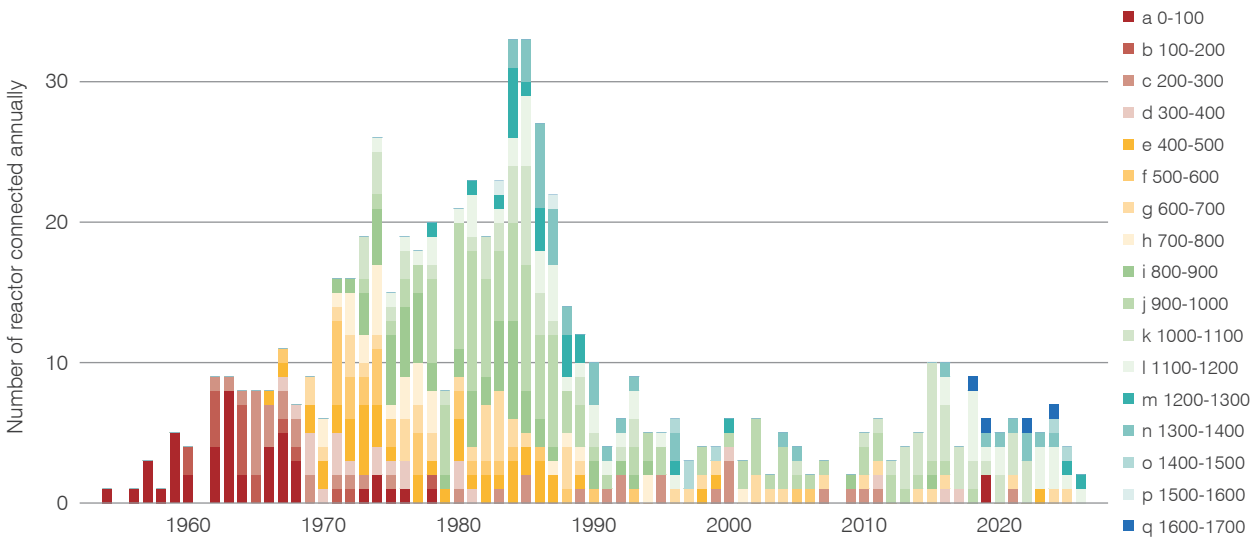


Source: World Nuclear Association

The first generation of reactors built in the 1950s and 1960s were small compared with most reactors built later, with capacities below 500 MWe. Larger reactor designs were deployed during the 1970s and 1980s, offering the potential for greater economies of scale.

Although most reactors on which construction started in the past decade have capacities above 1 GWe, some smaller reactors continue to be built. Significant future deployment of small modular reactors (SMRs) would increase the number of new smaller-capacity reactors, but larger reactors are likely to continue to account for most capacity added to 2050.

Figure 2.7 Nuclear reactor capacity additions by reactor size, 1954–2025



Source: World Nuclear Association

2.5 Changes to the global nuclear fleet in 2025

Three reactors were connected to the grid in 2025, one each in China, Russia and India. Construction times differed significantly, from 62 months for Zhangzhou 2 in China to 163 months for Rajasthan 7 in India. The shorter construction period in China is consistent with the benefits of an active new-build programme based on standardized designs built in series.

Table 2.1 Reactor grid connections in 2025

Reactor Name	Location	Model	Reactor Type	Reference Unit Power (MWe net)	Construction Start Date	First Grid Connection	Construction Time (months)
Kursk 2-1	Russia	VVER V-510	PWR	1,200	28 April 2018	31 December 2025	92
Rajasthan 7	India	Horizontal Pressure Tube type	PHWR	630	18 July 2011	17 March 2025	163
Zhangzhou 2	China	HPR1000	PWR	1,126	4 September 2020	22 November 2025	62

Source: World Nuclear Association

Seven reactors shut down in 2025, including three units in Belgium and three small units at Bilibino in Russia. The Bilibino reactors had reached the end of operations, however, whereas the other four reactors were closed as a result of political decisions.

Table 2.2 Reactor permanent shutdowns in 2025

Reactor Name	Reference Unit Power (MWe net)	Model	Reactor Type	Location	Permanent Shutdown Date
Bilibino 2	11	EGP-6	LWGR	Russia	3 December 2025
Bilibino 3	11	EGP-6	LWGR	Russia	11 December 2025
Bilibino 4	11	EGP-6	LWGR	Russia	30 December 2025
Doel 1	445	W (2-loop)	PWR	Belgium	14 February 2025
Doel 2	445	W (2-loop)	PWR	Belgium	30 November 2025
Maanshan 2	938	WE 312 (3 loop-12 foot)	PWR	Taiwan	18 May 2025
Tihange 1	962	Framatome 3 loops reactor	PWR	Belgium	30 September 2025

Source: World Nuclear Association

Eleven reactors started construction in 2025, matching the total in 2024. Nine of the new reactors to start construction were in China and two in Russia. Over the last 40 years, this number of new construction starts has been exceeded only in 2009 and 2010.

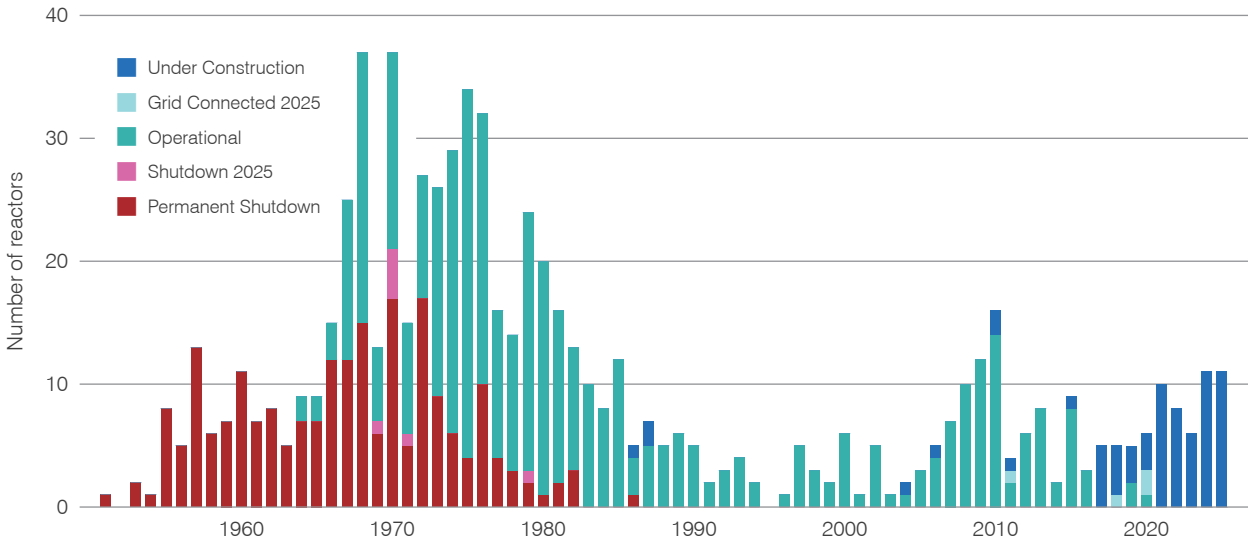
Table 2.3 Reactor construction starts in 2025

Reactor Name	Location	Model	Reactor Type	Reference Unit Power (MWe net)	Construction Start Date
Lufeng-1	China	CAP1000	PWR	1,250	24 February 2025
Leningrad 2-4	Russia	VVER V-491	PWR	1,150	20 March 2025
Shidaowan-2	China	HPR1000	PWR	1,134	7 May 2025
Taipingling-3	China	HPR1000	PWR	1,209	10 June 2025
Jinqimen-1	China	HPR1000	PWR	1,145	10 August 2025
Zhaoyuan-1	China	HPR1000	PWR	1,117	18 November 2025
Sanao-3	China	HPR1000	PWR	1,208	19 November 2025
Ningde-6	China	HPR1000	PWR	1,117	16 December 2025
Kursk 2-3	Russia	VVER V-510	PWR	1,200	20 December 2025
Bailong-1	China	CAP1000	PWR	1,160	22 December 2025
Lufeng-2	China	CAP1000	PWR	1,250	22 December 2025

Source: World Nuclear Association

Meeting the target of tripling nuclear capacity by 2050 would require construction start rates to accelerate to around six times current levels by the mid-2030s.

Figure 2.8 Current status of reactors starting construction 1951–2025



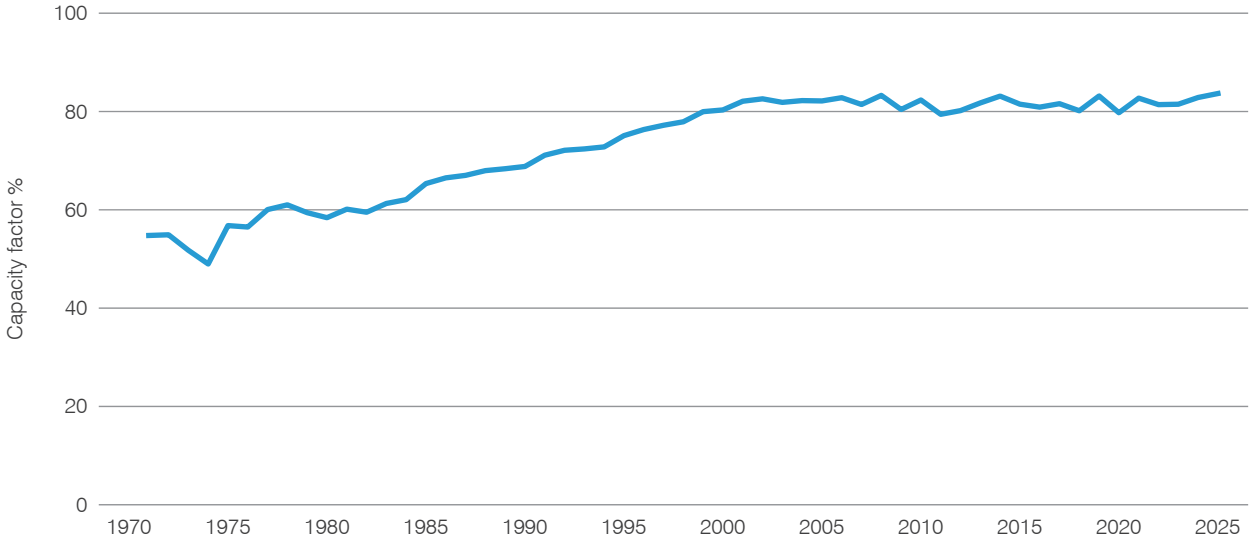
Source: World Nuclear Association

Most reactors under construction today began construction within the last ten years. Among those that have been under construction for more than ten years, most have experienced periods of suspension. Only the PFBR prototype in India has had a continuous construction period longer than ten years.

2.6 Nuclear reactor capacity factors in 2025

In 2025, the global average capacity factor was 83.7%, up from 82.9% in 2024, continuing the trend of high-capacity factors recorded since 2000. Capacity factors in this section are based on the performance of reactors that reported electricity generation in the relevant calendar year.

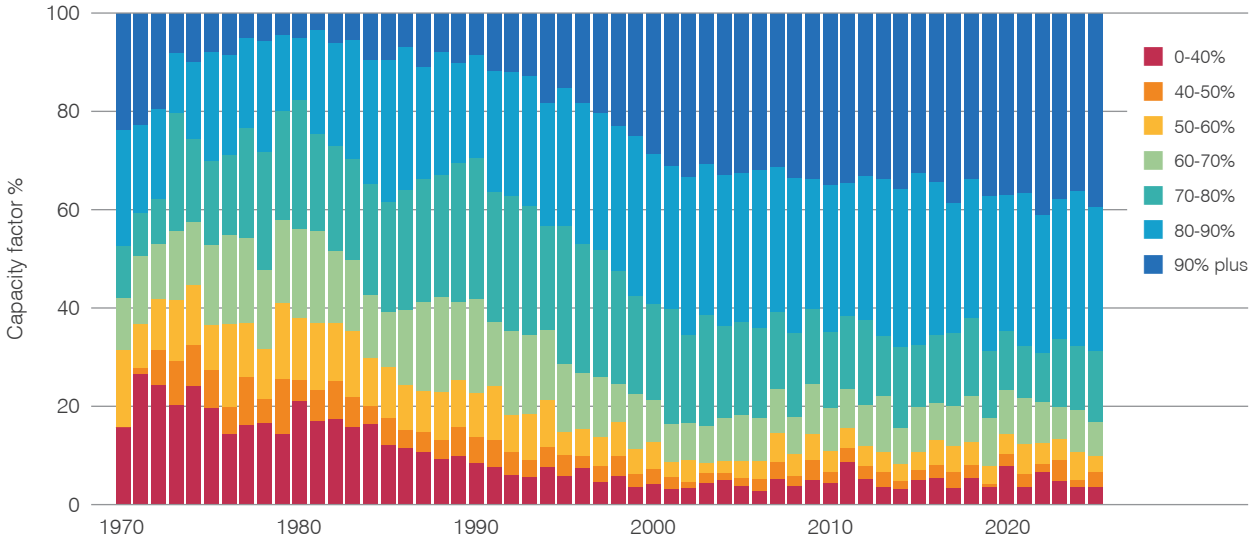
Figure 2.9 Global average nuclear reactor capacity factor



Source: World Nuclear Association

Average capacity factors have increased steadily in each decade since the 1970s, with the greatest improvements taking place in the 1980s and 1990s. Capacity factors have continued to improve in subsequent decades, and the capacity factor deciles in 2025 were broadly similar to those in recent years.

Figure 2.10 Long-term trends in nuclear reactor capacity factor

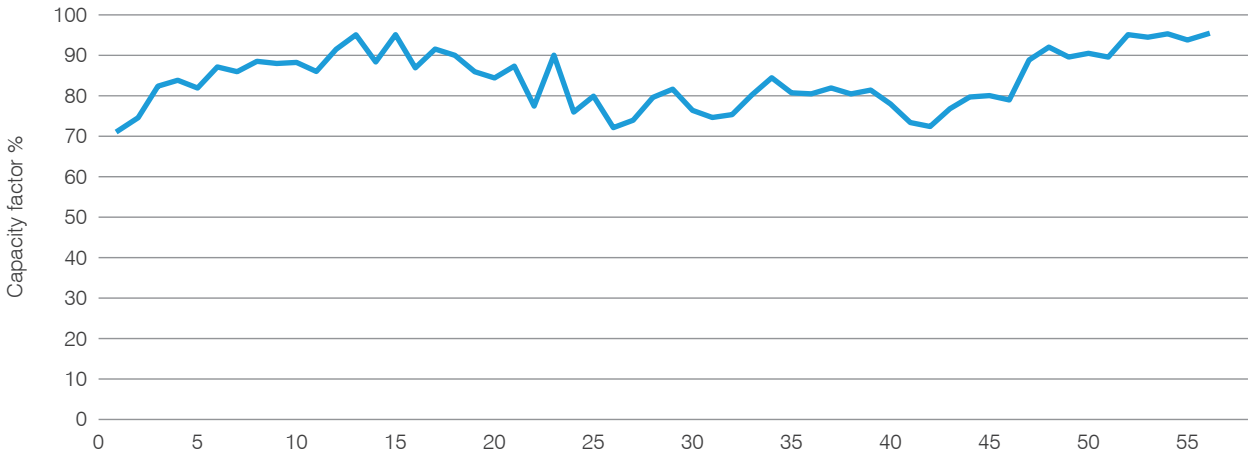


Source: World Nuclear Association

2.7 The influence of length of operating life on age-related performance

There is no overall age-related decline in nuclear reactor performance as measured by the average capacity factors achieved by reactors of different ages. Figure 2.11 shows the average capacity factor for each reactor age over the six-year period from 2020 to 2025. The strong performance of reactors that have operated for more than 40 years demonstrates that reactor age does not, by itself, prevent strong performance during extended operation.

Figure 2.11 Mean nuclear reactor capacity factor by reactor age, 2020–2025



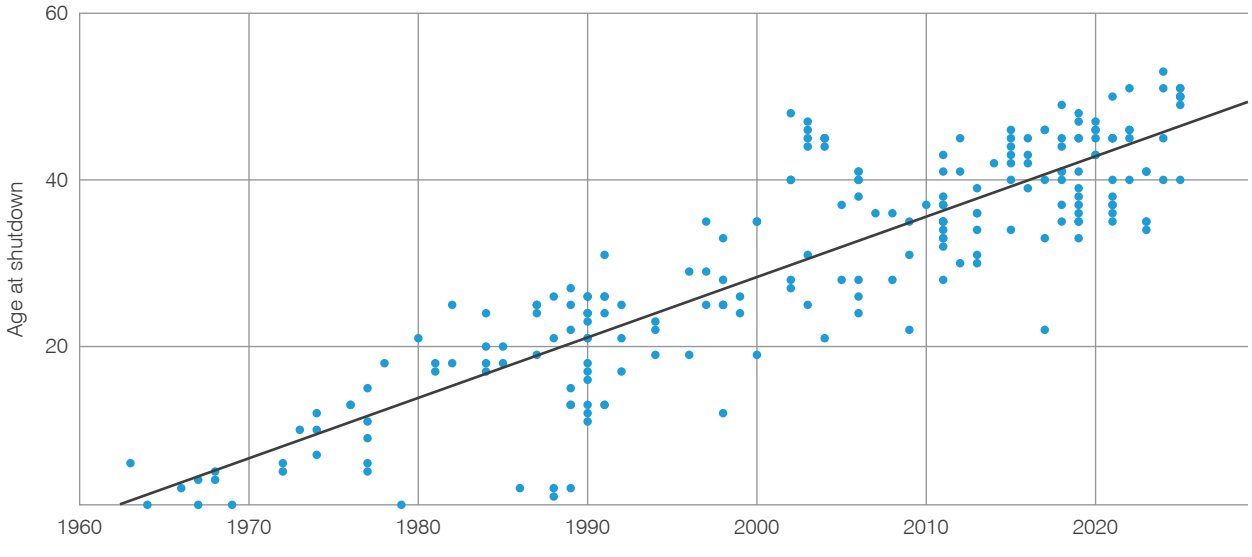
Source: World Nuclear Association

Extending the operating lifetimes of nuclear power plants is among the most cost-effective ways of securing additional low-carbon generation, according to the International Energy Agency.

In August 2026 the mean age of the world's operable nuclear power reactors was 33 years. There were 46 operable reactors that commenced operation more than 50 years ago, representing around 10% of currently operable reactors.

The average age at which nuclear reactors have been permanently shut down has been steadily increasing over time. The average age of those reactors permanently shut down in 2025 was 48.7 years, up on the average of 47.3 years for 2024.

Figure 2.12 Average operating age at which reactors have been permanently shut down



Source: World Nuclear Association

3 Global outlook for nuclear capacity goals

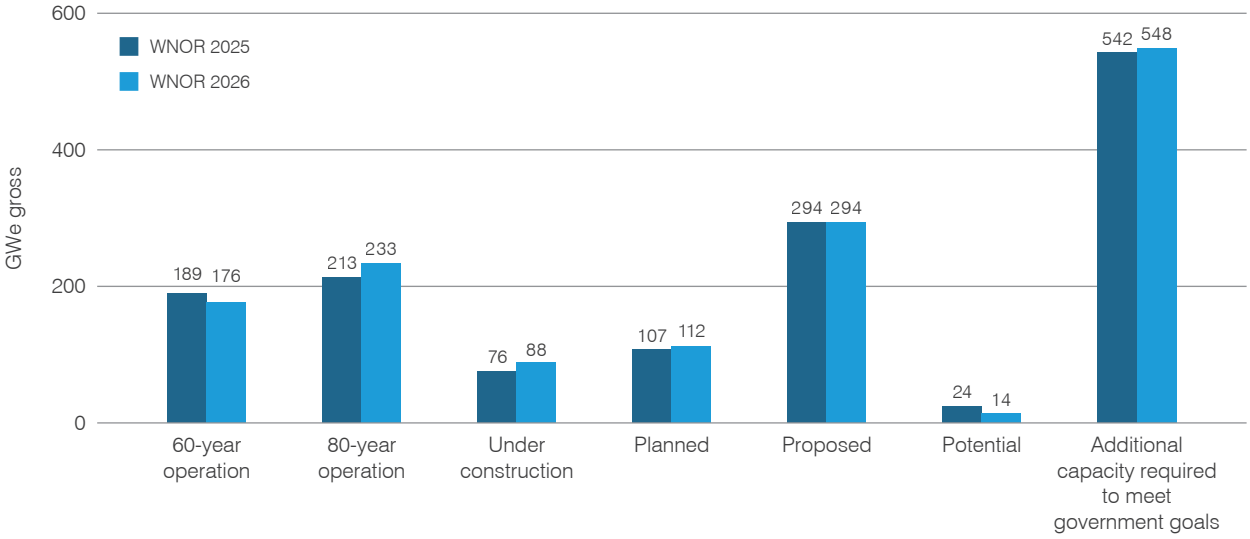
3.1 Projection of nuclear capacity in 2050

Global operable nuclear capacity is projected to reach 1467 GWe by 2050 if: i) reactors currently operable operate up to a maximum of 80 years, unless stated to have a shorter period of operation; ii) reactors classified as under construction, planned, or proposed as of 1 August 2026 enter operation by 2050; and iii) any additional capacity required to meet national nuclear capacity targets also enters operation.

Capacities in this forward-looking section refer to the gross capacity of a nuclear plant - the maximum electrical output generated by the nuclear plant's generator, enabling easier comparisons between existing and future reactors. The Global Performance chapter reports the net capacity of operable reactors, the electrical output available for supply to the grid after subtracting the plant's own electricity consumption.

There have been some small changes in the capacities in each of these categories since the 2025 projections used in the previous edition of the World Nuclear Outlook Report.

Figure 3.1 Changes in projections of capacity of reactors operating in 2050 by category



Source: World Nuclear Association

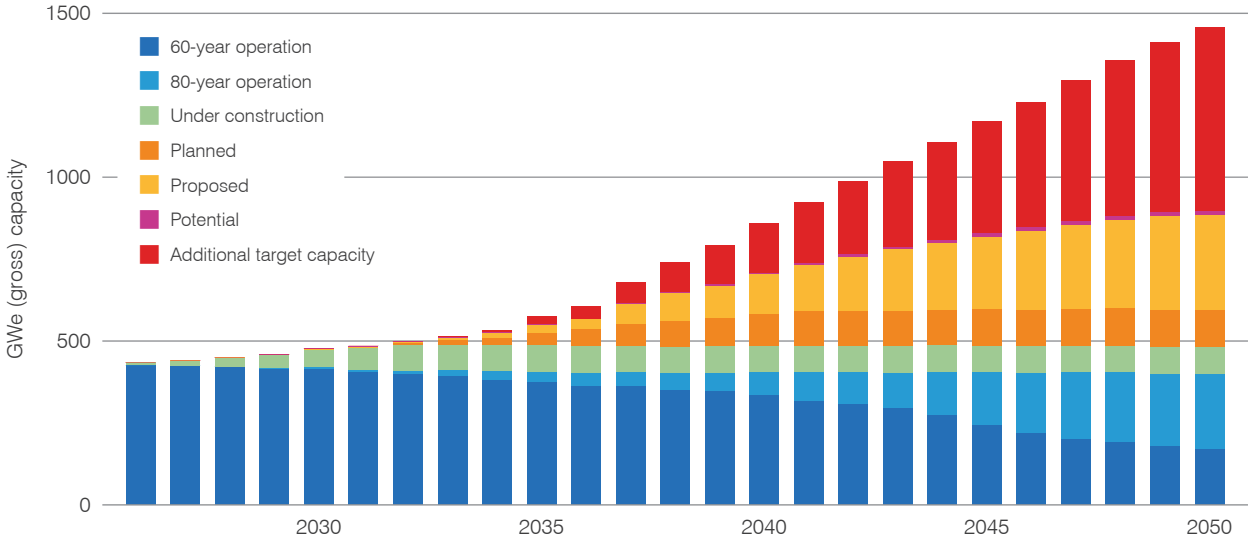
There is an increase in more certain, near-term capacity (Planned; Under construction). This trajectory would be expected if plans and proposals for new reactors were advancing to meet government goals and the rate of new construction were accelerating. However, whether these are the reasons for the changes observed will only become clear if the trends are continued in future reports.

The 60-year operation capacity has fallen and the 80-year operation capacity has risen because these category definitions have changed. In the previous report, any reactor approved to operate for more than 60 years was included in the 80-year category. This year, only those reactors that will have operated for less than 60 years are included in the 60-year operation category, regardless of whether they have received approval to operate for longer.

3.2 Global capacity projections 2026-2050

The figure below shows projected global reactor capacity by category, based on the combined capacity trajectories for each country.

Figure 3.2 Global nuclear capacity projections 2026-2050



Source: World Nuclear Association

Of the 423 GWe (gross) of nuclear capacity currently in operation, 409 GWe is projected to remain in operation in 2050. This comprises 176 GWe from reactors that would have operated for less than 60 years and 233 GWe from reactors operating for between 60 and 80 years. The remaining 14 GWe largely reflects reactors expected to close before 2050 because of national policies, such as in Spain, or technical factors, such as the UK's AGR reactors. It also includes a small number of reactors that would exceed 80 years of operation by 2050. These are assumed to have closed for the purposes of this report, although operation beyond 80 years cannot be ruled out.

Growth in nuclear capacity to 2030 is expected to come primarily from reactors currently under construction, adding 56 GWe by 2030. A further 32 GWe of capacity now under construction is expected to enter operation by 2035.

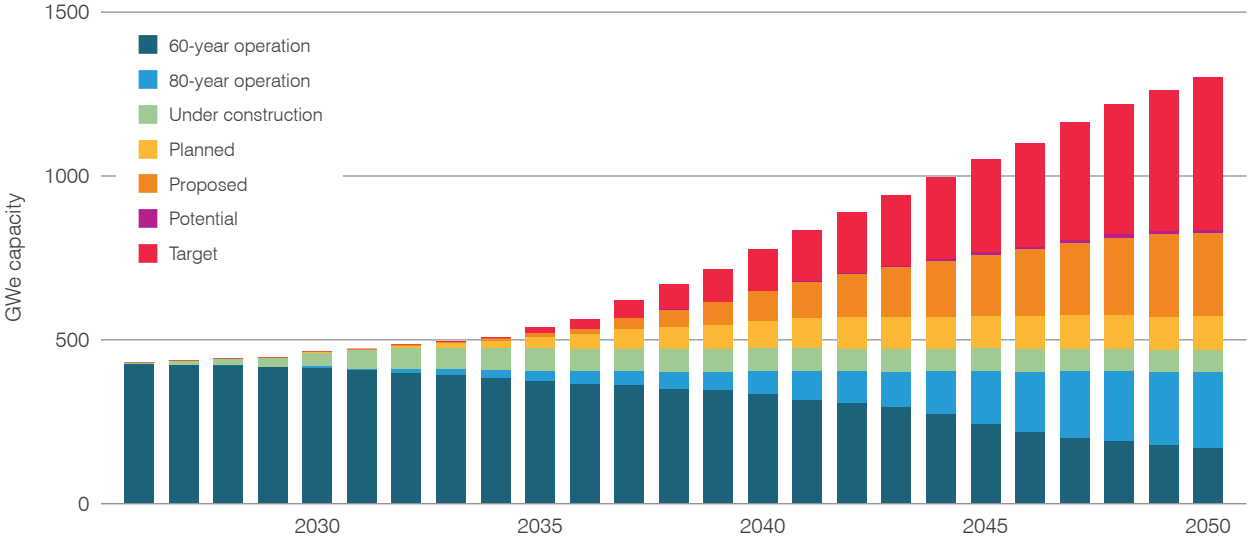
Planned reactors, defined as those usually expected to enter operation within 15 years, are projected to add 105 GWe by 2041 and a further 7 GWe by 2050.

Proposed reactors are projected to add 294 GWe by 2050, with more than half of this capacity entering operation between 2041 and 2050. A further 14 GWe is attributed to the Potential category. Beyond these identified projects, an additional 548 GWe would be required to meet stated government goals and targets.

3.3 Regional capacity projections

Of the projected total global nuclear capacity of 1467 GWe in 2050, 1314 GWe is in countries where nuclear reactors already operate. This capacity alone would be sufficient to meet the Declaration to Triple Nuclear Energy capacity goal, if the targets in these countries are met.

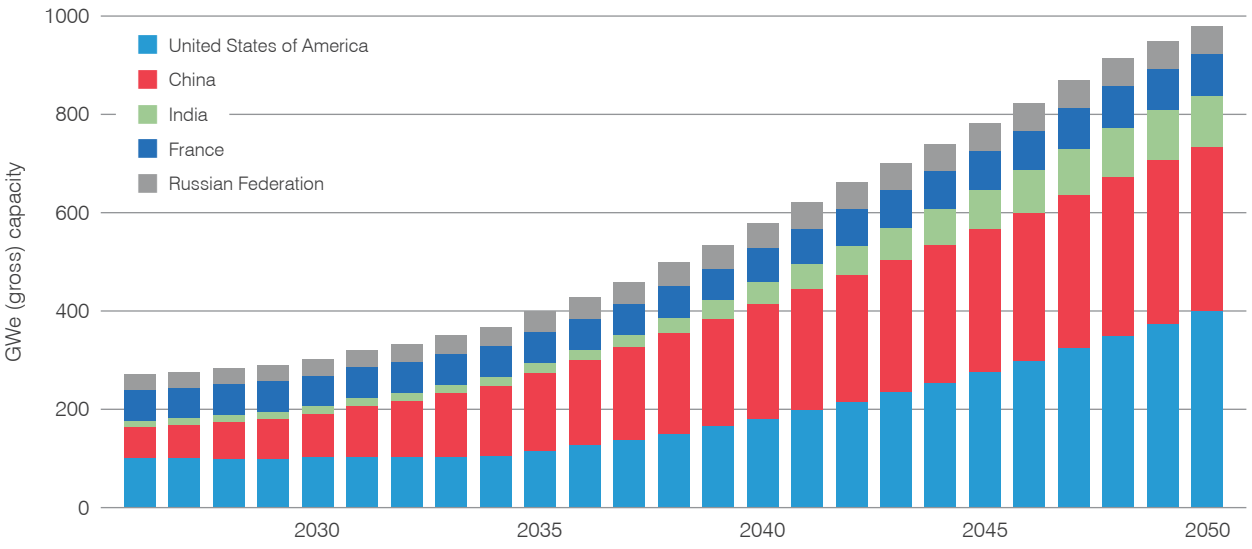
Figure 3.3 Nuclear capacity in countries that operate nuclear reactors in 2026, for the period 2026-2050



Source: World Nuclear Association

Five countries dominate the capacity: China, France, India, Russia and the USA, with a combined 993 GWe of nuclear capacity in 2050.

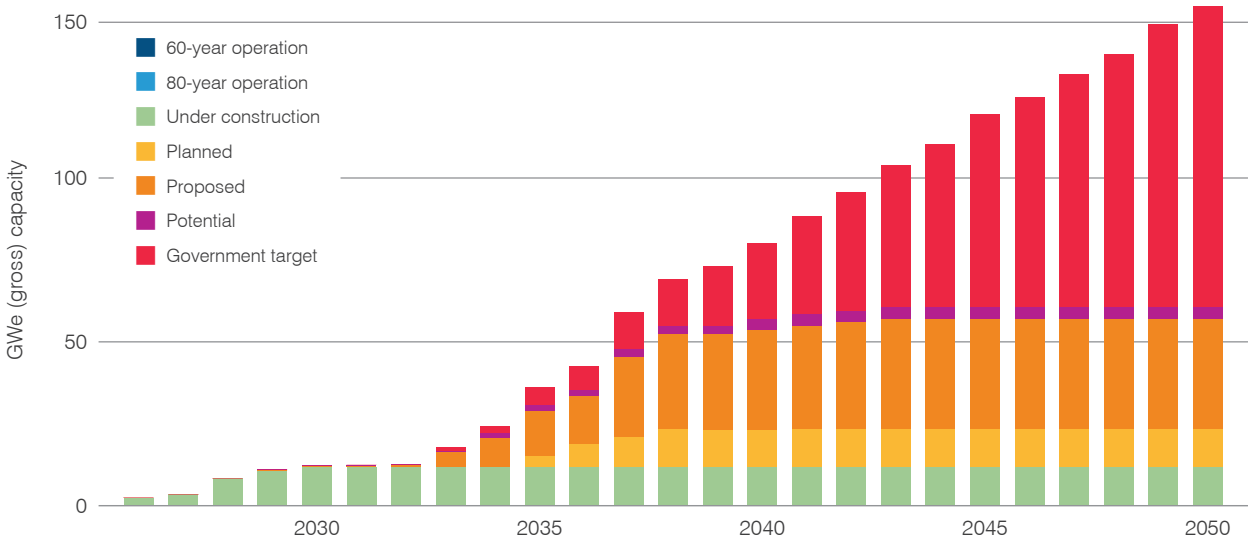
Figure 3.4 Nuclear capacity projections for China, France, India, Russia and USA, for the period 2026-2050



Source: World Nuclear Association

New entrant countries, including those with their first reactors under construction in 2025, are projected to reach a combined nuclear capacity of 153 GWe by 2050.

Figure 3.5 Nuclear capacity in countries not operating nuclear reactors in 2026, for the period 2026-2050



Source: World Nuclear Association

3.4 Analysis

The first edition of the *World Nuclear Outlook Report* concluded that national ambitions for future nuclear capacity, if delivered, would be sufficient to exceed the global goal of tripling nuclear capacity by 2050 from 2020 levels. This goal was first agreed at COP28 in Dubai in 2023 and has now been endorsed by 38 countries.

The second edition confirms this conclusion. Meeting current national goals would result in 1471 GWe of nuclear capacity operating in 2050, up slightly to the 1446 GWe projected in the first edition. Although less than a year has passed since the first report was published, there are some indications that nuclear development plans are becoming more concrete. Capacity associated with projects that are under construction or categorized as Planned has increased, while less certain and longer term Proposed and Potential capacity has decreased.

Nevertheless, around 550 GWe of the capacity required to meet national goals is not yet associated with projects classified as under construction, planned or proposed. In addition, not every planned or proposed project can be assumed to result in an operating reactor, and some existing reactors may not continue to operate to 2050.

The next chapter therefore assesses how well-prepared countries are to deliver their stated ambitions and the extent to which their nuclear capacity goals are likely to be achieved.

4 Assessment of readiness and progress towards national targets for nuclear capacity

Nuclear energy's contribution to climate change mitigation was formally recognized in the Global Stocktake document unanimously agreed at the COP28 climate change meeting held in 2023.

Nuclear's contribution to enhancing energy security and strengthening the resilience of energy supply has also become increasingly recognized during the energy crises that have occurred in the 2020s.

The significant policy support and ambition for an increase in global nuclear energy development and production means that, if met, governments' individual goals for future nuclear deployment would collectively lead to more than a tripling of global nuclear capacity by 2050, compared to 2020 levels.

The WNOR assessment framework evaluates countries' progress towards their stated goals and their readiness to implement and deliver new-build programmes. Countries are at various stages of development; many start from very different positions, with different infrastructure development and degrees of nuclear ambition. Some have active long-term new build programmes with reactor construction industries capable of delivering several units simultaneously; others have mature nuclear institutions and infrastructure but little or no active new-build programmes; and a growing number are considering nuclear power for the first time.

4.1 Methodology of country assessments

Countries have been assessed against four criteria. The first three – Policy Framework Readiness; Institutional & Infrastructure Readiness; and Project & Programme Development Readiness – assess the readiness of countries to deliver new nuclear capacity. The fourth criterion – Target Achievability – assesses the likelihood that a country will be able to achieve the targets for future nuclear capacity set by their government.

Policy Framework Readiness considers whether there is sustained political commitment to nuclear energy and whether that commitment has been translated into a clear policy framework. This includes national capacity or generation objectives, nuclear roadmaps, integration with wider energy and climate policy, arrangements for financing and revenue support, and the degree to which government policy provides a stable basis for long-term investment.

Institutional & Infrastructure Readiness assesses whether the organizations and wider infrastructure required to support a nuclear programme are in place and capable of operating at the scale envisaged. This includes regulatory capability and independence, legislation and nuclear liability arrangements, implementing organizations, workforce and skills, supply chain capability, fuel cycle arrangements, waste and spent fuel management, decommissioning and other supporting nuclear infrastructure.

Project & Programme Development Readiness assesses the extent to which policy has been converted into identifiable and deliverable reactor projects. Indicators include site selection and site investigation, technology selection, vendor and EPC arrangements, licensing and environmental approvals, ownership and project management structures, financing and final investment decisions, long-lead procurement, site preparation and progress towards or beyond first nuclear concrete. The assessment considers not only the maturity of individual projects but whether there is a credible programme capable of delivering successive projects where national objectives require multiple reactors.

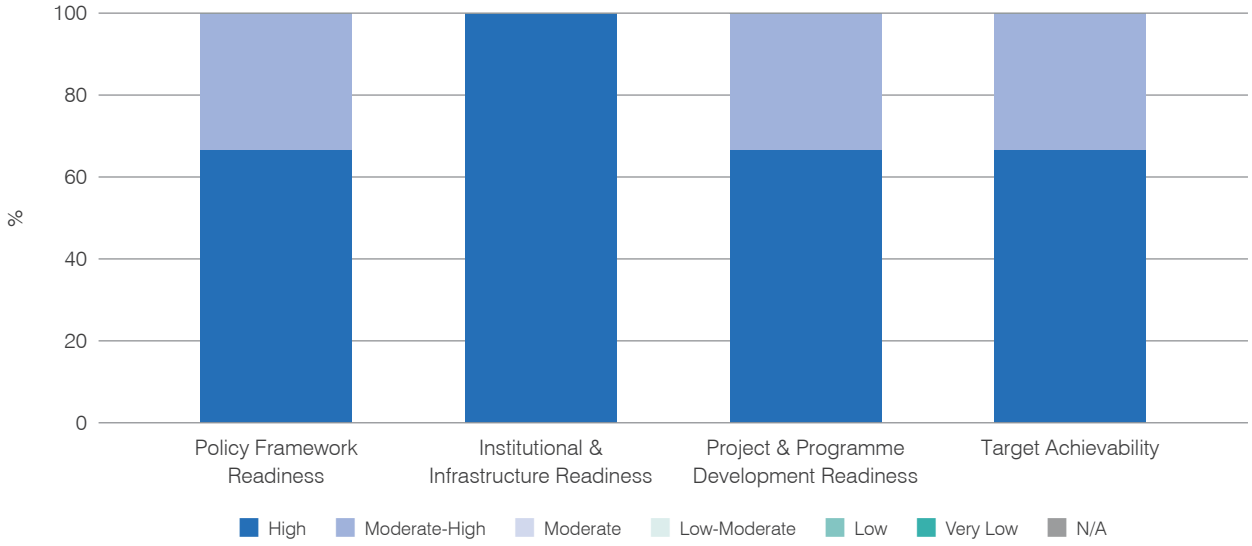
Target Achievability provides an overall assessment of the credibility of meeting the stated national nuclear objective. It considers the scale of the gap between existing and targeted capacity, the maturity and timing of the project pipeline, historical and current delivery performance, construction rates required, financing and industrial constraints, and whether sufficient projects have been identified to support the target. A country may therefore score strongly on the first three criteria but receive a lower rating here if its target requires a substantially greater rate of deployment than its current programme is capable of delivering. A low score might only be a reflection of a highly ambitious target and not a reflection of a country's readiness to engage in a new build programme.

Each country was individually assessed against these four criteria, and the results of these assessments are presented in this report. However, this section analyses the collective results of different groupings of countries that are at similar stages of nuclear deployment, termed Pacesetters, Expanders, Restarters, Newcomers and Candidates. These different groupings are described and assessed in the next section.

Additionally, countries that currently have operable reactors that could potentially still be in operation in 2050, but which have no plans or targets for new nuclear construction are termed **Maintainers**. As these countries have no intention to start new nuclear build they are not included in this assessment, although their potential contribution to global nuclear capacity in 2050 is covered elsewhere in this report.

4.2 Pacesetters: countries with active serial-build programmes

Figure 4.1 Ranking of Pacesetter countries against WNOR criteria



Source: World Nuclear Association

Pacesetters: China, Russia, South Korea

Pacesetter countries have had long-term programmes of nuclear build in the past and are broadly expected to continue those programmes into the future. Nuclear development is usually supported by ongoing supportive policy, established institutions experienced in new construction proposals and ongoing licensing, construction and commissioning of new reactors.

Regulators, utilities, vendors and construction organizations can apply experience from one project to subsequent units. A continuing order book gives supply chains an incentive to retain skilled workers and invest in manufacturing. Project organizations can also retain expertise instead of rebuilding teams after long gaps in construction.

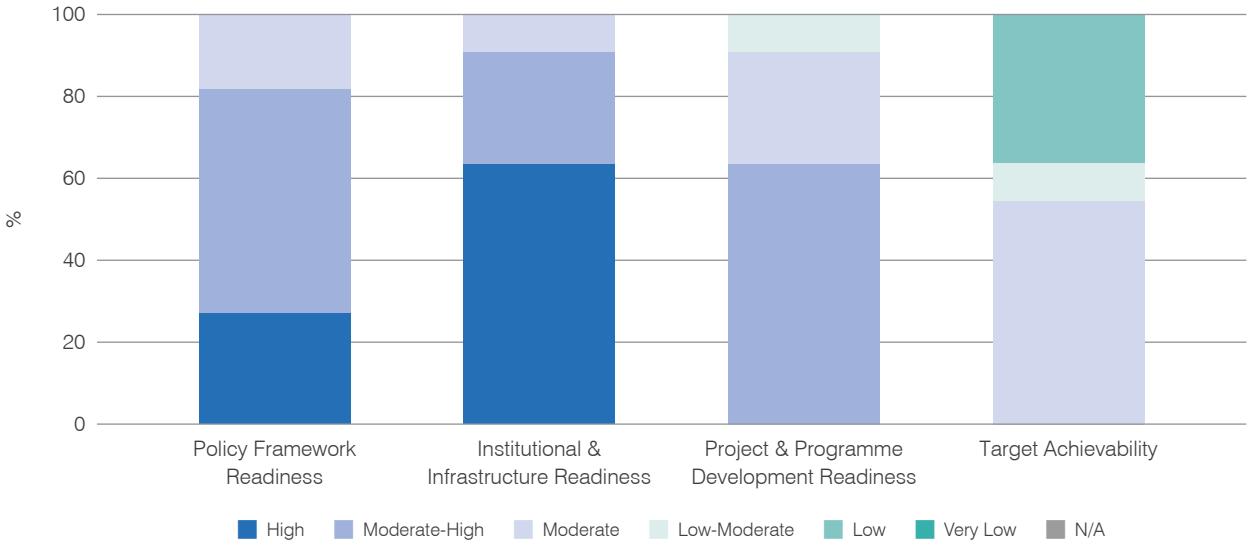
All Pacesetter countries have shown the value of fleet build of standardized designs, robust supply chains and experienced workforces, which has helped deliver more predictable project delivery schedules and control costs. Future expansion in these countries is more credible because an operating delivery system already exists.

Strong policy support has enabled the established long-term build programmes in these countries. The weakening of political support in South Korea earlier this decade created uncertainty and led to delays in its new build programme. Ongoing strong policy support will be necessary to enable these countries to continue to meet their nuclear capacity objectives.

For these countries, the priority is to maintain continuity of expertise and institutional capacity. Stable forward programmes give utilities and suppliers greater confidence to retain skilled workforces and invest in manufacturing.

4.3 Expanders: countries with active programmes

Figure 4.2 Ranking of Expander countries against WNOR criteria



Source: World Nuclear Association

Expanders: Canada, Czech Republic, Finland, France, Hungary, India, Iran, Pakistan, Slovakia, United Kingdom, United States

Expander countries have active or recent nuclear build, but have not maintained ongoing programmes of build over the longer term.

With ongoing operation of existing reactors and recent new build activity, Policy Framework Readiness and Institutional & Infrastructure Readiness to support licensing, construction and commissioning are often present, although not necessarily at the scale required for the targeted expansion of new-build programmes.

For these countries, the priority is to build on the momentum of the recent construction projects to achieve the benefits of serial build. If this can be achieved, Expander countries will transition to Pacesetter country status.

In North America, the United States and Canada have long-established nuclear industries, large operating fleets and significant technical capabilities. Both envisage a larger future role for nuclear, are supporting SMRs and advanced reactors, and remain committed to new large reactors. Extending existing fleet operating lifetimes can also make a significant contribution to their capacity goals.

Countries can be categorized as Expander countries even if they have had a long history of new nuclear build, if the scale of that new build is significantly smaller than what would be required to meet government goals, or if much larger new-build programmes are targeted. India is one such country. It has maintained an ongoing build programme, but after nearly six decades of power reactor operation its current 8 GWe of nuclear capacity remains relatively low, supplying just 3% of the country's electricity. Meeting the government's objective of 100 GWe by 2047 will require a substantial increase in construction. The key question is not whether India can construct and operate nuclear plants – it clearly can – but whether reactor deployment, financing and industrial production can scale fast enough to support the much larger programme envisaged.

France retains a large nuclear utility, domestic industrial capability and extensive regulatory experience. Its future capacity will depend on two related processes: the degree to which long-term operation is implemented for the existing fleet and the scale of the EPR2 programme.

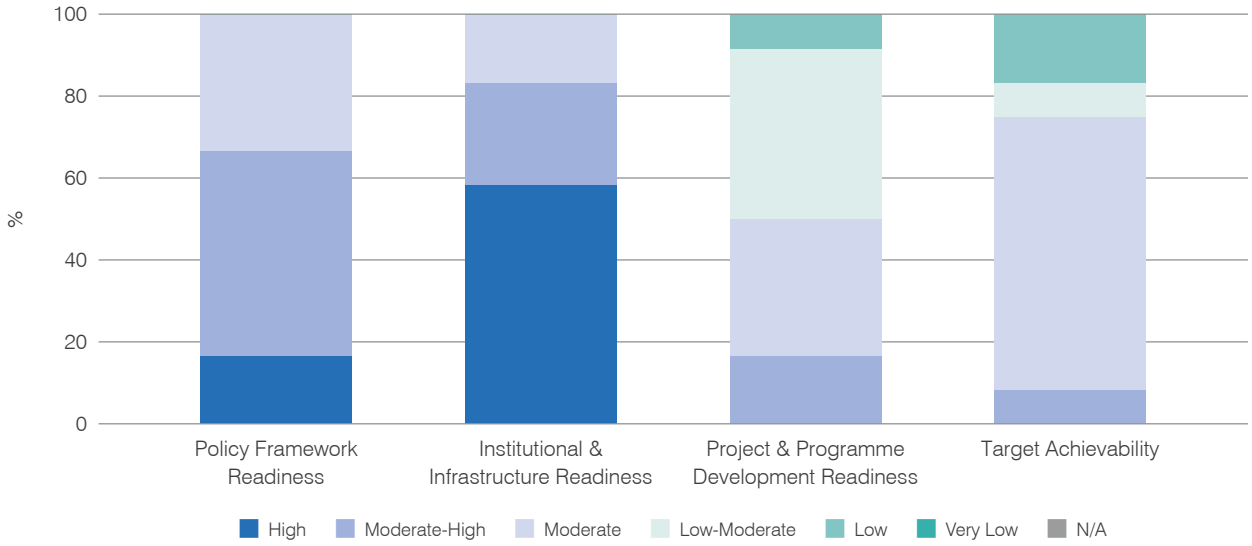
In the United Kingdom, construction at Hinkley Point C is expected to be followed by Sizewell C and the initial SMR construction at Wylfa. Delivering the UK's longer-term ambition will depend on these projects being part of an ongoing sequence rather than isolated investments.

Expander countries typically benefit from good existing institutional and infrastructure capacity, including for licensing and permitting. However, lack of ongoing new-build programmes has often meant that construction projects have been affected by first-of-a-kind issues such as significant project overruns and cost increases, such as those encountered at Hinkley Point C, Flamanville 3 and Vogtle 3&4.

To overcome these issues, Expander countries need to recognize the importance of an ongoing nuclear programme that can deliver the cost benefits of series build of standardized designs. An expanded nuclear build programme will require a framework that will allocate finance risk appropriately between public and private sectors. The accelerated pace of construction will require regulatory optimization to ensure there is sufficient capacity to accelerate licensing and permitting. An accelerated new-build programme will also require sufficient supply chain capacity and skills development.

4.4 Restarters: countries with operating nuclear plants that are rebuilding construction capability

Figure 4.3 Ranking of Restarter countries against WNOR criteria



Source: World Nuclear Association

Restarters: Argentina, Armenia, Belgium, Brazil, Bulgaria, Japan, Netherlands, Romania, Slovenia, South Africa, Sweden, Ukraine

Restarter countries have substantial operating fleets and mature nuclear institutions but limited recent experience of continuous new construction.

Institutional & Infrastructure Readiness is often comparatively strong in these countries. They typically have experienced regulators, operating utilities, established nuclear legislation, nuclear sites, research organizations and arrangements for waste management and emergency preparedness. Many also retain substantial engineering and industrial capability. However, the focus of these institutions will be on the continued operation of existing plants, not the requirements of a new-build programme. For example, regulators may not be suitably equipped to assess new reactor designs.

These countries need to scale this institutional base to support the larger project pipelines required by their renewed national ambitions.

Much of the near-term contribution to capacity is likely to come from the existing fleet through operating lifetime extensions, refurbishment, uprates and potentially reactor restarts. New construction is progressing, but meeting longer-term ambitions will require a substantial increase in project throughput.

A similar pattern appears in West & Central Europe. Political support for nuclear power has strengthened in several countries, and some previous phase-out policies have been reversed or substantially modified. Governments are also increasingly considering direct involvement in financing or revenue-support arrangements. This creates a more supportive investment environment, but moving from strengthened policy support to repeated construction takes time.

Sweden and Belgium show how quickly policy can shift in favour of additional nuclear generation. The next step is to convert that policy support into durable project structures by identifying owners, sites, financing mechanisms for investment decisions.

Existing nuclear capability lowers many barriers, but constructing one reactor periodically requires different capabilities from managing several projects simultaneously. Regulators and project organizations may need to expand, while manufacturing facilities may require investment to support higher throughput.

Across this group, the priority is to move from project-specific solutions to programme-level arrangements. A financing mechanism created for one reactor may enable that project to proceed, but a national target requiring several projects needs a reusable framework. The same applies to licensing, supply-chain development and workforce planning.

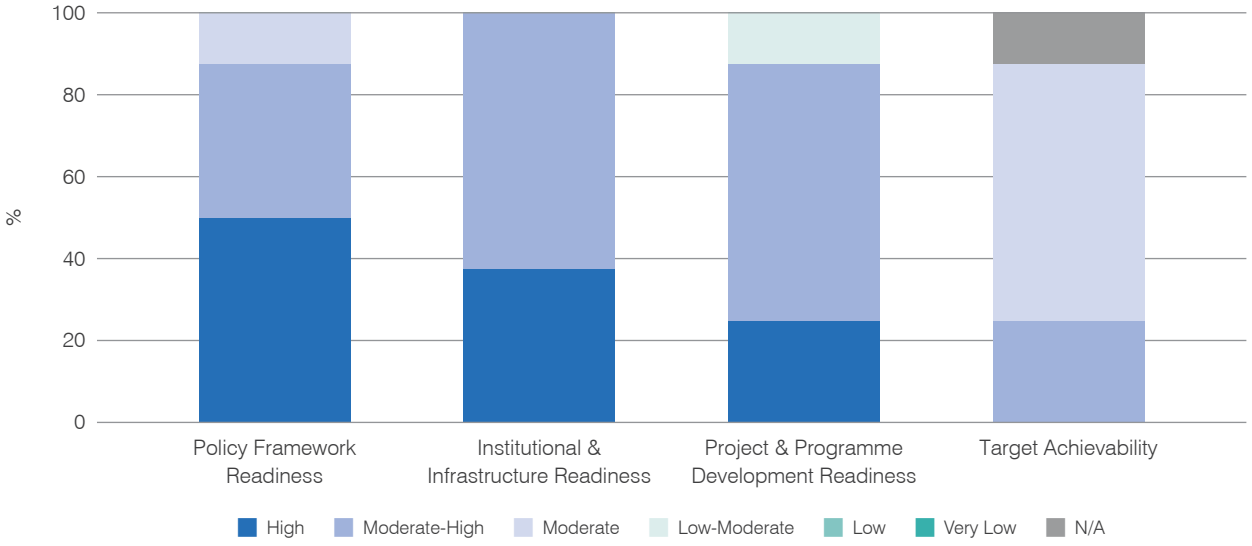
Several countries in this group are considering large reactors, SMRs, advanced reactors, reactor restarts and operating lifetime extensions concomitantly. All can contribute to overall capacity goals, but pursuing multiple streams will require greater regulatory and industrial capacity.

SMRs could become an important route to renewed deployment. These countries have extensive nuclear infrastructure, technical capability and potential markets that favour deployment. The key transition will come when demonstration and first commercial projects lead to repeat orders. A stable order book will be important for long-term deployment.

The outlook for Restarters is positive. Much of the institutional infrastructure already exists. The principal opportunity is to convert existing capability and renewed policy support into continuous construction. If they do so, these countries could provide substantial additional capacity by 2050.

4.5 Newcomers: countries with a first nuclear project under construction or advanced development

Figure 4.4 Ranking of Newcomer countries against WNOR criteria



Source: World Nuclear Association

Newcomers: Bangladesh, Belarus, Egypt, Kazakhstan, Poland, Türkiye, United Arab Emirates, Uzbekistan

Newcomer countries either have their first reactor under construction, have reached an advanced stage of preparation, with construction expected in the near term, or have completed their first plant construction within the last ten years.

A country's first project is a critical transition point. It converts general policy commitments into decisions on ownership, technology, site development, financing, licensing and workforce preparation.

Türkiye and Bangladesh are well established in this category, with their first units expected to start-up in the next 12 months. Their first plants provide practical experience in developing and regulating multi-unit sites. Future projects at other sites can build on that experience.

Subsequent projects may involve different vendors, financing arrangements and technology partnerships. A priority should therefore be to ensure that experience from the first programme strengthens domestic institutions and transfers to later projects.

Poland has moved well beyond general consideration of nuclear power, with its first construction programme expected to begin in the next year or two.

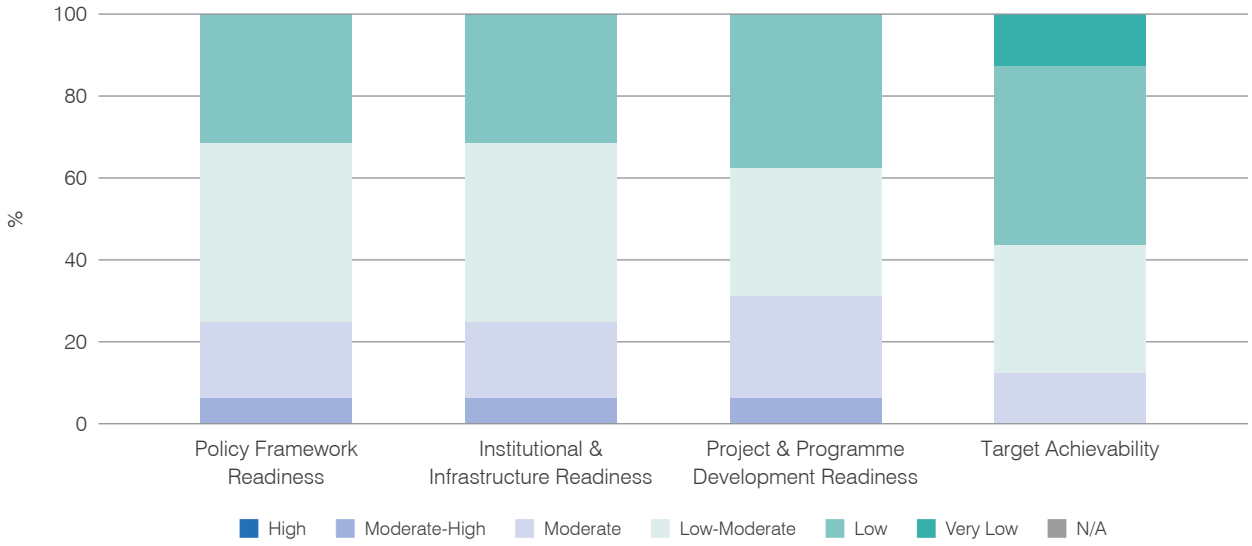
The country has identified sites and technologies for its principal large-reactor programme and undertaken significant institutional preparation. A wider range of potential large-reactor and SMR projects have also been proposed by different organizations.

Kazakhstan is well advanced in its plans for its first reactor construction at Balkhash; Russia and Kazakhstan have signed an international construction agreement and export loan agreement.

For Newcomers with a defined first project, the main recommendation is to use that project as a platform for the programme that follows. Workforce development, regulatory learning, supply-chain participation and project-management capability should all be designed with future units in mind. If follow-on decisions wait until construction ends, much of the newly-developed workforce and supply chain may disperse. A staged programme, with future decisions prepared alongside the first project will help ensure that a transition into a larger fleet deployment can incorporate lessons-learned from the first project.

4.6 Candidates: countries actively planning new build

Figure 4.5 Ranking of Candidate countries against WNOR criteria



Source: World Nuclear Association

Candidates: Ecuador, Estonia, Ghana, Indonesia, Italy, Kenya, Nigeria, Philippines, Saudi Arabia, Serbia, Sri Lanka, Thailand, Uganda, Vietnam

Candidate countries have decided that nuclear should form part of their future energy mix, distinguishing themselves from countries where nuclear is being evaluated as a future option.

For most of these countries this will first be established through a clear policy position. Beyond this milestone countries will establish programmes, begin site studies, develop regulatory institutions and enter discussions with potential vendors.

Southeast Asia contains a significant concentration of potential new entrants. Indonesia, Vietnam, the Philippines and Thailand are all advancing with nuclear energy playing a future role, although their programmes are at different stages.

Several have large and rapidly growing economies, substantial engineering and manufacturing sectors, experience with major infrastructure projects and broad technical expertise. Electricity demand is expected to rise substantially, while energy security, over-reliance on fossil fuel imports and decarbonization strengthen the case for nuclear energy.

Southeast Asian programmes therefore have significant long-term potential if political interest is converted into stable programme structures.

These countries should progress through institutional and project-development stages in ways that reflect their electricity systems. Reactor technology is only one part of the decision. Grid requirements, financing, domestic industrial participation, regulatory development, public engagement and ownership models will also determine appropriate technologies and project sizes.

For SMRs, smaller units may suit some electricity systems and allow programmes to grow incrementally, while others intend to pursue larger reactors. The regulatory, site, financing and workforce foundations required for nuclear power will remain valuable whichever technology is selected.

Regional cooperation would assist in the development of nuclear energy in Southeast Asia, and for other regions, such as Africa, Central Asia and Latin America. Regional cooperation can support programme development, cooperation on workforce training, regulatory knowledge, emergency planning, supply-chain qualification and technical education to help national programmes draw on a wider regional skills base.

High upfront capital costs are a challenge for nuclear projects everywhere, but in some Candidate countries the challenge is broader than financing a power plant alone. Such countries are simultaneously investing in electricity generation, transmission grids, distribution infrastructure, industrial development, transportation and other national priorities, all while facing constraints related to sovereign credit ratings and access to affordable long-term capital. This means that nuclear financing must be considered as part of a wider economic development and infrastructure strategy, rather than as a standalone energy project.

Nuclear can be a powerful part of that broader development agenda, but success will require innovative partnerships, patient capital and sustained international cooperation. Nuclear milestones should be linked to wider electricity-sector milestones. Site development, regulator capability, grid reinforcement and financing readiness can provide intermediate measures of progress before construction begins.

Where long-term nuclear requirements could be large, but programme capability is still developing, a manageable initial project can provide a stronger foundation than defining an entire multi-gigawatt fleet at the outset. This can establish the institutions and experience needed for later expansion.

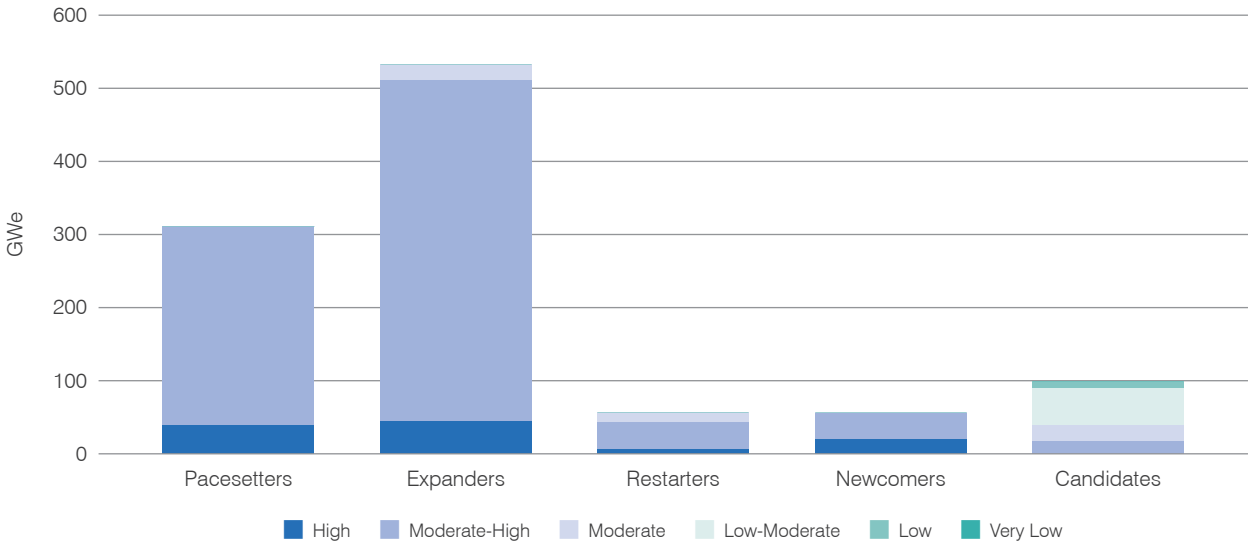
In those countries in Africa and Central Asia that have significant uranium reserves and resources, linking uranium resources with the deployment of nuclear energy itself, creating the reliable, low-carbon power needed to support sustainable mining, manufacturing and other energy-intensive industries may present significant opportunities.

4.7 Assessment in the context of the capacity contribution

Figures 4.1-4.5 in the above assessment of the country groupings present the analysis with equal weighting for each country. However, the potential contribution made by countries to meeting the global tripling will be determined by the capacity each category contributes.

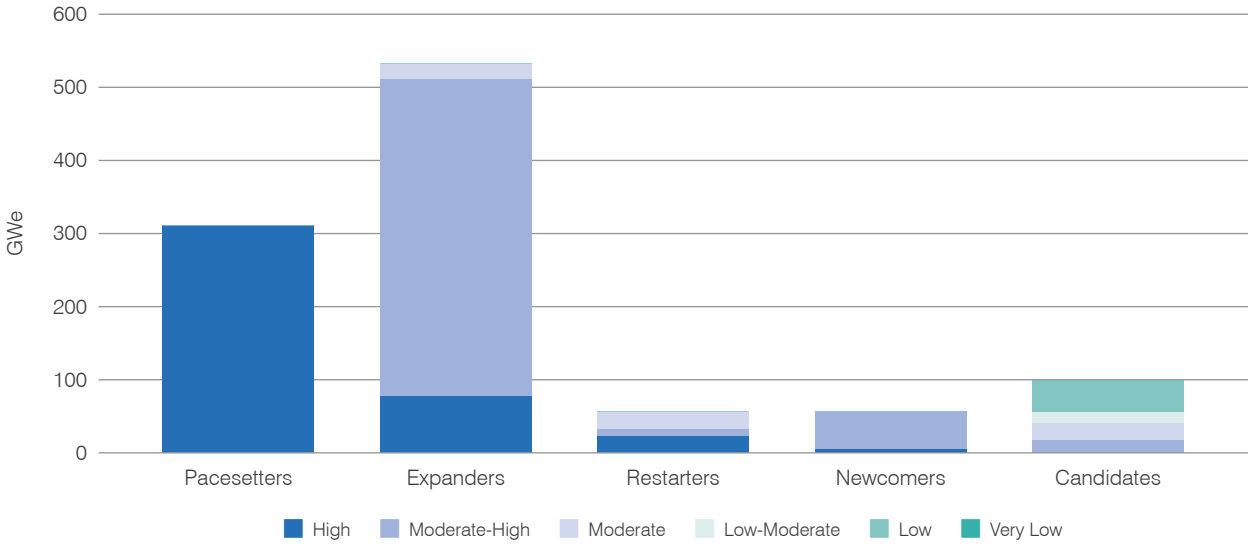
Figures 4.6-4.9 show capacity-weighted interpretations of the WNOR assessments. Note that the capacity-weighted assessments include reactor capacity in the categories: Under Construction, Planned, Proposed and Potential, as well as the additional capacity required to meet national targets. It does not include capacity associated with the continued operation of existing reactors.

Figure 4.6 Ranking of country groupings on Policy Framework Readiness



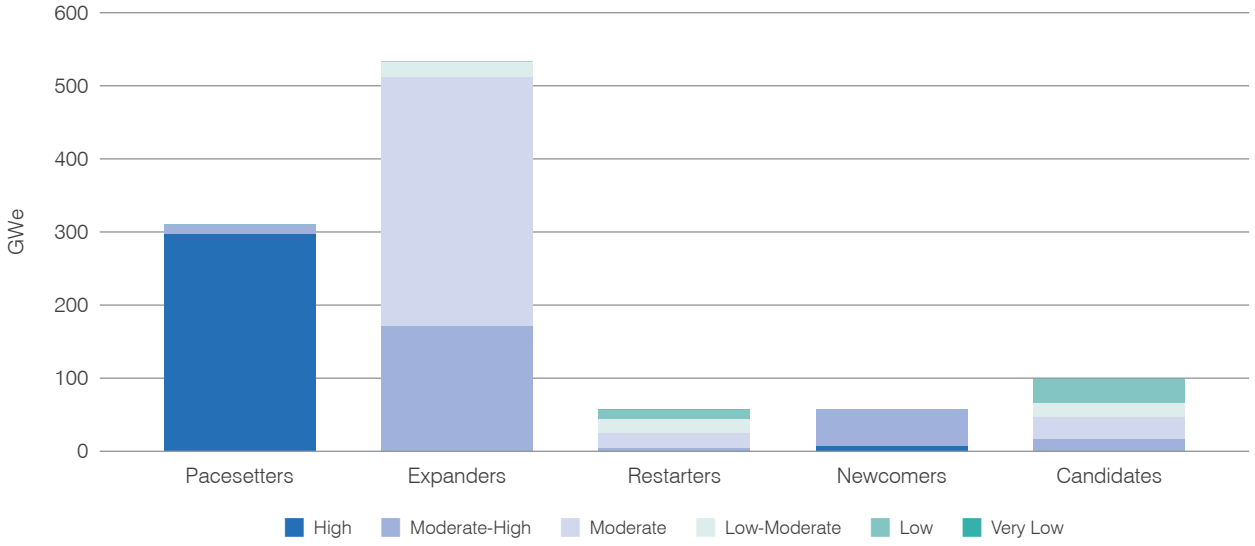
Source: World Nuclear Association

Figure 4.7 Ranking of country groupings for Institutional & Infrastructure Readiness



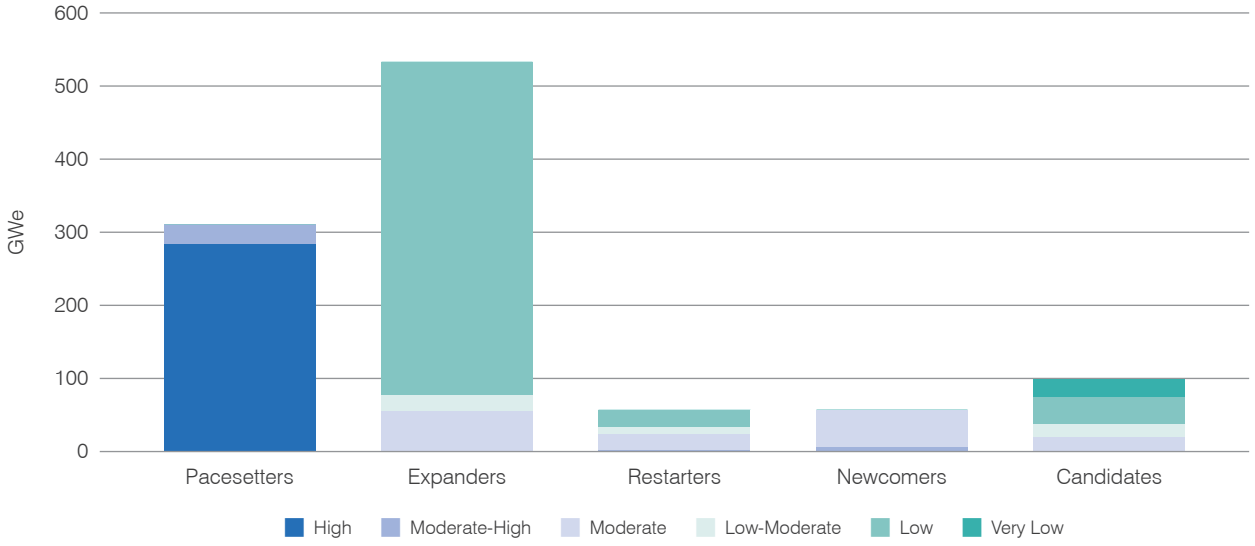
Source: World Nuclear Association

Figure 4.8 Ranking of country groupings for Project & Programme Development Readiness



Source: World Nuclear Association

Figure 4.9 Ranking of country groupings against WNOR criteria for Target Achievability



Source: World Nuclear Association

The largest quantity of prospective nuclear capacity is associated with the Expander countries, with a total capacity of around 530 GWe, followed by Pacesetter countries, with a total capacity of just over 300 GWe.

While the Pacesetter countries are rated quite highly against all four criteria, Expanders are rated almost equally highly for Policy Framework Readiness and Institutional & Infrastructure Readiness, but much of the Expander capacity is not yet matched by equally strong rankings against the Project & Programme Development Readiness or Target Achievability criteria.

This shows that in many of the countries representing the largest prospective capacity, policy commitment is already comparatively strong, however the challenge will be to translate that commitment into specific, financed, licensed and repeatable projects at the pace required by national targets.

The ratings of the Restarters become progressively weaker from Policy Framework Readiness and Institutional & Infrastructure Readiness through to Project & Programme Development Readiness and Target Achievability. This is consistent with countries that retain nuclear knowledge and institutions but have not recently sustained serial construction programmes. For this group, the focus needs to be on rebuilding project pipelines, supply-chain capability, financing arrangements and experienced delivery organizations.

For Newcomers, the rankings for Policy Framework Readiness, Institutional & Infrastructure Readiness and Project & Programme Development Readiness are relatively high, but Target Achievability is ranked weaker.

The capacity contribution of Candidate countries is around 100 GWe. There is a great deal of variation in the rankings given to different countries, although rankings for Project & Programme Development Readiness and Target Achievability are lower overall. Much of the capacity in this category remains at an earlier stage where the decisions and institutions necessary for credible deployment have yet to be completed.

4.8 Common findings from country readiness assessments

The WNOR country assessments show that prospects for achieving national nuclear objectives – and collectively progressing towards tripling global nuclear capacity by 2050 – depend on many factors. For some countries there is high confidence they will be able to meet their targets, while others will require significant action to make sufficient progress.

Countries will follow different pathways, depending on their individual circumstances. The assessments cover programmes operating under very different political systems, electricity markets, industrial structures and financing models. For established nuclear countries and new entrants alike, targets can provide policy direction, but they become more credible when supported by institutions, financing frameworks, building supply chains, skilled workforces and identifiable projects.

There are also recognizable geographical patterns. In North America, the United States and Canada both combine substantial nuclear industries with renewed ambitions for expansion and considerable innovation in new nuclear technologies, such as a wider range of SMR designs. They are assessed to have recently transitioned from Restarter to Expander.

In Southeast Asia, several countries are currently Candidates but may soon transition to Newcomer status. Many have rapidly growing economies, sophisticated industrial sectors and broad technical capabilities that provide a solid foundation for nuclear development.

Several European countries are classified as Restarter countries – mature nuclear institutions and increasing political support, but a need to rebuild the supply chains and project-delivery capabilities required for sustained new construction.

The country readiness assessments identify a series of programme archetypes rather than a simple division between countries that are ‘ready’ and those that are not. Each has different strengths and would benefit from different actions to improve delivery of national objectives.

4.9 Implications for the global tripling objective

The global challenge is not evenly distributed among dozens of countries. A very large share of the capacity that would contribute to expansion is concentrated in a relatively small number of Expanders and Pacesetters. Consequently, the global outcome will depend disproportionately on whether Pacesetters can maintain high build rates, while Expanders convert large policy ambitions into committed project pipelines and sustained construction programmes.

Newcomers and Candidates will contribute to broadening nuclear deployment geographically and creating growth beyond the existing nuclear markets, but in absolute capacity terms they cannot compensate by themselves for major under-delivery among the large Expander programmes.

4.10 Interpreting country capacity target assessments

The low rankings of some Expander countries for achieving their national capacity target goals does not necessarily mean that those countries will not have a significant quantity of additional nuclear capacity by 2050. Countries such as the USA and India have very high 2050 capacity goals, which are currently assessed as unlikely to be met. At the same time, they are expected to make significant contributions to achieving the global tripling target.

4.11 Opportunities to strengthen delivery

Across the WNOR country assessments, several recommendations apply to countries at different stages of nuclear development.

First, long-term targets should be translated into near to intermediate-term programme milestones, such as site selection, financing decisions, licensing applications, first concrete, commissioning of initial projects and subsequent orders.

These milestones allow progress towards the tripling objective to be measured through observable programme development well before the target year.

Second, programme continuity matters across almost every category. Serial builders need it to preserve their advantage. Mature nuclear countries need it to rebuild construction capability. Intermittent builders need it to increase deployment rates. New entrants need it to retain expertise and capabilities developed for their first project.

A programme of several units built in a reasonably continuous sequence may be easier to sustain industrially than the same number of reactors delivered as unrelated projects over several decades.

Third, institutional capacity must match the scale of the objective. The question is not simply whether a country has a regulator, an owner-operator or an engineering supply chain, but whether those organizations can realistically support the number and variety of projects envisaged.

For established nuclear countries, this may mean expanding existing organizations. For newcomers, it may mean ensuring that institutions created for the first project can develop into permanent national organizations. In both cases, workforce planning will become increasingly important as more countries expand nuclear programmes simultaneously.

Fourth, financing should be treated as a programme capability, not only a project requirement. Financing must be designed into a nuclear project from its inception, rather than treated as an afterthought. The objective should be to move beyond bespoke financing for individual plants and establish standardized, repeatable frameworks that enable nuclear projects to access mainstream infrastructure finance at scale. Standardization, fleet deployment and successful repetition should reduce perceived risk, transaction costs and the cost of capital.

Fifth, technology strategy and programme strategy must be considered together. Large reactors, SMRs and advanced reactors may all have roles, but each additional technology adds demands on regulators, utilities and supply chains. Countries with sufficient scale may sustain several technology streams; others may benefit from greater standardization, particularly during early programme development.

This is particularly relevant to countries considering SMRs as a significant part of future capacity. SMRs may offer advantages where smaller unit size, incremental deployment or industrial applications matter. Their contribution will become more credible as first projects enter construction and lead to repeat orders. Countries can prepare by developing technology-neutral elements of nuclear readiness – sites, regulation, workforce, financing frameworks and grid planning – without determining every aspect of the eventual reactor fleet.

Finally, maintaining existing nuclear capacity is important alongside developing new projects. In countries with mature fleets, operating lifetime extension can make a major contribution to capacity available in 2050. Continued operation also preserves skills, operating organizations, sites and supply chains that can support future construction.

4.12 Progress towards tripling nuclear capacity

Established nuclear countries are reconsidering expansion, several governments have reversed earlier restrictions on new nuclear development, and a growing number of new entrants are incorporating nuclear power into long-term energy strategies.

This broadening of interest matters because tripling global capacity is unlikely to depend on one region or one reactor technology. Different groups of countries are also likely to contribute at different stages.

Active serial builders are best placed to add significant capacity in the near and medium term because they already have functioning delivery systems. Mature nuclear countries could contribute increasingly as financing arrangements, supply chains and project pipelines develop. New entrants can add further capacity during the 2030s and 2040s, while emerging programmes represent an important source of longer-term growth.

For serial-build countries, the priority is to maintain continuity, standardization and an investable project pipeline. Mature nuclear countries need to convert renewed policy support and strong institutions into repeatable financing and construction programmes. New entrants need to move from policy commitment through institutional development to a well-defined first project, while using that project to build capabilities for subsequent deployment.

5 Policy Recommendations for Tripling Global Nuclear Capacity

Achieving national nuclear energy ambitions and contributing to the global goal of tripling nuclear capacity by 2050 (compared with 2020 capacity) will require action across policy, finance, regulation, industrial delivery, fuel supply, workforce development and public engagement. The recommendations below describe how to overcome common barriers to deployment and recommend actions for governments, regulators, industry, financial institutions and international organizations to help meet the tripling goal.

5.1 Energy and Sustainable Economic Development Policy

Governments can create national and international policy frameworks that specifically recognize nuclear's contribution to energy security, sustainability and socio-economic growth.

5.1.1 Articulating long-term national commitment to nuclear energy

Clear articulation of the strategic importance of nuclear energy within long-term national energy policy, and its role in contributing to national energy, industrial, economic and social development objectives will strengthen alignment between energy system planning and industrial capability development.

Multi-decade deployment pipelines will provide confidence for long-term investment, enabling the nuclear industry to scale capabilities, reduce costs, and deliver projects more efficiently.

5.1.2 Recognizing nuclear's contribution to energy security

To ensure long-term resilience of the energy system, the transition to a clean and sustainable low-carbon economy will require a diversified energy mix providing security of supply, dispatchable power and critical infrastructure resilience. Nuclear energy's contribution to achieving these goals should be recognized in energy and industrial policies.

5.1.3 Supporting nuclear energy in international frameworks, including those addressing climate change

Governments and international organizations can help ensure that countries choosing to use nuclear energy have access to relevant policy support, financing mechanisms, technical cooperation and capacity-building initiatives by explicitly articulating the strategic importance of nuclear energy within international policy, regulations and standards. World Nuclear Association also recommends that, where governments pursue harmonization of different national climate and environmental regulations, these harmonized regulations recognize the value of nuclear energy.

5.2 Financing and Market Design

Governments and the nuclear industry should work together to create a favourable investment environment for nuclear energy as a strategic national asset.

5.2.1 Minimizing political risk through long-term policy commitment

Consistent policy frameworks that provide clear, long-term assurances of a government's commitment to nuclear power are essential to reducing risk and attracting nuclear investment. Such commitments will help lower financing costs and encourage private sector participation.

5.2.2 Establishing financing frameworks with appropriate risk sharing

To enable the large upfront capital investment required for nuclear projects, funding mechanisms should be established that allocate risk appropriately between public and private actors, taking into account the long-term benefits to both. Such frameworks should help close financing gaps and reflect the long-term economic and societal benefits of nuclear infrastructure.

5.2.3 Designing energy and electricity markets to reflect nuclear system value and support long-term investment and capacity value

Electricity markets should be reformed to recognize the system costs associated with each generation technology and enable nuclear to compete on equal terms. This should include mechanisms to reward low-carbon generation, reliability, system services, and long-term capacity contributions and provide stable long-term revenue signals. This will support investment decisions and enable sustained deployment.

5.2.4 Mobilizing a full range of public, private and multilateral financial institutions to support nuclear deployment

Ensuring availability of financing and facilitating risk assessment processes will encourage nuclear investment, particularly in nuclear newcomer countries. Multilateral development banks can provide catalytic investment that attracts private capital.

Governments, through their role in setting the lending policies of multilateral development banks, can ensure that those financial institutions provide assessment and

due diligence services that facilitate private investment in nuclear energy.

Given their mandate, multilateral development banks could also consider establishing dedicated technical assistance programmes, offering grant-based financing for institutional capacity building – particularly the preparation of regulatory frameworks, staff training, and public education on the benefits of nuclear energy in nuclear newcomer countries.

Multilateral development banks could also complement government guarantees to reduce risk and enable broader participation, for example by underwriting those guarantees.

Export credit institutions are able to help reduce the financing risk and cost of nuclear projects, particularly where equipment, technology or services are supplied internationally. They can provide or guarantee long-term debt, cover political and sovereign risks, and support repayment periods better aligned with the long construction and operating life of nuclear plants. This can improve lender confidence, lower interest costs and help attract additional commercial finance.

5.2.5 Including nuclear energy in climate and sustainable finance frameworks

Recognizing nuclear energy's low-carbon and sustainability credentials in sustainable finance frameworks will help enable access to green finance. Some governments and nuclear utilities have issued green bonds for investment for nuclear energy.

Climate and sustainable finance frameworks must fully recognize the long-term sustainable attributes of nuclear energy. This will enable stronger cooperation between the industry and financial institutions and unlock access to green and sustainable finance.

5.3 Regulation and Permitting

World Nuclear Association recommends optimizing the regulatory process, particularly where reactors are being deployed in multiple jurisdictions, and ensuring that regulators have the mandate and resources to carry out their duties in a timely manner.

5.3.1 Streamlining the regulatory process across jurisdictions

Greater coordination between regulatory frameworks should be pursued to streamline the review and approval of reactor designs across jurisdictions. More efficient regulatory processes can reduce unnecessary duplication and accelerate deployment while maintaining high standards of nuclear safety.

A coordinated approach to nuclear infrastructure development, licensing and permitting can optimize the use of regulatory resources, shorten project timelines and lower costs without compromising safety. These efforts can draw on the experience of countries that have successfully deployed standardized reactor designs across multiple sites, using repeatable licensing approaches to improve efficiency and reduce both approval times and costs.

5.3.2 Adopting risk-informed and proportionate regulatory approaches

Application of regulatory frameworks should be proportionate to safety risks, to avoid inefficiencies and unnecessary costs that would otherwise divert resources away from safety-significant issues.

The risk calculation should also take account of the benefits of nuclear technology to society, including the avoidance of external risks posed by technologies that would otherwise be deployed in its place.

By adopting technology-neutral, risk-informed, and goal-oriented approaches, regulators can focus on safety-significant risks and ensure proportionate application of principles such as ALARA (as low as reasonably achievable) or ALARP (as low as reasonably practicable).

5.3.3 Pursuing international cooperation to leverage existing regulatory assessment and approvals

Optimizing design review processes across jurisdictions will reduce delays, lower costs, and increase efficiency in nuclear deployment.

World Nuclear Association recommends improved cooperation between national and international regulatory agencies, for example by carrying out joint reviews or maximizing the use of design review work already undertaken by credible international counterparts. Design changes should be limited to site-specific requirements to preserve standardization.

5.3.4 Streamlining and coordinating regulatory approaches to nuclear infrastructure development and permitting

Nuclear development often involves multiple national regulatory bodies, covering planning, safety and environmental requirements.

Governments can promote a coordinated regulatory approach to facilitate a streamlined decision-making process for nuclear development, licensing and permitting that will allow for lowering the cost of nuclear without impacting safety.

5.4 Optimizing the Use of Existing Reactors

Maximizing the contribution of existing nuclear capacity through lifetime extension, uprates, reactor restarts and proportionate regulation.

5.4.1 Extending operations and uprating existing capacity

Many currently operable reactors could deliver additional generation through capacity uprates and through extending planned operating lifetimes. Such measures represent the most cost-effective forms of additional low-carbon generation.

5.4.2 Supporting the restart of reactors

Restarting reactors that have closed before the end of their technically achievable operating lives because of policy decisions, market conditions or other non-technical factors will help to maximize secure, low-carbon generation.

Collaboration between governments, institutional investors and the nuclear industry can support the engineering and associated works required to restart such reactors.

5.4.3 Ensuring regulatory proportionality is applied to long-term operation

Regulating the lifetime extension of existing nuclear reactors requires a balance between safety oversight and the efficient use of existing low-carbon assets. Regulatory proportionality ensures that the administrative burden on operators reflects the actual level of risk, enabling plants to safely extend operation.

5.5 Nuclear Technology Development and Deployment

Accelerating nuclear deployment through proven reactor designs, innovative SMRs and wider decarbonization applications

5.5.1 Utilizing commercially available nuclear reactor designs to accelerate near-term deployment

There is an urgent need to scale nuclear capacity if countries are to meet rising electricity demand, strengthen energy security and achieve deep decarbonization. While advanced and emerging reactor technologies will play an important role in the mid- to long-term, commercially available reactor designs offer the most immediate pathway for deploying new nuclear capacity at scale.

Proven large reactor technologies already have operating experience, established supply chains, mature licensing bases and a track record of delivering substantial volumes of reliable, low-carbon electricity. Prioritizing the deployment of these designs can reduce technology risk, support more predictable project development and enable countries to move more quickly from policy ambition to construction and operation.

By deploying proven technologies now, countries can add significant clean firm capacity while also building the regulatory, workforce, supply chain and project management capabilities needed to support future reactor technologies.

5.5.2 Accelerating SMR deployment

Small modular reactors (SMRs) and other advanced nuclear technologies offer the potential to simplify project delivery, reduce capital requirements per unit, and support more investable nuclear deployment models. Their smaller unit size, modular construction and potential for factory manufacture could enable greater standardization, shorter construction schedules, and more flexible financing structures.

Many SMR and advanced reactor designs still require further development, licensing, demonstration and first-of-a-kind deployment before these potential benefits can be fully realized. Governments can help accelerate the transition from development to deployment through targeted R&D support, licensing reform, public–private partnerships, and funding mechanisms that support demonstration and early projects.

5.5.3 Expanding the role of SMRs and advanced nuclear technologies in wider decarbonization applications

Nuclear technologies can be used for many applications beyond grid electricity production, such as industrial heat supply, district heating, desalination, sustainable synthetic fuel production, marine transport, remote grids - including remote coastal sites - and off-grid energy supply. SMRs and advanced nuclear technologies will further expand the opportunities to meet these needs.

World Nuclear Association recommends that governments support the inclusion of non-power and wider decarbonization applications in demonstration and first-of-a-kind projects, including through public-private partnerships, targeted funding, and policy frameworks that recognize the value of nuclear energy across hard-to-abate sectors.

5.6 Uranium and Fuel Supply

Securing resilient nuclear fuel supply chains, from uranium resources and front end services to advanced fuel development.

5.6.1 Supporting uranium exploration and resource development

Future nuclear expansion will require significantly increased uranium supply. If uranium exploration and mine development do not expand this could create supply constraints. Availability of supply depends on timely investment and project execution, given the long lead times required for the development of uranium mines.

To ensure a resilient fuel supply chain aligned with future nuclear expansion, it would be helpful to set clear targets and timelines for uranium exploration and resource development.

World Nuclear Association recommends that governments support uranium exploration and development programmes to secure long-term supply. This will ensure availability of resources to meet future demand in a timely manner. In addition, regulatory authorities should ensure timely completion of the licensing and permitting processes where mines are being developed.

5.6.2 Expanding front end fuel cycle capacity and resilience

Tripling nuclear capacity will require major expansion of fuel cycle services, including conversion, enrichment, and fabrication. Without early action, bottlenecks may emerge, where there is insufficient fuel cycle capacity to meet the needs of the additional generation capacity projected in this report.

Governments and the industry could collaborate to set targets for increasing global conversion and enrichment capacity to ensure progress and adaptability. Geographic diversification could enhance the resilience of the supply of fuel cycle services.

World Nuclear Association recommends governments support the industry in making early investment decisions to expand fuel cycle services capacity to ensure the continuity and stability of nuclear fuel supply.

5.6.3 Accelerate development of fuels for advanced technologies and SMRs

Innovative fuel designs can improve reactor performance, safety margins and fuel cycle economics. Higher burnup fuels, longer fuel cycles, accident-tolerant fuel concepts, new cladding materials and advanced fuel compositions may support improved reliability and more efficient operation of both existing reactors and future designs. Many advanced SMR designs involve the use of new fuel types, including higher burnup and higher enrichment (LEU+ and HALEU, high assay low-enriched uranium).

World Nuclear Association recommends that governments, regulators and the industry support qualification, testing and licensing pathways for innovative fuel designs, while ensuring that fuel innovation is aligned with reactor deployment plans and fuel cycle infrastructure. World Nuclear Association also recommends that governments work with the industry on the development and deployment of new fuels and required fuel cycle facilities, to produce and manufacture these fuels to ensure their timely availability, as well as considering the entire fuel cycle, including recycling or used fuel management.

5.7 Reprocessing and Recycling

Adopting a policy of reprocessing and recycling used nuclear fuel can promote adoption of the circular economy, would make more efficient use of nuclear resources, enhance fuel security and reduce waste volumes. For those governments that have a policy of reprocessing used nuclear fuel, the following actions will enhance its deployment.

5.7.1 Establishing long-term policy support for reprocessing and recycling

Where chosen, reprocessing and recycling should be supported consistently by policy frameworks. World Nuclear Association recommends that governments establish clear, long-term policy support for these activities that promotes integrated planning across reactor types. This will enable better use of existing fuel and support future technologies, improve uranium utilization and reduce waste volumes and radiotoxicity.

5.7.2 Providing predictable regulatory pathways for advanced fuel cycles

Regulatory certainty can accelerate the development of advanced reprocessing technologies. This removes barriers to innovation and deployment.

World Nuclear Association recommends that regulatory frameworks provide predictable and streamlined licensing pathways. This will support development of advanced fuel cycle technologies.

5.8 Waste Management, Disposal and Decommissioning

Establishing comprehensive, integrated and, where appropriate, multinational solutions for long-term radioactive waste and used fuel management.

5.8.1 Establish comprehensive long-term waste management plans

Effective waste management is essential for public acceptance and long-term sustainability.

The preparation and adoption of long-term management strategies will help ensure adequate funds are accumulated during plant operating lifetimes. These should address all waste streams from operation and decommissioning, including management and disposal of high-level radioactive waste and used fuel not selected for recycling/reprocessing . World Nuclear Association also recommends that integrated approaches covering storage, transport, disposal, and recycling options be adopted. This will ensure a coherent and sustainable waste strategy.

5.8.2 Considering multinational shared infrastructure facility solutions

Some countries may lack the scale or resources to develop national repositories and associated fuel cycle facilities independently. This can significantly delay progress on long-term disposal solutions.

World Nuclear Association recommends that governments consider multinational and regional infrastructure solutions, including shared reprocessing and recycling services, multinational interim storage facilities, regional or multinational deep geological repositories (DGRs) and other disposal concepts.

Such shared approaches can provide more efficient, cost-effective, and secure solutions for long-term waste management. They enable economies of scale, reduce the number of disposal sites, enhance safety and security, and are particularly beneficial for countries with small or new nuclear programmes, as well as for managing waste from SMRs and advanced reactors.

5.9 Increasing the Capability and Capacity of the Nuclear Supply Chain

Strengthen and diversify global nuclear supply chains to enable efficient, timely and scalable deployment.

5.9.1 Strengthening and expanding nuclear supply chain capabilities

Ensuring sufficient supply chain capacity and relevant engineering, construction and manufacturing capabilities will facilitate the timely deployment of nuclear projects at the scale required to triple global nuclear capacity by 2050, by removing gaps in skilled labour, component manufacturing, and qualified suppliers.

By working together, governments and the industry can provide long-term procurement pipelines that function as credible investment signals for suppliers to ensure timely delivery of critical systems.

5.9.2 Aligning procurement requirements and standards

Different national procurement requirements, codes and standards for nuclear equipment create inefficiencies, increase costs and limit the scalability of nuclear technologies across markets. These differences can lead to duplication in design, testing and certification.

Regulators, the nuclear industry and standards development organizations can address this by working together to align and mutually recognize codes and standards where possible. Strengthening international collaboration can promote standardization of procurement requirements and enable a more efficient global supply chain.

5.9.3 Leveraging the capabilities, best practices and products from other sectors

Adoption of proven technologies from other sectors could help broaden supplier participation, lower costs, and reduce project timelines, particularly where equivalent industrial-grade components meet performance and safety requirements.

Adopting risk-informed, performance-based approaches will allow for the use of suitably qualified industrial-grade equipment. Clear guidance and harmonized qualification processes should be developed to ensure safety is maintained while broadening the supplier base and improving project efficiency.

5.10 Industrial Policy and Programme Delivery

Integrate nuclear deployment into industrial strategies and adopt coordinated, programmatic delivery models to strengthen economic benefits, reduce costs and accelerate fleet deployment.

5.10.1 Enhancing industrial and socio-economic development

Nuclear power projects are major infrastructure investments that can contribute to regional economic development, high-value employment, industrial capability and long-term social value. World Nuclear Association recommends that governments integrate nuclear deployment into wider industrial strategies, including local and regional supply chain development, workforce planning, infrastructure investment and export opportunities.

5.10.2 Adopting a programmatic approach to project delivery

A programmatic approach that leverages a fleet approach, the project team, experience and lessons learned, standardized designs and industrial deployment strategies would improve efficiency, reduce costs and accelerate delivery.

5.10.3 Ensuring efficient project execution and delivery model

Nuclear programmes and projects are major infrastructure endeavours involving numerous organizations, with contracting models that allocate and share risks throughout the supply chain. Governments, project owners, vendors and supply chain partners can help accelerate these programmes by establishing clear delivery models before project commitment, including defined roles, accountabilities and decision-making processes.

World Nuclear Association recommends that project owners develop strong programme management capability, adopt proven designs where possible, use realistic schedules and cost estimates, and ensure that contracts incentivize collaboration rather than adversarial risk transfer. Early supply chain engagement, workforce planning, and lessons learned from previous nuclear and major infrastructure projects should be embedded from the outset.

5.10.4 Exploring options for collaboration to accelerate nuclear fleet deployment

World Nuclear Association recommends that developers and other stakeholders – including the nuclear industry, international and regional organizations – increase international collaboration to share lessons learned and coordinate actions to mutually accelerate deployment.

This can include programmatic procurement and sharing good practice for multiple nuclear deployment to accelerate bringing units online, reduce costs and optimize supply chain and workforce mobility.

5.11 Workforce and Skills Development

Building a future-ready nuclear workforce will require long-term programme certainty, integrated workforce planning, expanded training and education, skills mobility, retraining and developing an early-career talent pipeline.

5.11.1 Providing long-term clarity that gives employers the confidence to invest

Greater certainty around future nuclear programmes will encourage workforce investment and development.

Governments should establish clear, credible and long-term project pipelines that give the industry the confidence to invest in workforce development at scale and build a future-ready workforce.

5.11.2 Integrating workforce planning into nuclear project delivery

A shortage of skilled workers would represent a major constraint on nuclear deployment. Workforce readiness should therefore be treated as a core part of nuclear programme and project delivery, rather than as a separate education or human resources issue.

Governments and project developers should integrate workforce planning into nuclear programmes from their earliest stages and maintain it throughout project delivery. National nuclear roadmaps should identify the skills and capabilities that will be required at each stage of delivery, including policy development, licensing, construction, commissioning, operations, the fuel cycle, regulation and decommissioning.

5.11.3 Transferring international expertise

Governments and the industry should develop international recruitment and skills-mobility arrangements that allow experienced personnel to support nuclear programmes where their expertise is needed. International recruitment will provide lasting benefits only where imported expertise is used to strengthen domestic capabilities.

Nuclear programmes should include structured arrangements through which internationally recruited personnel transfer their knowledge and experience to the local workforce.

Regional centres linking industry, academia and training providers will support coordinated skills development and innovation, improving effectiveness and knowledge sharing.

5.11.4 Creating transfer and retraining pathways from adjacent sectors

The nuclear sector will need to attract experienced workers from related industries, including defence, oil and gas, aerospace, advanced manufacturing, major infrastructure, digital and cybersecurity.

Transferable skills should be supported by structured nuclear conversion pathways covering nuclear safety culture, regulatory expectations and quality requirements.

5.11.5 Strengthening nuclear education outreach

In many regions, the nuclear sector faces a shortage of young people entering the workforce, including a decline

in the number of students choosing nuclear-related degrees. This is intensified by increased competition for STEM (science, technology, engineering and mathematics) talent.

Governments, industry and educational institutions should develop systematic and sustained nuclear education outreach programmes that build awareness of nuclear science, technology and career opportunities among young people.

Effective outreach requires specialist skills and an understanding of how to communicate with different groups of young people. Nuclear organizations should provide thematic training and practical support for the professionals responsible for designing and delivering youth engagement activities.

5.12 Public Confidence and Engagement

Building public confidence through inclusive stakeholder engagement, balanced understanding, meaningful participation and accessible information.

5.12.1 Build understanding of nuclear energy's benefits and risks

Public discussion of nuclear energy can focus disproportionately on individual risks without providing sufficient information on its potential benefits or comparison with alternative energy options. This can prevent stakeholders from forming a balanced understanding of the choices involved.

World Nuclear Association recommends that governments, industry and independent institutions provide clear, evidence-based and accessible information on both the benefits and risks of nuclear energy. Communications should place nuclear energy within the wider energy-system and industrial-policy context, enabling informed consideration of the full range of impacts and opportunities.

5.12.2 Undertake comprehensive stakeholder mapping

Effective engagement begins with a clear understanding of the individuals, communities and organizations that may be affected by, interested in, or able to influence nuclear energy policies and projects.

World Nuclear Association recommends that governments and project developers undertake stakeholder mapping at the earliest stages of programme and project development. This should identify local communities, elected representatives, civil society organizations, businesses, trade unions, educational institutions, indigenous peoples where applicable, and other relevant groups. Stakeholder mapping should be regularly updated as projects develop and should inform tailored, inclusive and sustained engagement strategies.

5.12.3 Enabling meaningful community participation

Community engagement should extend beyond the provision of information or consultation after major decisions have already been taken. Communities are more likely to have confidence in nuclear projects where they have meaningful opportunities to influence decisions that affect them.

World Nuclear Association recommends that governments and project developers establish participatory engagement processes from the earliest stages of site selection, policy development and project planning. Communities should be given clear opportunities to express their priorities. Engagement should be continuous before construction as well as throughout construction, operation and decommissioning, with clear explanations of how community input has influenced decisions.

5.12.4 Improving access to information

Access to reliable and clear information can contribute to overcoming misconceptions and increasing confidence in nuclear energy.

World Nuclear Association recommends that governments integrate nuclear energy information and education into wider energy, skills and industrial strategies. This should clearly communicate the full opportunity associated with nuclear development, including employment, supply-chain participation, regional investment, research, innovation and applications beyond electricity generation.

6 Director General's Conclusions

The challenge is now one of delivery. Global energy demand is rising as populations grow and economies electrify, while emissions must fall sharply. Meeting both objectives will require a major expansion of clean, reliable energy, with nuclear power playing a significant part.

At COP28 in 2023, 25 countries committed to work towards tripling global nuclear capacity by 2050. That number has since risen to 38. The priority now is to turn political ambition into programmes, projects, operating capacity and ultimately energy delivered to society

Tripling will require action across the whole nuclear system: preserving the existing fleet, completing reactors already under construction, accelerating deployment of proven large reactors, bringing SMRs and advanced reactors into commercial operation, and enabling new countries to establish successful nuclear programmes.

6.1 Build the deployment pipeline now

The required increase in construction is substantial. In recent years, annual nuclear additions have typically been below 10 GWe. Even at the historic peak in the 1980s, annual additions only briefly exceeded 30 GWe. Delivering the tripling ambition will eventually require annual additions well above those historic levels.

That scale of deployment cannot be created quickly.

Reactors already under construction and mature projects will provide much of the growth this decade. Capacity commissioned in the 2030s will depend increasingly on decisions being taken now on project development, financing, licensing, manufacturing and workforce. Deployment in the 2040s will need to build on repeat projects, standardized designs, mature supply chains and experienced delivery organizations.

Governments and industry therefore need to act before capacity is urgently required. Countries expecting to need nuclear capacity in the 2030s and 2040s should establish programmes, sites, regulatory resources and financing arrangements now.

This matters because nuclear expansion will take place alongside rapidly increasing electricity demand from electrification, data centres, cooling, desalination, hydrogen and industrial decarbonization. New nuclear capacity will be needed both to replace unabated fossil generation and to help meet growth in total low-carbon electricity demand. It can also provide reliable heat for sectors that are difficult to decarbonize through electricity alone.

6.2 Protect and make full use of the existing fleet

The first priority should be to make full use of the nuclear capacity already available.

Existing reactors provide proven low-carbon generation together with valuable infrastructure: established sites, transmission connections, skilled workforces, experienced operating organizations and reliable supply chains. Where continued operation can meet regulatory requirements, there is a strong case for avoiding premature closures.

Governments, operators and regulators should therefore:

- enable long-term operation where plants can continue to meet safety requirements;
- pursue economically and technically justified power uprates;
- improve plant performance and reduce avoidable outages;
- assess the potential to restart suitable reactors that have closed prematurely; and
- prioritize timely completion and commissioning of reactors already under construction.

Every gigawatt retained, uprated, restarted or completed reduces the amount of entirely new capacity that must subsequently be developed.

6.3 Move proven designs into repeat deployment

Preserving the existing fleet will not be enough. Tripling will require sustained new construction.

Large reactors based on proven designs are likely to provide most of the additional nuclear capacity over the near and medium term. Their contribution will be greatest where we move away from isolated projects and establish repeat-build programmes that capture experience from one unit to the next.

Governments, utilities, project developers, or large energy users should therefore identify credible sequences of projects rather than treating each reactor as a separate decision. Vendors should standardize designs and avoid unnecessary project-specific changes. Supply chains need sufficient visibility of future orders to justify investment in manufacturing capacity and workforce.

SMRs and other advanced technologies can broaden the contribution of nuclear energy. They may provide

new options for smaller grids, industrial facilities, remote locations and heat applications. Their contribution will depend on how quickly first projects can be converted into repeat commercial deployment.

The issue is not whether countries should choose large reactors or SMRs. The priority is to deploy technologies suited to national needs and to do so in ways that support repeatability, standardization and learning.

6.4 Put workable delivery models in place

There is no single model for nuclear deployment. Countries have different resource endowments, electricity markets, institutions, industrial capabilities and financing systems.

What matters is whether each country has a framework capable of supporting investment over the full life of a nuclear project.

In centrally coordinated systems, governments and state-owned utilities can integrate nuclear development with long-term electricity planning, grid investment and industrial strategy. In competitive markets, additional arrangements may be needed to provide predictable long-term revenues and to recognize the wider value of firm low-carbon generation, system stability and energy security.

Financing arrangements should allocate risks to the parties best able to manage them. Placing risks on investors or consumers who cannot control them increases financing costs and can undermine projects.

Countries should therefore establish credible revenue, financing and risk-allocation frameworks before projects reach final investment decisions.

6.5 Strengthen the global supply chain

Tripling nuclear capacity will require an industrial base capable of supporting much higher and more sustained construction rates.

Governments and industry should provide enough visibility of future project pipelines to support investment in:

- component manufacturing;
- construction capacity;
- uranium exploration, mining, conversion, enrichment and fuel fabrication;
- specialist engineering;
- transport and logistics; and
- nuclear-qualified suppliers.

International supply chains will remain essential. New entrant countries should make use of experienced international vendors and operators rather than attempting to recreate every capability domestically from the outset.

Countries planning sustained programmes should also identify where domestic capability can reduce delivery risk and create long-term economic value. The objective should be resilient international supply chains combined with realistic national localization.

6.6 Expand the workforce before shortages become a constraint

A larger nuclear programme will require more people across almost every part of the sector.

Governments, industry and educational institutions should quantify future workforce needs and expand training before construction activity accelerates. Particular attention is needed for occupations where experience takes years to develop, including regulators, nuclear safety specialists, project managers, operators and nuclear-qualified construction personnel.

Countries restarting nuclear construction after long gaps should not assume that an existing operating fleet automatically provides the skills needed for major new-build programmes.

International mobility, common training standards and transfer of experience between mature and emerging programmes can help, but they cannot replace sustained investment in national skills.

6.7 Equip regulators for expansion

Regulatory capacity must grow alongside industry capacity.

Faster deployment does not require lower safety standards. It requires regulators with sufficient people, expertise and predictable processes to assess projects efficiently.

Governments should ensure that regulators have the resources needed to deal simultaneously with existing fleet oversight, lifetime extensions, new reactors and emerging technologies.

Regulators should also increase international cooperation, particularly for designs being deployed in several countries. Greater use of previous regulatory assessments, while retaining national responsibility for safety decisions, can reduce unnecessary duplication and help successful designs move more efficiently between markets.

6.8 Help new nuclear countries move from ambition to projects

A growing number of countries are considering or developing their first nuclear power programmes. Their successful entry will be important if nuclear deployment is to expand geographically as well as increase in established markets.

These countries need to move systematically from political commitment to project development.

That means establishing:

- durable national policy;
- competent implementing organizations;
- independent regulatory capability;
- realistic sites and technology options;
- financing and ownership arrangements;
- fuel and waste strategies; and
- credible schedules.

International organizations, experienced nuclear countries and industry should support these programmes through practical transfer of knowledge, regulatory cooperation, training and partnership.

The aim should be to help new entrants benefit from existing experience rather than requiring each country to recreate the same institutions, processes and lessons independently.

6.9 Resolve fuel and waste requirements as programmes expand

Fuel security and waste management need to be planned at the same scale as reactor deployment.

Rapid expansion of nuclear capacity will require corresponding increases in uranium mining, conversion, enrichment and fuel fabrication. Advanced reactor programmes may require new fuel types and manufacturing capability.

Governments and industry should identify these requirements early enough for capacity to be developed ahead of reactor demand.

The same applies to spent fuel and radioactive waste. Existing storage arrangements provide time, but countries planning substantial fleet expansion should establish credible long-term used fuel and waste management strategies and make measurable progress towards disposal solutions.

6.10 Move from individual projects to sustained programmes

The WNOR assessments show a consistent pattern: nuclear capacity is more likely to grow where countries maintain sustained programmes rather than rely on isolated projects.

Stable programmes allow experience to accumulate. They support investment in people and manufacturing. They make it possible to repeat designs, retain delivery organizations and give governments, regulators, investors and suppliers confidence that capability developed for one project will be needed again.

The priority for the coming decade should therefore be to convert national ambitions into credible pipelines of projects.

Industry needs to improve project execution, standardization and productivity. Governments need to provide durable policy, financing and market frameworks. Regulators need sufficient resources to handle growing workloads efficiently. Financial institutions need models that reflect the long operating lives and system value of nuclear assets. Educational institutions need to expand the workforce, and local communities need to see clear benefits from hosting projects.

Tripling nuclear capacity by 2050 remains achievable, but it will depend on decisions being taken well before the capacity is needed.

The immediate priorities are clear: preserve the existing fleet, complete projects already under way, commit to the next projects, establish repeat programmes, and invest in the institutions, people and supply chains needed to sustain deployment at scale.

Dr Sama Bilbao y León
Director General, World Nuclear Association
September 2026

Argentina

Current operations

Argentina has three operable reactors. The single unit at Embalse, a Candu 6 PHWR, commenced operation in 1983. It underwent a major three-year refurbishment project finishing in early 2019. The refurbishment extended the unit's operational lifetime by 30 years.

The two units at Atucha are both Siemens PHWRs, unique to Argentina. The first unit commenced operation in 1974. A 30-month refurbishment project, which is expected to allow the unit to operate for a further 20-25 years, commenced at the end of September 2024 and was reported as 60% complete by July 2026.

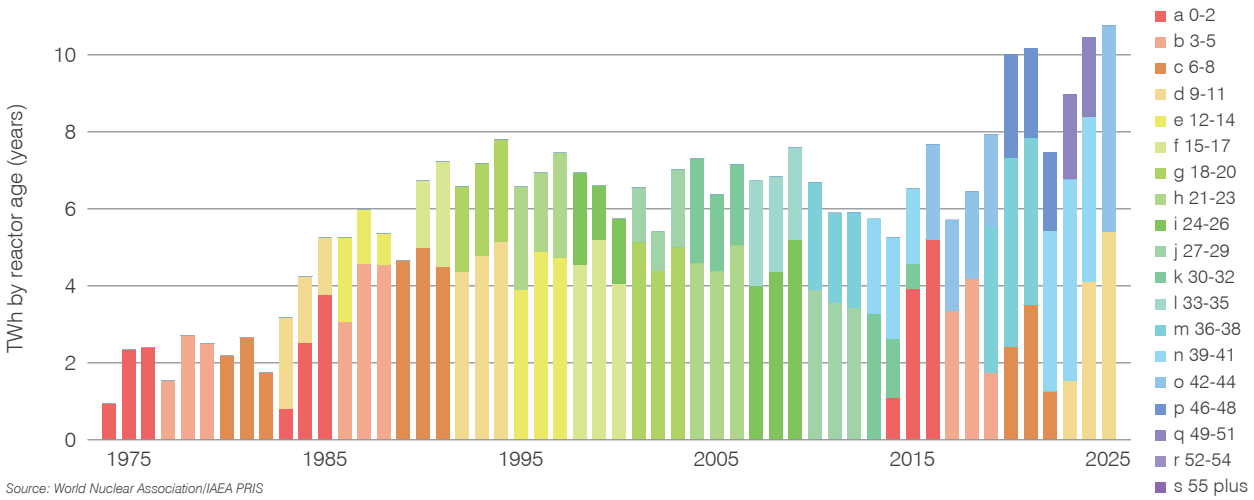
The larger unit 2 at Atucha commenced operation in 2014 following a long construction period with many delays.

In 2025 only Atucha 2 and Embalse were in operation. Both achieved high capacity factors and the amount of electricity supplied by nuclear plants in Argentina was similar to recent years.

Table Ar.1 Nuclear capacity status (as of 1 October 2026)

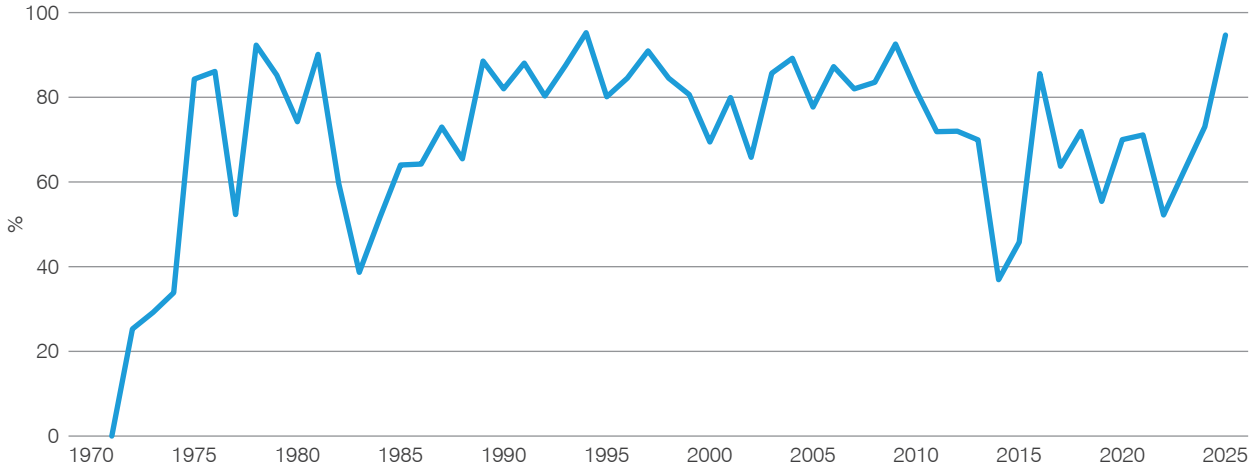
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
3	1631	1754	1	29	294

Figure Ar.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Ar.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

Argentina has one 29 MWe small modular reactor (SMR), called CAREM, under construction, although construction is currently suspended. The country had announced plans to construct at least one additional large reactor, although government officials have since indicated that four 300 MWe SMRs would be built instead. The ACR-300 SMR design has been developed by Argentinian company Invap. A US investment company, the Ansari Group, has acquired the ACR-300 patent and formed a joint venture with Invap's US subsidiary for the design and future manufacture of the reactors.

In September 2025, Argentina's government announced plans to sell 44% of Nucleoeléctrica Argentina by international tender, while keeping 51% state ownership; with the stated aim of attracting private investment for future reactors and uranium mining.

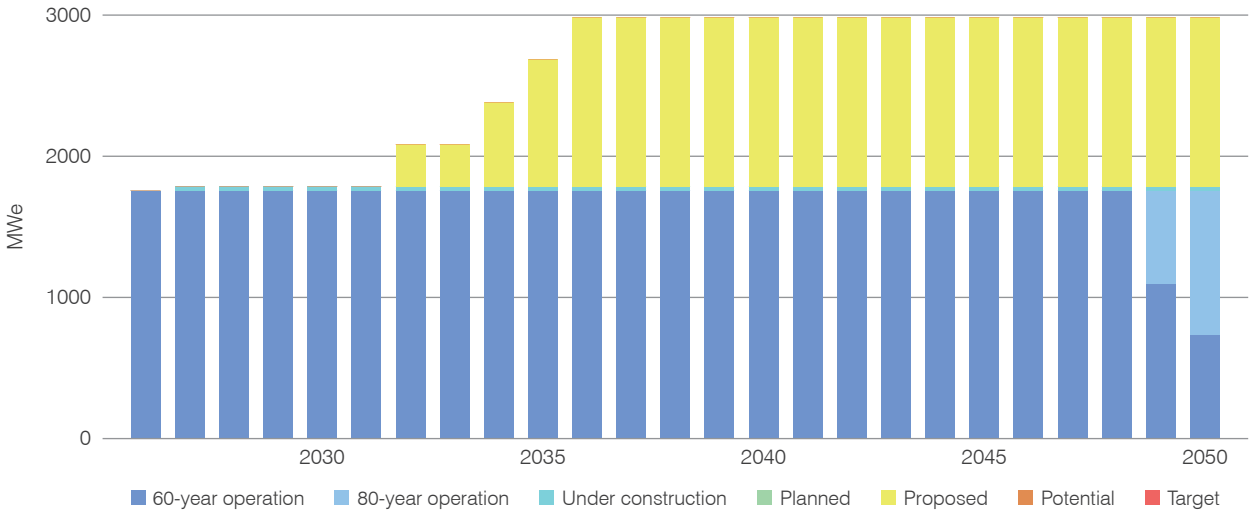
In July 2026 the Argentinian government announced that US-based Meitner Energy, which is backed by the Ansari Group, was planning to invest US$1.2 billion in the construction of a 300 MWe small modular reactor at the Atucha site. Construction is expected to take five years, after Argentina's nuclear regulator grants the required licenses.

Table Ar.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
740	1014	29	-	1200	-	-	-	2983

* Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Ar.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Argentina has already carried out major refurbishment of Embalse and work at Atucha 1 is ongoing to allow for extended operation of existing plant. However, with regard to plans for new capacity, construction on the CAREM reactor remains suspended and the project is long overdue. A proposal to construct an ACR-300 SMR at Atucha is making progress but is at an early stage.

Country Category	Restarter
Policy Framework Readiness	Moderate Clarity is needed on whether plans to build four ACR-300 units at Atucha, announced by the Argentine Nuclear Council in June 2025, still remain, as well as whether the Carem project will be completed.
Institutional & Infrastructure Readiness	Moderate-High Argentina has an established regulator, site operator, engineering sector and nuclear supply chain. Licensing the first-of-a-kind 300 MWe reactor will require considerable new design-review capability and sustained staffing across the wider nuclear sector.
Programme & Project Development Readiness	Low-Moderate The recent progress for Argentina's first ACR-300 from a broad government proposal to an identifiable commercial project with a developer and proposed financing is a significant step. The project now needs to progress through licensing of the new design and reach the final investment decision.
Target Achievability	Moderate Argentina is proceeding with projects to enable extended operation at its existing plants. Following the recent announcement regarding the first ACR-300 unit, clarity is needed on the subsequent project pipeline.

Armenia

Current operations

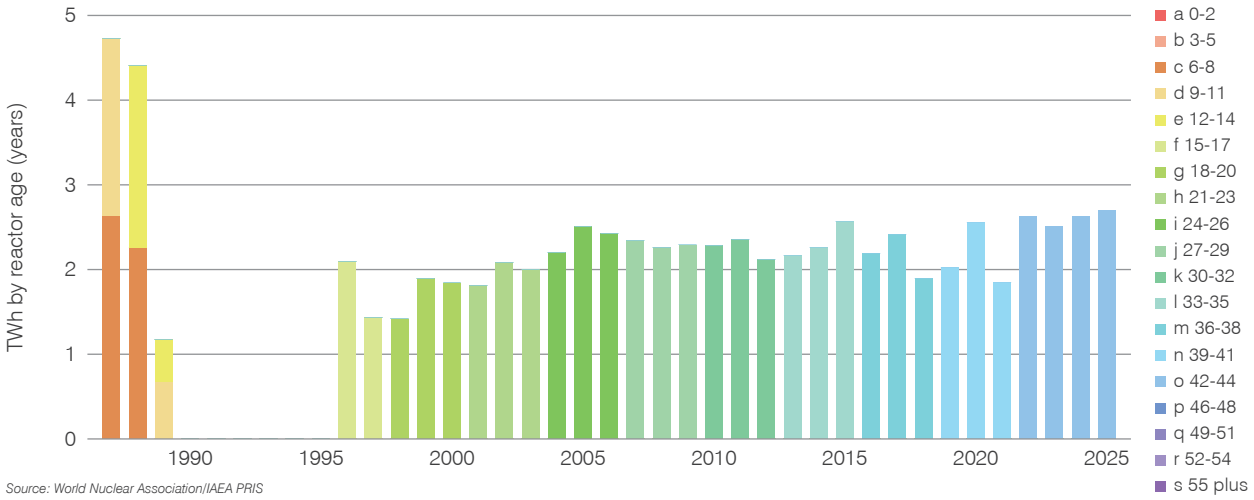
Armenia has one operable reactor and plans for new capacity. Two units were constructed at Metsamor and were connected to the grid in 1976 and 1980. Following an earthquake in 1988 both units were taken offline. Unit 2 was returned to service in 1995. This single operable reactor generates more than a quarter of the country's electricity.

In March 2023 the government approved a 10-year operating lifetime extension for Metsamor 2. The government stated that the several planned investments, along with the already implemented upgrades, could extend the operating lifetime of the reactor to 2036. In April 2026 Metsamor 2 was shut down in the latest of several outages to complete this work. The Armenian government formally approved the allocation of a state loan to finance the operating life extension of the 416-MW Metsamor 2 nuclear power unit in July 2026.

Table Am.1 Nuclear capacity status (as of 1 October 2026)

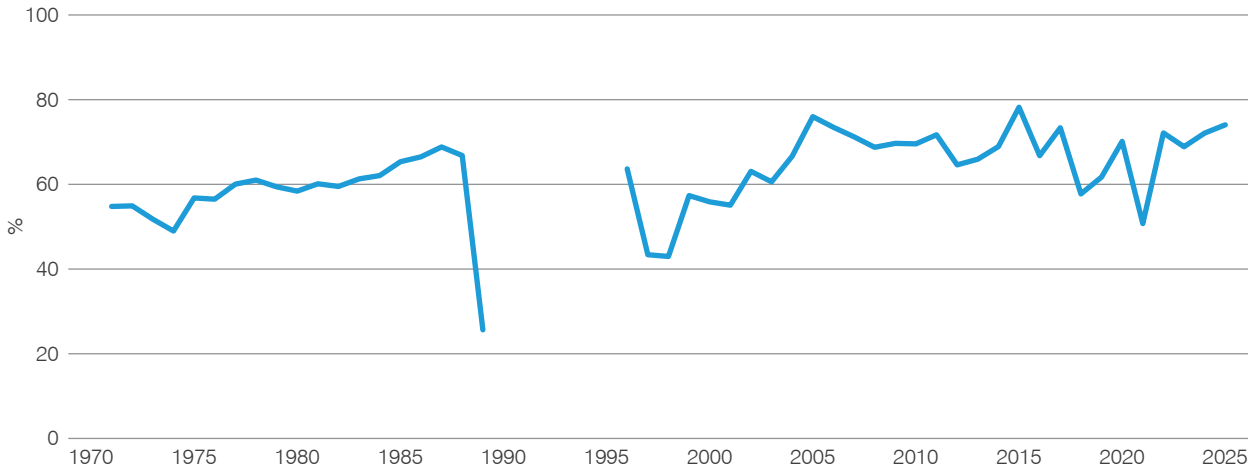
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
1	416	448	0	-	71.8

Figure Am.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Am.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

Construction of a new nuclear plant has long been part of Armenia's overall plan, although finance has proved to be an obstacle.

In February 2026, a 123 Agreement on peaceful nuclear cooperation was signed during the visit of the US Vice President, enabling US companies to export nuclear technology, fuel and services to Armenia.

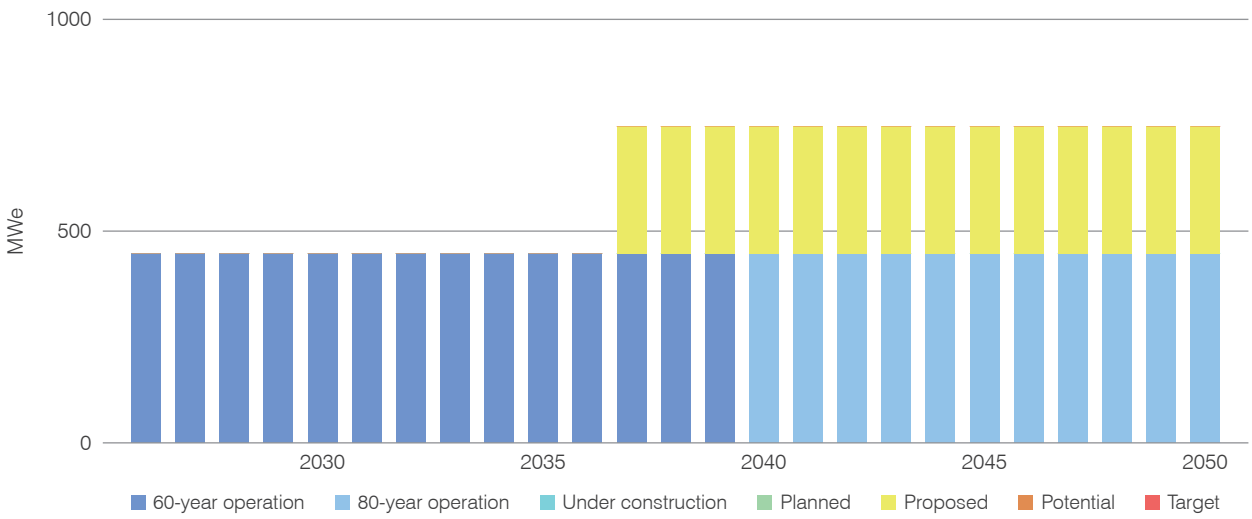
The government had been considering a large reactor but in May 2026 prime minister Nikol Pashinyan said that an SMR was now being pursued as the amount of electricity generated from solar in Armenia meant there would no longer be a need for a 1000 MWe plant. According to Armenian Minister, Davit Khudatyan, proposals from Russia, the United States, China, South Korea, and France were all under consideration and a final technology decision was expected by 2027.

Table Am.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	448	-	-	300	-	-	-	748

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Am.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Armenia has a strong policy rationale for retaining nuclear power as part of its energy mix, an established regulator and active long-term operation work intended to extend the operation at Metsamor 2 to 2036. The proposed SMR is intended to act as a replacement for the Metsamor unit.

Country Category	Restarter
Policy Framework Readiness	Moderate The new-build objective is not yet specific: the country has chosen a broad SMR direction, but not yet a reactor design, capacity, vendor, financing model, or firm delivery schedule.
Institutional & Infrastructure Readiness	High Armenia has a credible institutional base for continued operation and future nuclear development. Preparation would be needed for a first-of-a-kind licensing decision on whichever replacement technology is selected.
Programme & Project Development Readiness	Low-Moderate Armenia is maintaining existing nuclear capacity through life extension, but early in developing replacement capacity.
Target Achievability	Moderate Armenia would need to establish a clear project pipeline once a technology choice is made for new capacity, focused on delivery before the planned retirement of Metsamor 2.

Bangladesh

Current operations

Bangladesh's first nuclear power reactor, Rooppur 1, a Russian-designed VVER-1200, was loaded with fuel in April-May 2026. A second VVER-1200 is also under construction at Rooppur.

Table Ba.1 Nuclear capacity status (as of 1 October 2026)

Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
0	0	0	2	2400	0

Nuclear policy and outlook

The Integrated Energy and Power Master Plan 2023 set out targets for nuclear capacity, with 2.4 GWe by 2030, a further 2.4 GWe by 2041 and another 2.4 GWe by 2050. A draft of a new plan, the Energy and Power System Master Plan (EPSMP), was issued in January 2026, and has not yet been finalized. The draft EPSMP envisages only 4.8 GWe nuclear capacity in total by 2050, including 2.4 GWe at Chittagong Hill Tracts in the country's southeast.

Table Ba.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	-	2400	-	4800	-	7200		7200

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Ba.1 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

With commissioning tests under way at Rooppur 1, Bangladesh will soon join the group of countries with operable nuclear power plants. The target of 7.2 GWe of nuclear capacity by 2050 is relatively practicable; however, due to the change of government since the Integrated Energy and Power Master Plan 2023, there is uncertainty around the direction for future nuclear development.

Country Category	Newcomer
Policy Framework Readiness	High There is a strong commitment to completing Rooppur; however, the energy master plan is being reconsidered by the new government, future rankings will depend on the outcome of this review.
Institutional & Infrastructure Readiness	Moderate-High Regulator, operator, legislation, safeguards, training and nuclear infrastructure are established, but Bangladesh has yet to accumulate any operating experience.
Programme & Project Development Readiness	Moderate-High Two reactors are under construction, with fuel loading completed in one. However, schedules have slipped substantially, and no follow-on plant has progressed to comparable project definition.
Target Achievability	Moderate Delivery of the initial 2.4 GWe is now highly likely; reaching 7.2 GWe by 2050 is feasible but the new government might lower the country's nuclear capacity target.

Belarus

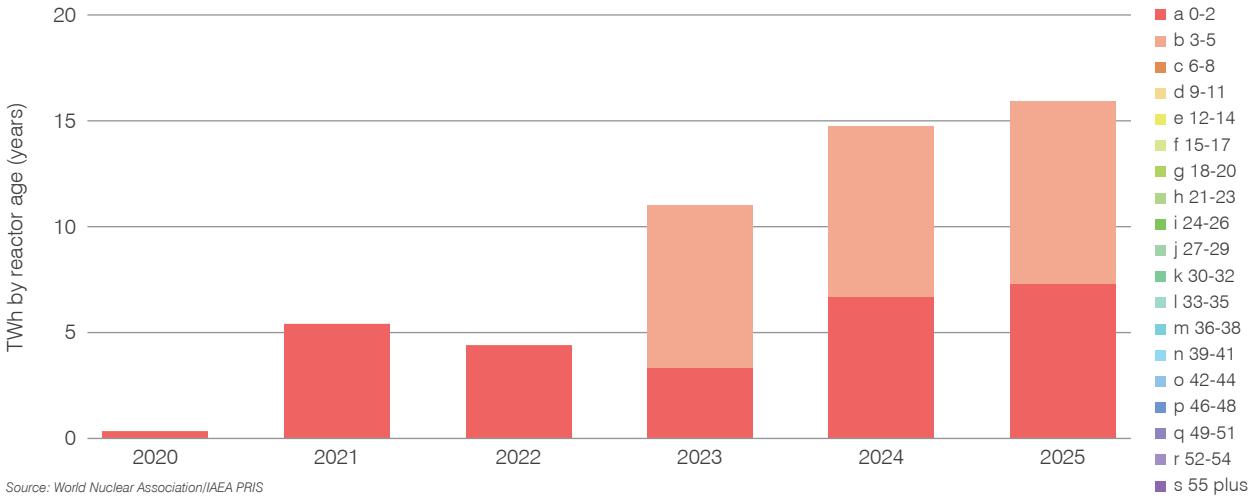
Current operations

Belarus's first nuclear unit entered into service in 2020, and the second unit in 2023. The two units at Ostrovets are expected to operate for a minimum of 60 years, to at least 2080.

Table By.1 Nuclear capacity status (as of 1 October 2026)

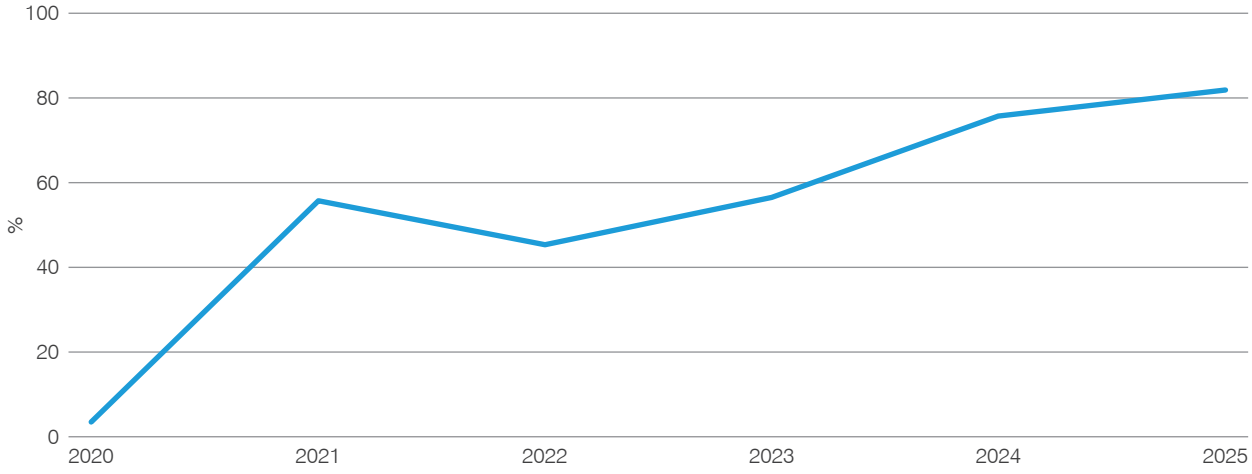
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
2	2220	2388	0	-	49

Figure By.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure By.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

In December 2023, the country's energy minister said that Belarus was considering building a second nuclear power plant, or a third unit at Ostrovets. In November 2025, President Lukashenko announced that a third unit would be built at the Ostrovets site. This is now classified as a proposed reactor by World Nuclear Association, and is representative of the government target. Survey work at potential sites in the Mogilev oblast, in the east of the country, would also be carried out; the go-ahead for any new capacity in that region would depend on future energy demand.

Table By.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
2388	-	-	1194	1194	-	2388	-	4776

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure By.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Having introduced nuclear generation to the country relatively recently, Belarus is well placed to continue expansion of its nuclear fleet, drawing on recent experience for construction of a third unit, and preparatory work for further expansion planned. The next steps will be to develop clear project plans for the third unit.

Country Category	Newcomer
Policy Framework Readiness	Moderate Belarus has made the decision to move forward with a third unit at Ostrovets, while commencing preliminary site studies for a potential second nuclear site, the go-ahead for which would be dependent on future energy demand.
Institutional & Infrastructure Readiness	High Belarus has an established institutional framework for operating and expanding nuclear capacity, including a regulator, nuclear law, licensing experience and waste management strategy.
Programme & Project Development Readiness	Moderate Belarus has made the political decision to construct a third unit at Ostrovets, and is preparing agreements with Rosatom, but financing terms, EPC contracts, licensing, environmental approvals and first concrete remain outstanding. Plans for a second site are at an early stage.
Target Achievability	Moderate The site, technology family, owner/operator experience and likely vendor are already established for a third unit at Ostrovets.

Belgium

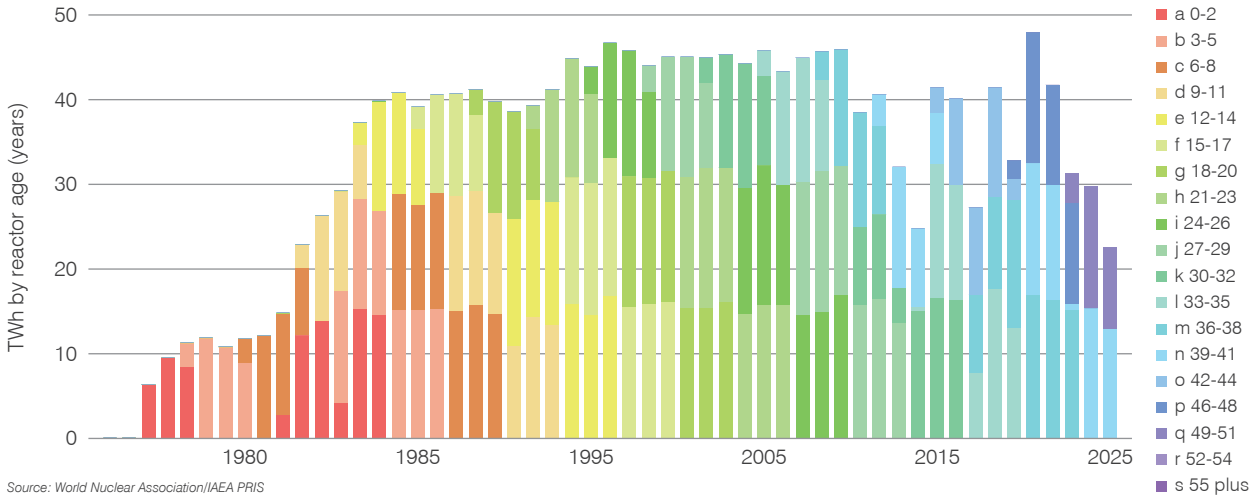
Current operations

Following the shutdown of Tihange 1 and Doel 2 in October 2025 and November 2025, respectively, Belgium has two remaining operable reactors, Doel 4 and Tihange 3.

Table Be.1 Nuclear capacity status (as of 1 October 2026)

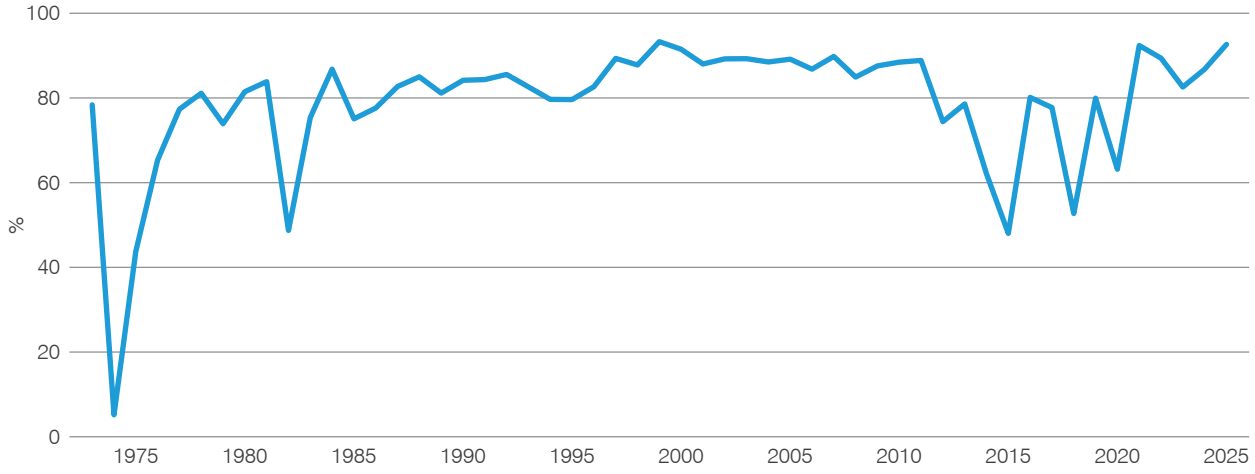
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
2	2056	2179	0	-	1675

Figure Be.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Be.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

In February 2025 the new coalition government announced plans to continue operating Doel 4 and Tihange 3 for an additional 10 years to 2045, with the prime minister stating that it was to "strengthen our country's independence from fossil fuels in a turbulent geopolitical environment."

In May 2025, Belgium's federal parliament voted by a large majority to repeal the 2003 law, which set out a phase-out of nuclear power and ban on the construction of new nuclear generating capacity. The Federal Coalition Accord, published in January 2025, aims for 4 GWe in total of nuclear capacity in the electricity mix and commits to launch a programme to revive Belgium's nuclear industry and construct new nuclear reactors.

Table Be.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
0	2190	-	-	-	-	4000	1810	4000

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Be.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Belgium has well-established nuclear institutions and more recently a more positive policy on nuclear energy. The repeal of the phase-out law and approval of Doel 4 and Tihange 3 life extensions are major readiness improvements. Greater clarity is now needed on intentions for potential restarts of reactors and new construction, following the government's discussions with Engie to acquire its nuclear-related assets.

Country Category	Restarter
Policy Framework Readiness	Moderate The Doel 4/Tihange 3 operating lifetime extension has a clear framework; a roadmap to achieve the planned 4 GWe of nuclear capacity needs to be finalized.
Institutional & Infrastructure Readiness	High Belgium has an experienced regulator, a mature nuclear legal framework, strong technical support organizations, operating and decommissioning experience, and an established waste management system.
Programme & Project Development Readiness	Low-Moderate Belgium is moving ahead on extending the operating lifetimes of Doel 4 and Tihange 3, but plans for new build are at an early stage. The political and legal environment for nuclear energy has changed quickly, but project development milestones have not yet followed.
Target Achievability	Moderate This target has been revised from 8 GWe in the previous WNOR (4 GWe of new capacity in addition to the 4 GWe that was in operation at the beginning of 2025) to the 4 GWe overall target stated in the Federal Coalition Accord of January 2025.

Brazil

Current operations

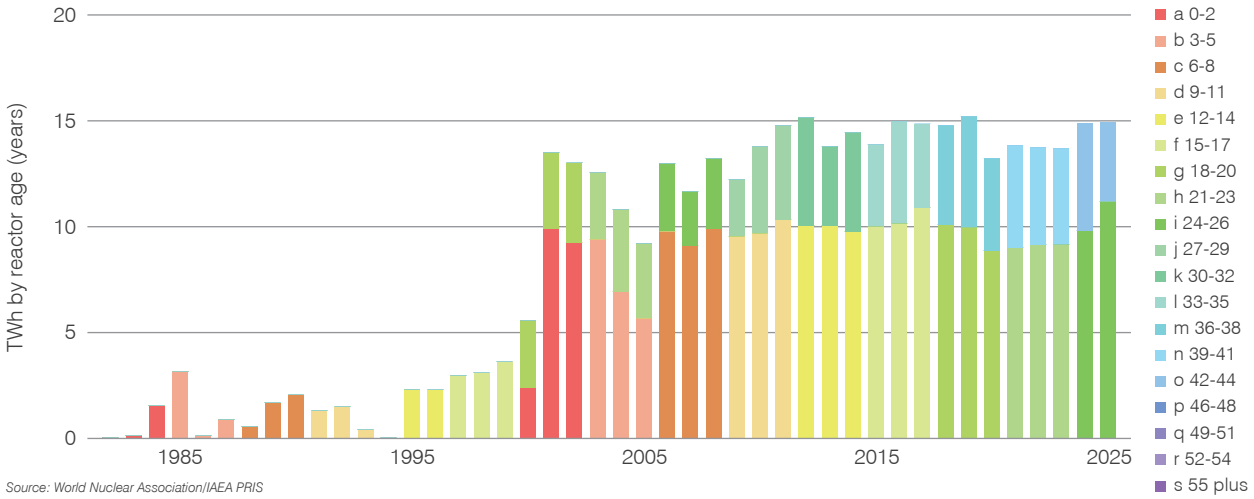
There are two operable reactors in Brazil, Angra 1&2. Eletronuclear applied in 2019 to extend the operating lifetime of Angra 1 from 40 to 60 years. The unit commenced operation in 1982.

Pre-construction work began on a third unit at Angra in 1984, but the project has experienced several lengthy delays. According to Eletronuclear in November 2025, the target commissioning date for Angra 3 had slipped to 2033. However, as of May 2026 the government's National Energy Policy Council had not reached a decision to proceed with completion of the plant.

Table Br.1 Nuclear capacity status (as of 1 October 2026)

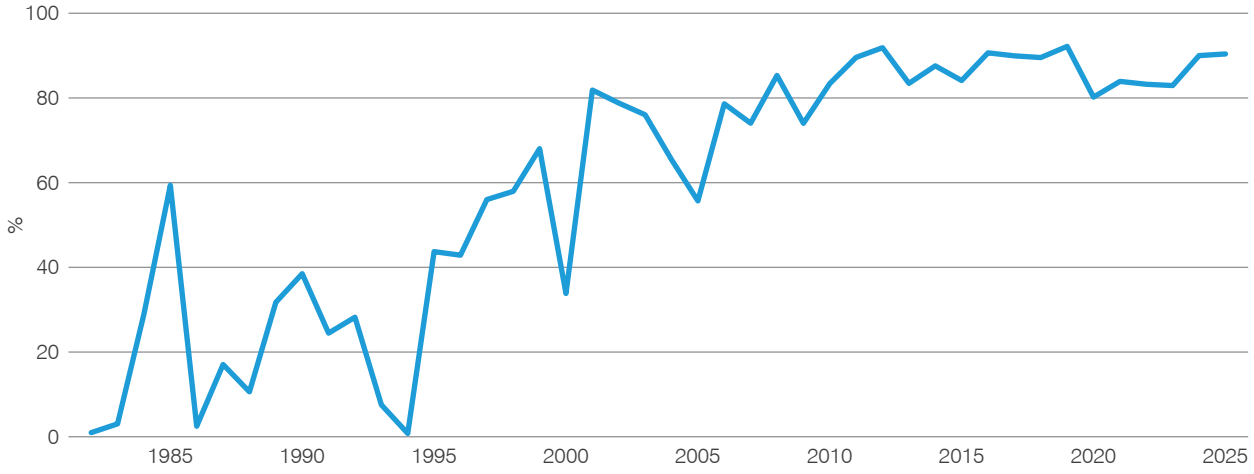
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
2	1884	1990	1	1405	352

Figure Br.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Br.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

Brazil's National Energy Plan to 2050 (PNE 2050), published in 2020, included an aim to add 8-10 GWe of nuclear capacity by 2050, in addition to Angra 3. In 2026 the updated PNE 2055 scenarios envisaged the possible deployment of up to 14 GWe of nuclear capacity by 2055, including SMRs. For the WNOR a 2050 capacity of 11,395 MWe is projected.

In May 2025 Brazil's Minister of Mines and Energy said that he expected the development of a small modular reactor project with Russia in the near future.

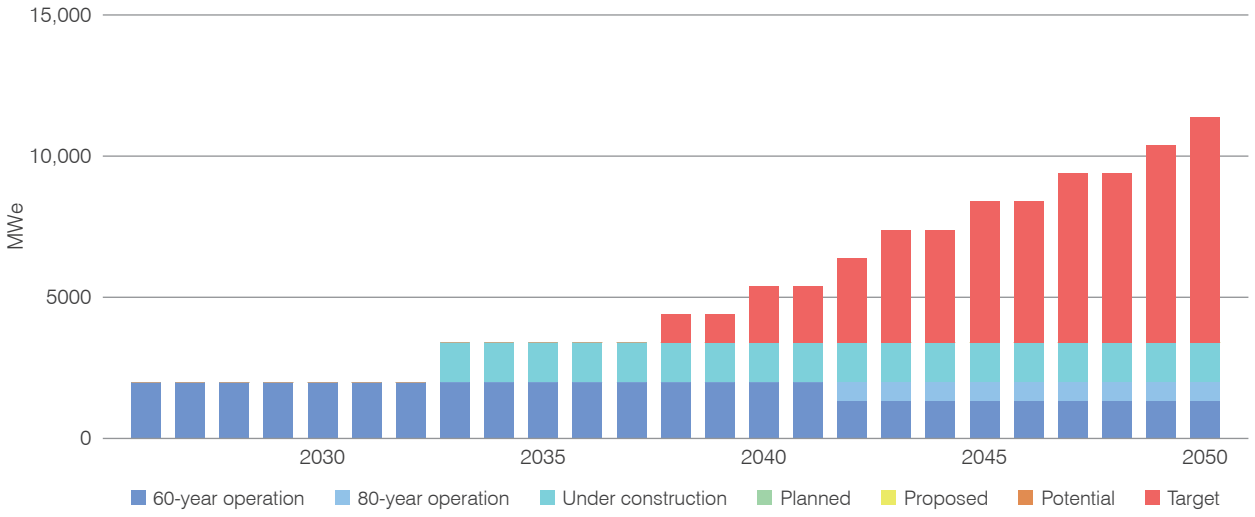
The National Nuclear Energy Commission (CNEN) aims to demonstrate the feasibility of the development of a Brazilian 3-5 MW microreactor. The vision is for the microreactor to fit within a 40-foot container and be operated remotely for more than 10 years without any need for refuelling.

Table Br.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
1350	640	1405	-	-	-	8000	8000	11,395

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Br.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Brazil's readiness is strongest in institutional capability, operating experience and fuel cycle capacity. Progress with project execution and financing is needed; Angra 3 remains unresolved and new nuclear capacity projects are not defined.

Country Category	Restarter
Policy Framework Readiness	Moderate Brazil has a long-term nuclear policy objective. This now needs to be strengthened into a clear framework, beyond the Angra 1 operating lifetime extension, both for Angra 3 and proposals for additional reactors.
Institutional & Infrastructure Readiness	High Brazil has a strong institutional and industrial base for nuclear power compared with many countries considering new build. Brazil has long-standing nuclear legislation, licensing standards and international safeguards arrangements.
Programme & Project Development Readiness	Low-Moderate Brazil has experience in developing a nuclear power programme and a partly built third reactor. However, this has been much delayed, and the country's future capacity pipeline is not yet developed.
Target Achievability	Low Completion of Angra 3 remains uncertain, and there is no clear project programme for additional new reactors.

Bulgaria

Current operations

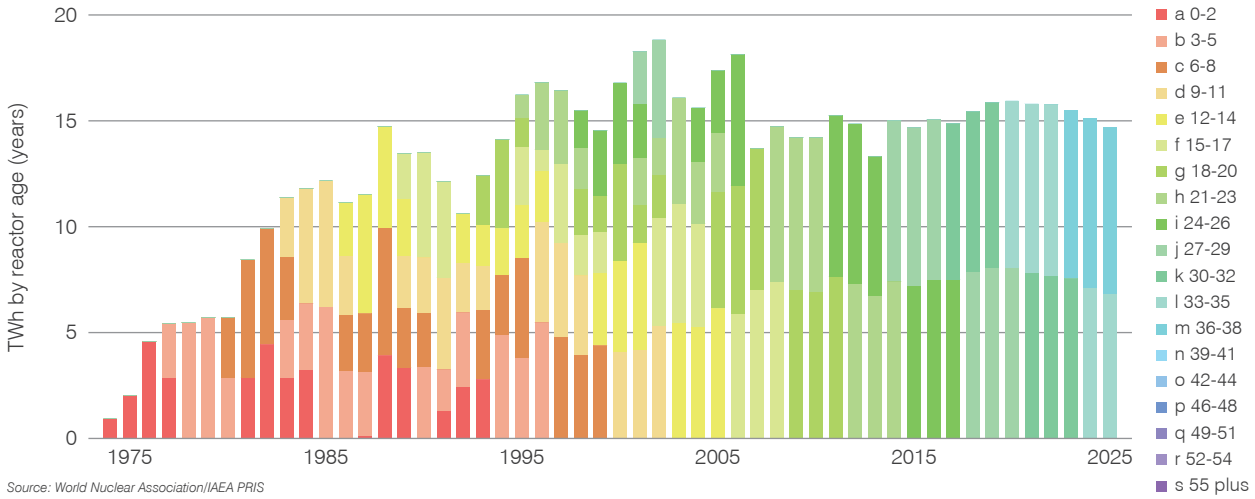
Bulgaria has two VVER-1000 reactors in operation, Kozloduy 5&6. Together, the two units generate around one-third of Bulgaria's electricity.

The two VVER-1000 units at Kozloduy began operating in 1987 and 1991. A programme of work was carried out between 2014 and 2019 to allow for 60 years of operation, and to uprate both reactors to 104% of their original capacities. The operating licences have initially been extended by ten years, to 2027 and 2029.

Table Bu.1 Nuclear capacity status (as of 1 October 2026)

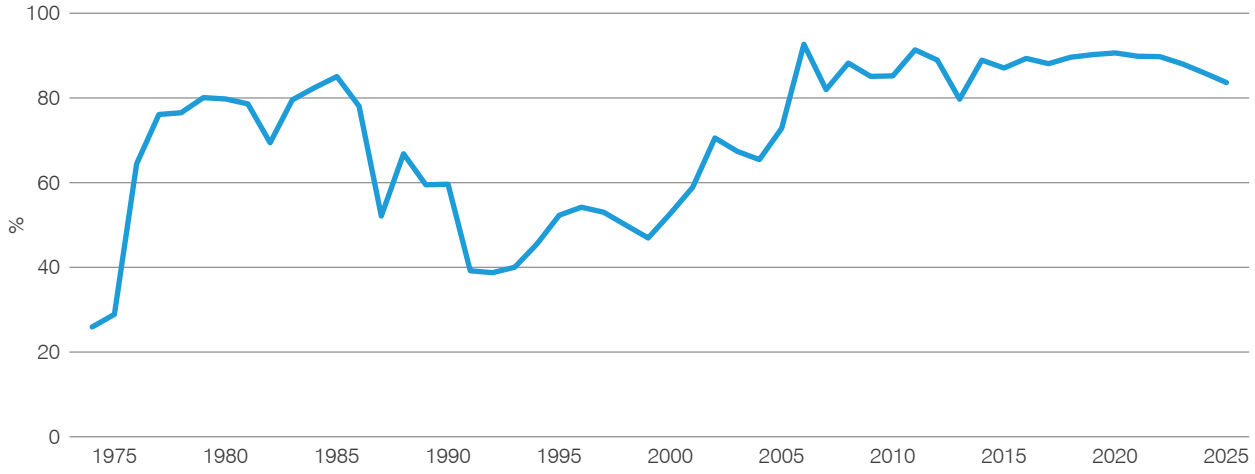
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
2	2006	2080	0	-	644

Figure Bu.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Bu.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

Additional units have been under consideration at Kozloduy and at Belene since the 1980s. In March 2024 the Bulgarian parliament ratified an agreement with the USA on coordination regarding construction of Westinghouse AP1000s as Kozloduy 7&8.

In February 2024 the Bulgarian parliament gave the go-ahead for talks to take place with Hyundai E&C, as the sole shortlisted constructor for engineering, construction, delivery and commissioning of the new units at Kozloduy. In July 2025 Bulgaria's Ministry of Energy and the US's Citi bank agreed a partnership to secure funding for the construction of the two AP1000 units.

In December 2025 Kozloduy NPP-New Build EAD and a consortium comprising Laurentis Energy Partners, its subsidiary Canadian Nuclear Partners SA (CNPSA) and BWXT Canada, signed an owner's engineer contract to advance the two new AP1000 units. In April 2026 Minister of Energy Traycho Traykov said Bulgaria wanted the new Kozloduy reactors to be built at fixed prices. The current aim is for the first AP1000 to be operational in 2035, and the second unit two years later.

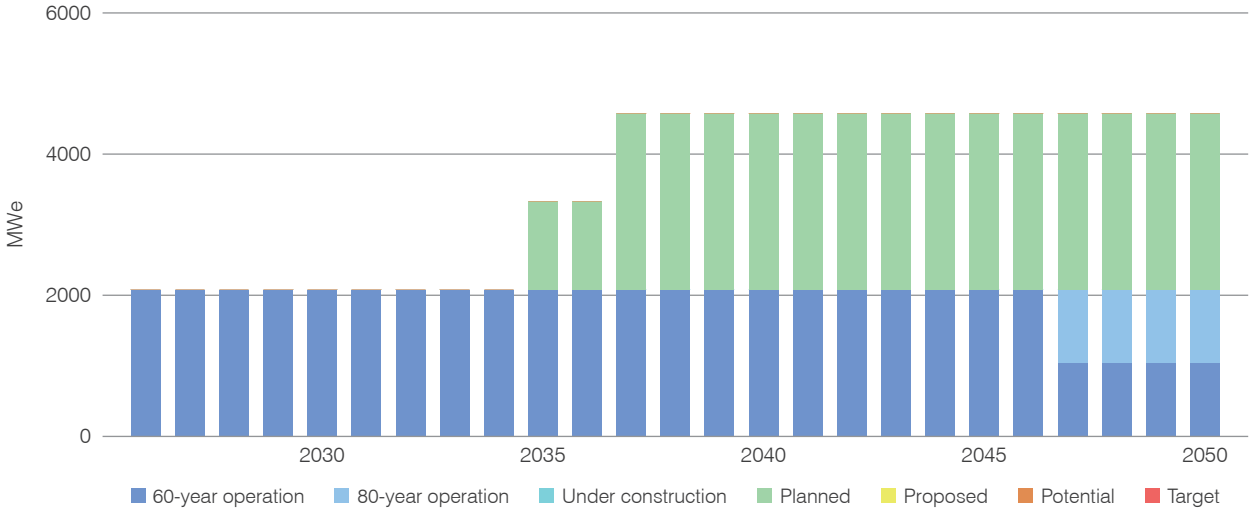
Bulgaria has also been considering deploying SMRs. A grant agreement was signed by the US Trade and Development Agency with state-owned Bulgaria Energy Holding (BEH) in December 2024 for a technical analysis of US-sourced small modular reactor (SMR) design options to support Bulgaria's planned deployment of one or more SMR nuclear plants.

Table Bu.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
1040	1040	-	2500	-	-	4000	-	4580

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Bu.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Bulgaria has a strong institutional foundation for both long-term operation and new build. Its regulator and operating organizations are highly experienced, while the project company is adding new build expertise.

Country Category	Restarter
Policy Framework Readiness	Moderate-High Bulgaria has strong policy readiness. Its nuclear objective is supported by formal decisions covering both long-term operation (LTO) and new build. There are still several investment, contracting and financing decisions needed for the Kozloduy project to proceed.
Institutional & Infrastructure Readiness	High Bulgaria has a good institutional foundation for both LTO and new build. Its regulator and operating organizations have relevant experience, while the Kozloduy project company is adding new build expertise. This readiness can be maintained by ensuring its regulatory, owner, engineering and construction workforce grow to manage the two AP1000 projects alongside continued LTO and decommissioning responsibilities.
Programme & Project Development Readiness	Moderate-High For Kozloduy, the site and technology have been selected, and financing preparation and supply chain mobilization are substantive, with decisive construction commitments being the next step.
Target Achievability	Moderate-High Bulgaria has made good progress regarding the deployment of new capacity at Kozloduy. Moving promptly to construction will help ensure the project remains on track.

Canada

Current operations

Two Canadian provinces currently use nuclear power, with 16 Candu reactors operating over three sites in Ontario (Bruce, Darlington and Pickering), and one reactor (also a Candu) in Point Lepreau in New Brunswick. Extensive refurbishment programmes are being carried out to extend the operation of reactors at all four sites.

Refurbishment of units 3-8 at the Bruce plant began in 2020 and is expected to extend the operation of each unit by 30-35 years. Units 6&3 have returned to service, with the remaining refurbishments scheduled to be completed by 2033. Units 1&2 at the site had previously been refurbished and returned to operation in 2012.

At Darlington refurbishment of the four units was carried out between 2016 and 2026. The work should extend operation by up to 30 years.

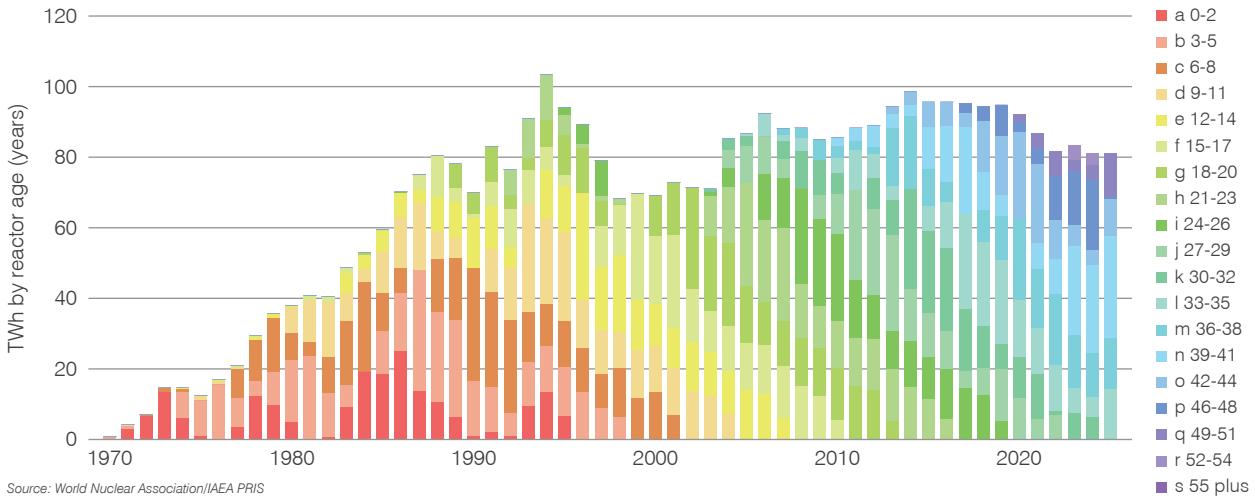
Pickering 1&4 were permanently shut down in 2024. Refurbishment of the four operable units at Pickering (units 5-8) is planned to begin in 2027 and is expected to be completed by the mid-2030s.

Point Lepreau underwent refurbishment in 2008-2012. The unit is expected to continue to run for several decades, with a possible second refurbishment in the early 2040s.

Table Ca.1 Nuclear capacity status (as of 1 October 2026)

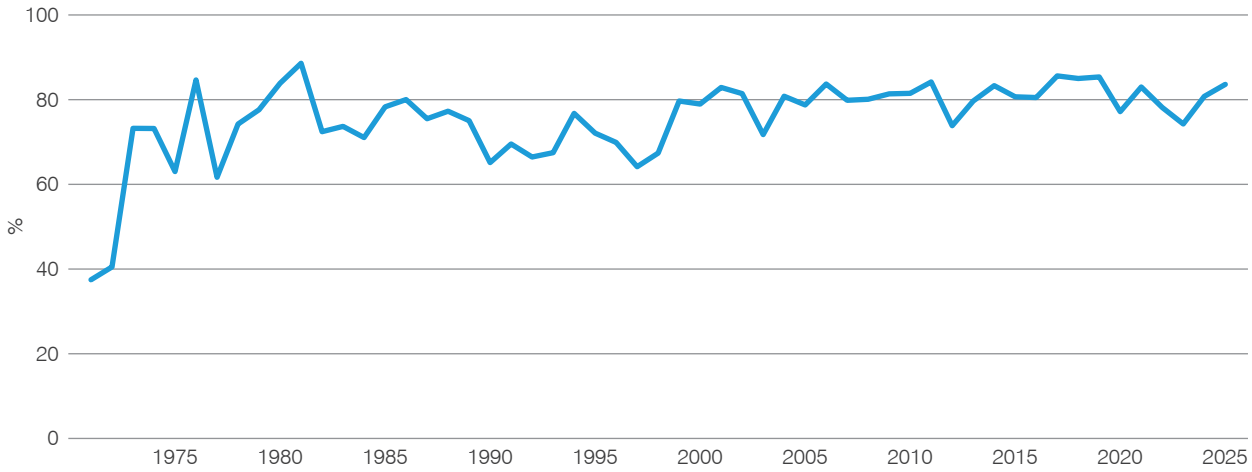
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
17	12,714	13,579	0	-	3600

Figure Ca.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Ca.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

National government support for nuclear power in Canada is strong. In January 2024 Canada became the first country to include nuclear power finance in green bonds.

In June 2026, the government released its national nuclear strategy. Key objectives under the new-build plans include enabling the construction of up to ten new large-scale reactors, with two under construction by 2035 and five more planned or under development by 2040; at least one nuclear deployment operational or under construction outside Ontario by 2035; and a Canadian microreactor to be demonstrated by 2035 and deployed to remote communities in the late 2030s.

The government will aim to centralize federal support for new nuclear build and the regulatory framework for nuclear projects will be streamlined, with a target of completing federal regulatory review within two years. The plan also includes the objective of securing fuel supply chains for all reactors in Canada, including enriched fuel. The report also aimed to enable the development of SMRs, in partnership with interested jurisdictions.

Ontario

In February 2024 the Ontario government committed to providing CAD50 million ($35 million) of funding to support pre-development work to study the feasibility of building up to 4800 MWe of new generating capacity at the Bruce site. In May 2026 Ontario's government announced a cost-sharing and recovery agreement enabling Bruce Power to move ahead with an estimated CAD300 million (USD210 million) of pre-development work for the Bruce C new nuclear project. According to a study by the Ontario Chamber of Commerce, the Bruce C project would contribute CAD238 billion (USD167 billion) over its lifetime to Canada's economy.

In June 2025, the Ontario government released its Energy for Generations energy roadmap, which noted that, according to the Independent Electricity System Operator, the province could need up to 17.8 GWe of new nuclear generation by 2050 to meet rising demand in a high electrification scenario. Achieving the capacity target in this scenario would require building eight large nuclear units at the Wesleyville site in Port Hope (in addition to the four units at Bruce C) alongside Bruce 1&2 being refurbished a second time.

With regard to small modular reactors, in December 2021, OPG announced the selection of GE Hitachi's BWRX-300 for the Darlington SMR project. Construction of the first unit commenced in June 2026, with completion of the unit scheduled for 2030. A total of four BWRX-300 reactors are planned at the Darlington site.

New Brunswick

In its energy roadmap published at the end of 2023, New Brunswick's government committed to having 600 MWe of new nuclear generation as part of plans to achieve net-zero emissions in its electricity sector by 2035.

NB Power is currently working with ARC Clean Technology Canada to build an ARC-100 sodium-cooled fast reactor at the Point Lepreau site, with operation targeted by 2029.

Alberta

Alberta has committed to developing a nuclear generation strategy by January 2027. The main focus is on small modular reactors, which could power remote, energy-intensive sites including oil sands operations.

A partnership between OPG and Capital Power, is exploring the regulatory and permitting processes needed to deploy an SMR in Alberta around 2035.

Electricity demand from data centres has also raised interest in the Peace River Nuclear Power Project in Alberta that would consist of four Candu Monark reactors capable of supplying up to 4800 MWe.

Saskatchewan

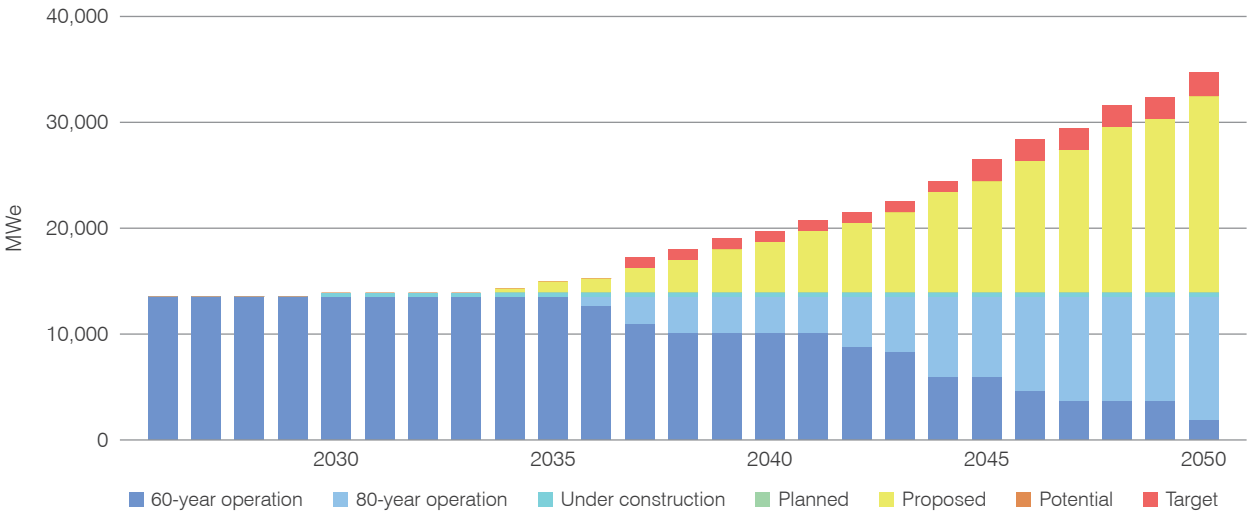
Around three-quarters of electricity in Saskatchewan is generated from fossil fuels. Saskatchewan government-owned SaskPower has selected the BWRX-300 for potential deployment at Rafferty Dam Reservoir in the mid-2030s. SaskPower is also evaluating large reactor technologies in parallel with the BWRX-300 programme.

Table Ca.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
1868	11,711	316	100	18,464	-	20,800	2236	34,695

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Ca.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Canada is a mature nuclear country with a strong long-term operation programme and a substantial prospective new-build pipeline. Recent reactor refurbishment projects have been delivered with good budget control and ahead of schedule. Construction has started on the first Darlington SMR. Its prospective large reactor and wider provincial pipeline is substantial but remains at an early stage.

The national nuclear strategy identifies new potential nuclear capacity, categorized in the previous World Nuclear Outlook Report as part of the provincial governments' targets.

Country Category	Expander
Policy Framework Readiness	High Canada has strong policy readiness, particularly in Ontario. The June 2026 federal strategy improves national coordination, but electricity remains primarily in the hands of provincial governments.
Institutional & Infrastructure Readiness	High Canada has a well-established regulator, legal framework, utilities, domestic industry and waste management institutions that can support both long-term operation and new build. These institutions will need to be expanded in response to the additional activity set out in the new build programme.
Programme & Project Development Readiness	Moderate-High Canada has very high project development readiness for long-term operation and the first Darlington SMR. Canada's prospective large reactor and wider provincial pipeline is substantial but remains at an early stage.
Target Achievability	Moderate With the Bruce C and Port Hope proposals, Ontario now has identified potential capacity that would meet much of its 17.8 GWe target for new nuclear build, as well as having its first SMR construction underway. Meeting the target will need the pace of planning and construction to accelerate faster than that outlined in the national government's strategy.

China

Current operations

China has 64 operable reactors, totalling 64 GWe of net nuclear capacity. There are 39 reactors under construction in China, with a total capacity of 45 GWe.

Since the start of 2026 four reactors have been connected to the grid, Changjiang 3, Taipingling 1&2 and San'ao 1, all four reactors being Hualong One models. In July 2026 the State Council approved construction of eight reactors: three pairs of Hualong One reactors at Jinqimen, Taipingling and Zhuanghe; and two Guohe One (CAP1400) reactors at Laiyang.

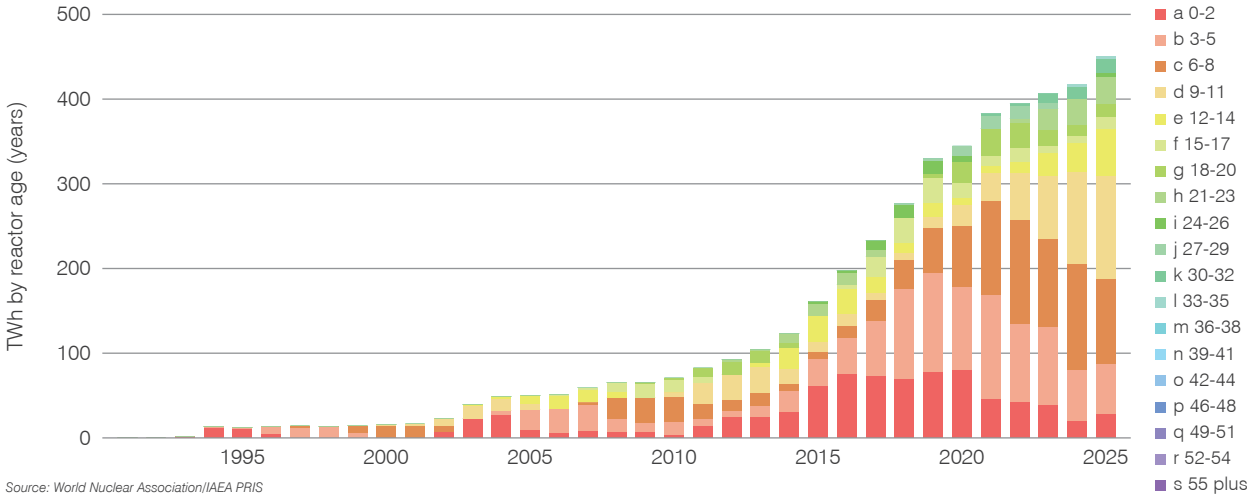
The ACP100 Linglong One SMR at Changjiang, Hainan nears operation. A new SMR design, the ACP100 (or 'Linglong One') is due to start up in 2026. The 125 MWe integrated PWR is being built at the Changjiang site in Hainan.

In January 2026 first concrete was poured for unit 1 of the Xuwei nuclear power project in Jiangsu province, which will supply both industrial heating and electricity by coupling a three-module high-temperature gas-cooled reactor unit with two Hualong One pressurized water reactors, primarily serving Lianyungang's petrochemical base.

Table Ch.1 Nuclear capacity status (as of 1 October 2026)

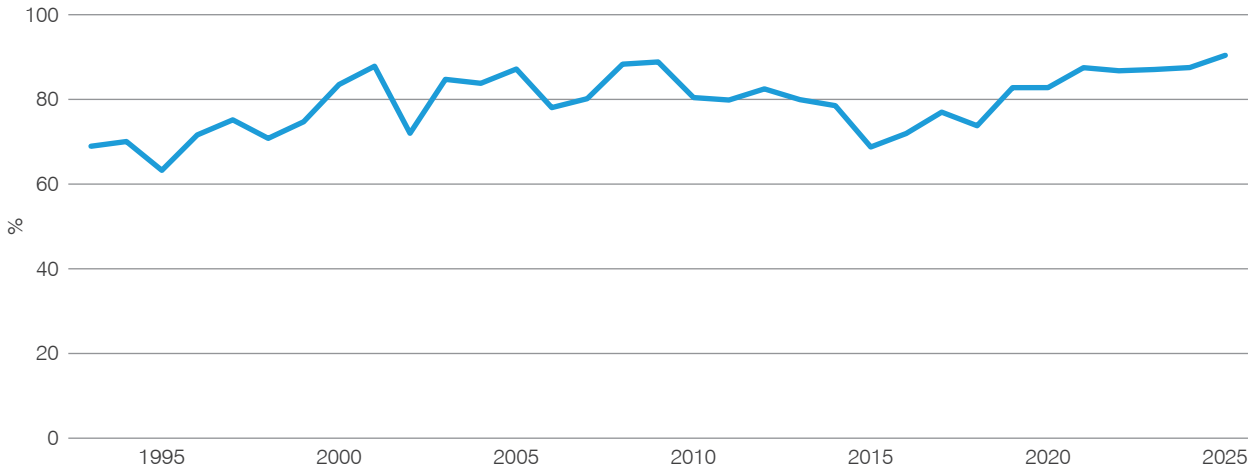
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
64	63,902	68,468	39	44,712	4333

Figure Ch.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Ch.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

China's 15th Five-Year Plan (2026-2030), issued in March 2026, places nuclear alongside wind, solar and hydropower as part of a "ten-year action to double non-fossil energy". The plan set a goal to increase operating nuclear capacity to about 110 GWe by 2030; use Generation III PWRs as the principal technology; maintain a steady pace of nuclear construction; advance research, development and demonstration of advanced reactor designs; and expand non-electric and integrated uses of nuclear energy.

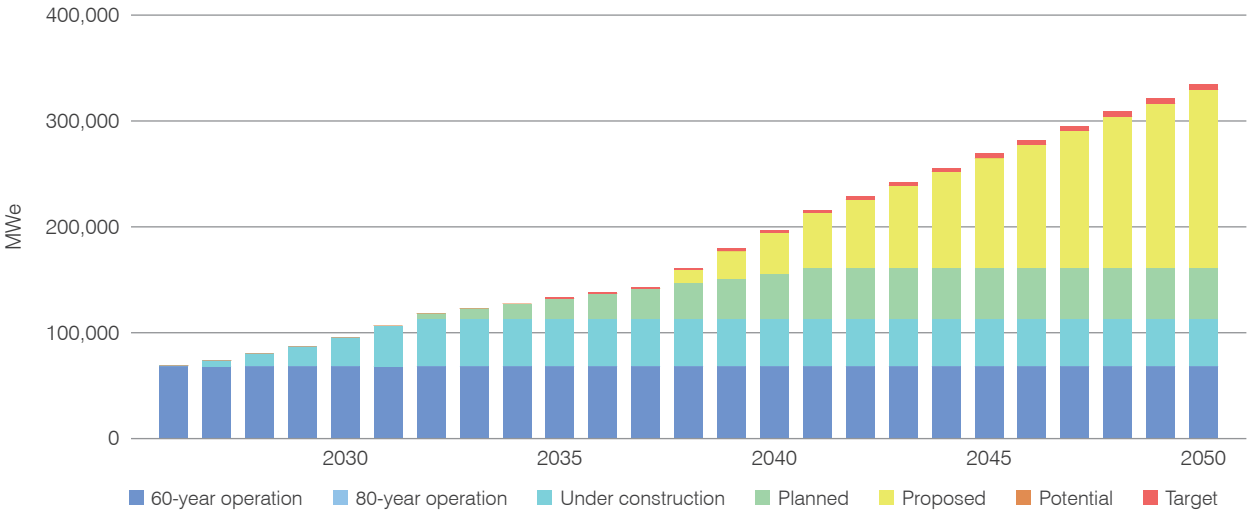
In 2022, China Nuclear Energy Association projected China's nuclear capacity reaching 110 GWe by 2030 and 150 GWe by 2035. Another study, produced in 2019 by China Nuclear Power Development Centre, a research institute under the National Energy Administration, said that China's nuclear capacity could reach 335 GWe in 2050. This figure is consistent with the total capacity in World Nuclear Association's assessment of existing reactor capacity, reactors under construction, planned and proposed, which reaches over 320 GWe by 2050. In each year between 2022 and 2025, nuclear projects with a combined capacity of more than 12 GWe have been approved. Construction starts have lagged behind, with construction starting on 5.0 GWe, 6.2 GWe, 8.7 GWe and 10.2 GWe respectively between 2022 and 2025.

Table Ch.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
68,468	-	44,712	48,045	168,575	-	335,000	5200	335,000

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Ch.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

China has a large operating fleet, the world's largest construction pipeline, a state-backed financing and utility structure, a mature regulator, large domestic reactor vendors, high localisation, a rapidly expanding nuclear supply chain, and active development of large reactors, SMRs, high-temperature reactors, fast reactors and fuel-cycle infrastructure.

Country Category	Pacesetter
Policy Framework Readiness	Moderate-High China's 110 GWe objective for 2030 is supported by a large physical construction pipeline, established project sponsors and continued central government approval of new projects.
Institutional & Infrastructure Readiness	High China has well-establish institutional and infrastructure capacilities already supporting serial delivery of reactor construction.It has mature regulation, state-backed utilities, vendors and supply chains.
Programme & Project Development Readiness	High China has very high readiness for continued large reactor deployment. Projects have identified sites, selected technologies, established owners, finance, construction organizations, licensing pathways and domestic supply chains.
Target Achievability	High China's government has historically set a series of challenging short-medium term targets for nuclear capacity. The current capacity of operable and under construction reactors suggests China is on track to reach the goal of 110 GWe by 2030, or very shortly afterwards. Longer-term goals have been expressed by government-affiliated institutions but not formalized by the government, but would require only a moderate increase in build rates from current levels.

Czech Republic

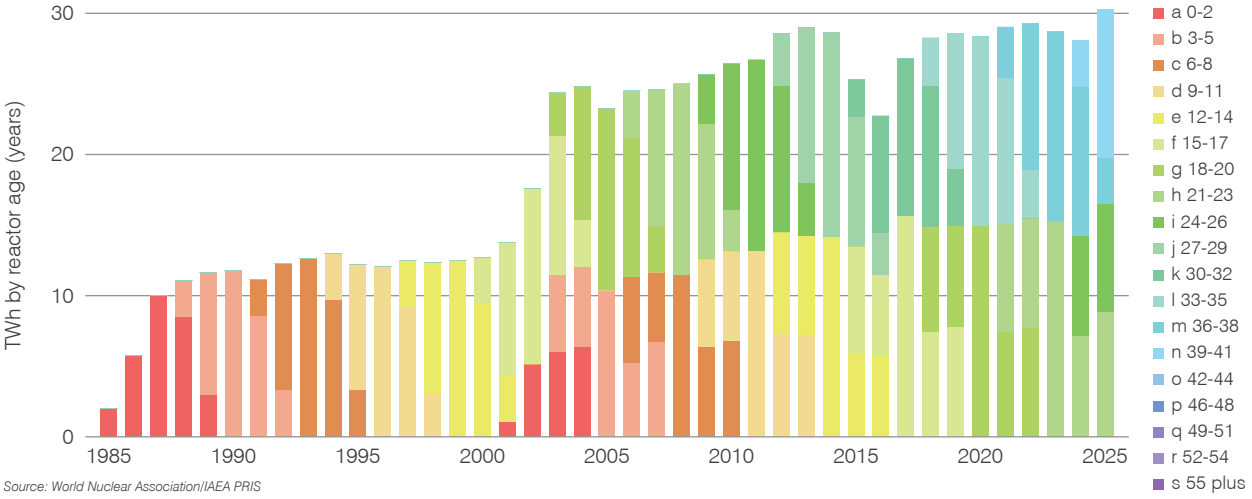
Current operations

The Czech Republic has six operable VVER reactors. In June 2020 Czech energy group ČEZ stated that it expected to invest about $2.3 billion over the next 27 years to extend the operating lifetimes of the four VVER-440 reactors at Dukovany by a further 20 years to a total of 60, which would see the last unit retire in 2047.

Table Cz.1 Nuclear capacity status (as of 1 October 2026)

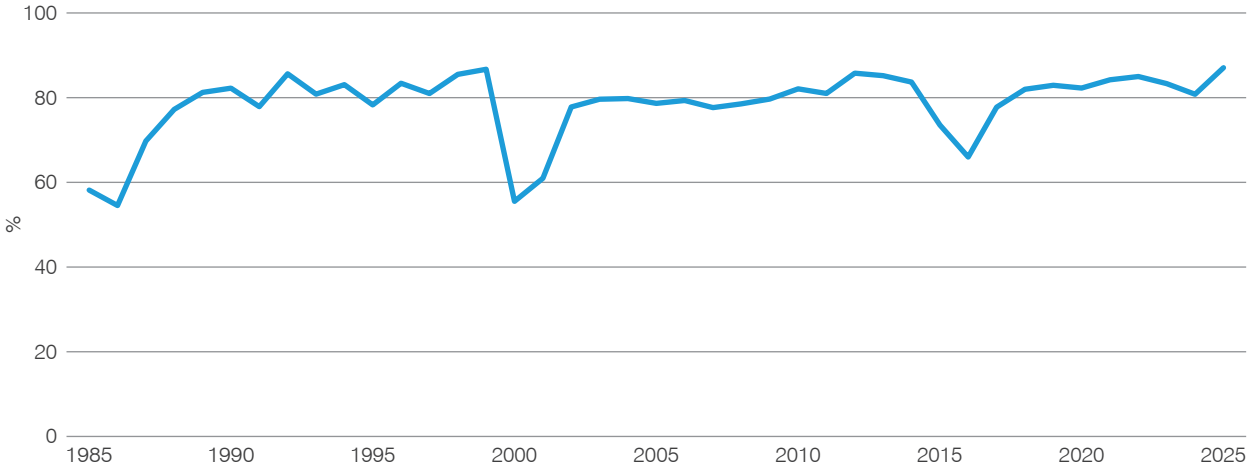
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
6	3972	4216	0	-	778

Figure Cz.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Cz.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

The January 2025 National Energy and Climate Plan states that the share of generation provided by nuclear should rise to 68% by 2040 and then falling to 46% by 2050. Based on the government's 'With Additional Measures' scenario this would be equivalent to the output of around 8 GWe of nuclear capacity.

The Czech government selected KHNP as its preferred bidder in July 2024 for two APR-1000 units at Dukovany. According to KHNP they would be eligible to sign additional contracts for the two Dukovany units if the Czech government decides within three years to proceed with Temelín units 3&4. TheAn EPC contract for two APR1000 units at Dukovany was signed in June 2025.

The government's Economic Strategy, published in 2026, set the target of starting construction of two units at Dukovany by 2029. It also committed to continuing the preparation of potential new nuclear projects at the Temelín site, and to prepare conditions for the construction of the country's first small modular reactor.

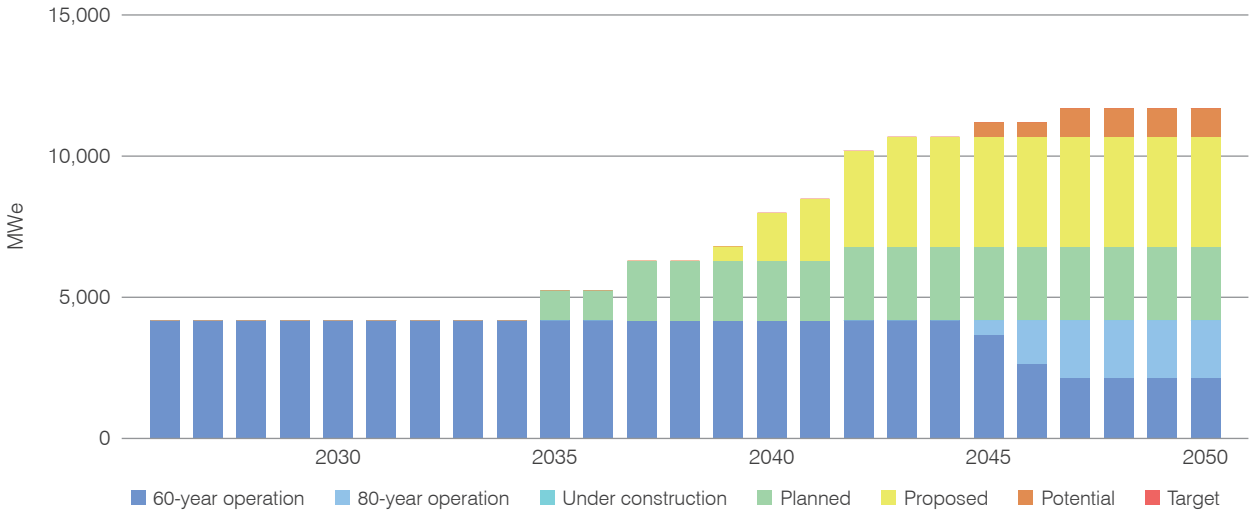
ČEZ has acquired a 20% stake in the UK's Rolls-Royce SMR, and is looking to build Rolls-Royce SMR's 498 MWe units in the Czech Republic. The first unit is planned to be completed at the Temelín site by 2035. A further five units would be built in the Czech Republic by 2050. In July 2026 an early works agreement was signed by ČEZ and Rolls-Royce SMR identifying Tušimice and Dětmarovice as additional sites.

Table Cz.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
2146	2044	-	2598	3894	996	-	-	11,678

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Cz.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

The Czech Republic has moved its principal large reactor project at Dukovany beyond technology selection and tendering into binding engineering, procurement and construction contracts for two units. Site investigations, licensing preparation and supply chain contracting are underway. Further clarity is required regarding the construction of additional large units at Temelín, and SMRs.

Country Category	Expander
Policy Framework Readiness	Moderate-High Nuclear is firmly embedded in energy security, coal replacement and decarbonization policy. Two large reactors are contracted and further large reactors and SMRs form part of the longer-term strategy.
Institutional & Infrastructure Readiness	High The Czech Republic has an experienced regulator, an established utility and operator, a substantial domestic nuclear sector, functioning interim spent fuel arrangements and a state organization responsible for final waste disposal.
Programme & Project Development Readiness	Moderate-High The Dukovany project has: completed environmental assessment; a signed two-unit EPC contract; a state-controlled project company; an established project timetable; and active Czech and Korean supply chain contracts. The plans for long-term operation for the existing reactors are progressing. The Rolls-Royce SMR pathway is supported through ČEZ's role as a strategic shareholder.
Target Achievability	Moderate Delivery of the contracted Dukovany units is credible, with construction due to start by 2029 and trial operation of the first unit by end-2036. But the 2040 ambition of about 8000 MWe is not fully covered by contracted projects: Temelín 3&4 are undecided and the first SMR is planned only for 2035.

Ecuador

Nuclear policy and outlook

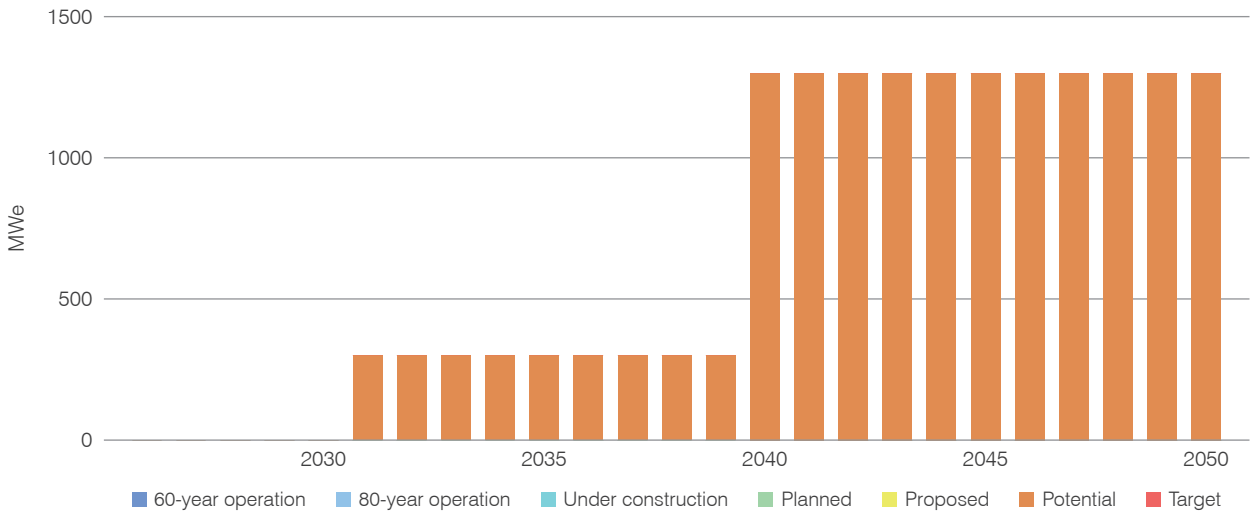
Ecuador has strong presidential support for introducing nuclear power, driven by the need to diversify electricity supply following the severe shortages of 2024. In May 2025 President Daniel Noboa announced an intended nuclear energy law in his inauguration address. Government statements have outlined both a 300 MWe small modular reactor in the medium term and a longer-term large reactor programme.

Table Ec.1 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	-	-	-	-	1300	1300	0	1300

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Ec.1 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

The long-term direction of policy – pursuing nuclear power, most likely via SMR technology, as part of a diversified generation mix – appears durable at the presidential level. The likelihood of commissioning a first reactor by the currently cited 2031 date, however, is very low.

Country Category	Candidate
Policy Framework Readiness	Moderate Strong, repeated presidential commitment and a stated (if shifting) roadmap; draft Atomic Energy Law exists but remains unenacted and unsubmitted to the Assembly.
Institutional & Infrastructure Readiness	Low-Moderate No independent nuclear regulator yet; coordinating body created but not operational; minimal domestic specialist capacity.
Programme & Project Development Readiness	Low No confirmed site, technology, vendor or financing; no tender launched; latest official electricity plan omits a nuclear project.
Target Achievability	Low Revised ~2031 SMR target implies delivery within approximately five years, without legislation, regulator, site or vendor yet in place.

Egypt

Current operations

Four reactors are under construction at El-Dabaa, with construction starting on the first unit in July 2022. The first unit is due to start up by the end of 2028.

Table Eg.1 Nuclear capacity status (as of 1 October 2026)

Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
0	0	0	4	4800	0

Nuclear policy and outlook

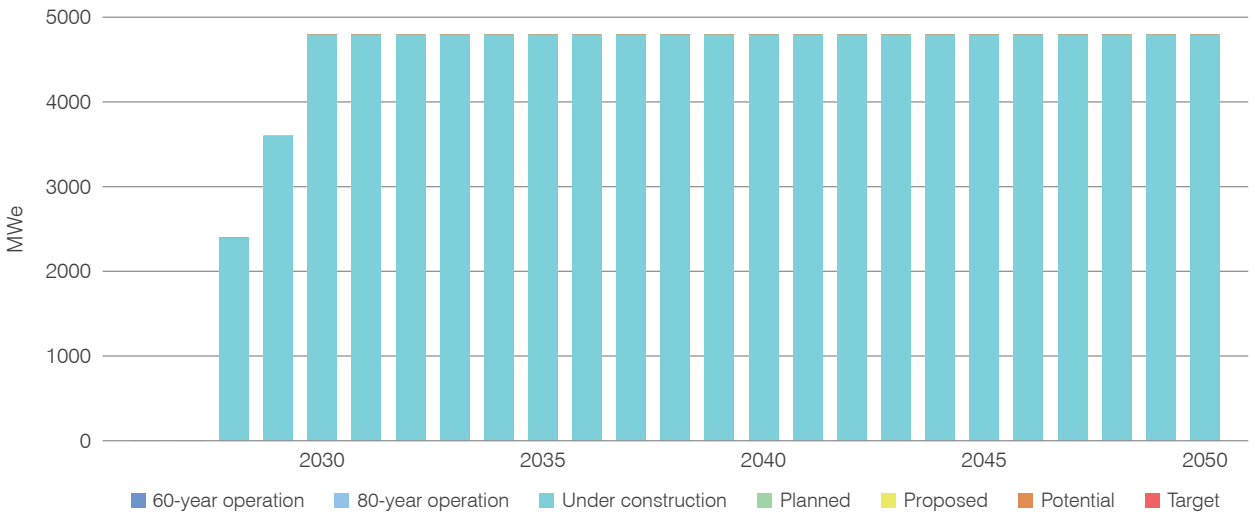
The four VVER-1200 units under construction at El Dabaa are expected to start up progressively over 2028 to 2030. In August 2026, the Egyptian Ministry of Electricity held preliminary discussions with Rosatom on the expansion of the El Dabaa site with two further VVER-1200 reactors, as well as to potentially deploy small modular reactors. These early proposals are not included in the WNOR 2050 capacity assessment for Egypt.

Table Eg.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
0	0	4800	-	-	-	-	-	4800

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Eg.1 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

The four El Dabaa units are under simultaneous construction. The main project risk is execution schedule rather than commitment.

Country Category	Newcomer
Policy Framework Readiness	High Strong and durable government commitment, four-unit project fully contracted and financed, established delivery organization and evidence of intention to continue nuclear construction beyond the first four units.
Institutional & Infrastructure Readiness	High Regulator, owner/operator, workforce development structures and waste arrangements are established.
Programme & Project Development Readiness	High All four reactors are under construction; major nuclear equipment is being installed and first fuel delivery is scheduled for 2027.
Target Achievability	Moderate-High Completing all four units by 2030 remains demanding for a first nuclear programme, but start-up of the first unit remains on track for 2028.

Estonia

Nuclear policy and outlook

In June 2024, the Estonian parliament passed a resolution supporting the adoption of nuclear energy in the country. Estonia has joined the European Nuclear Alliance to promote the use of nuclear energy.

In June 2026, the Estonian parliament passed the Nuclear Energy and Safety Act. The Act establishes an independent nuclear regulator and creates a phased nuclear licensing system. An amendment during the Act's passage requires parliamentary approval before any nuclear construction can proceed.

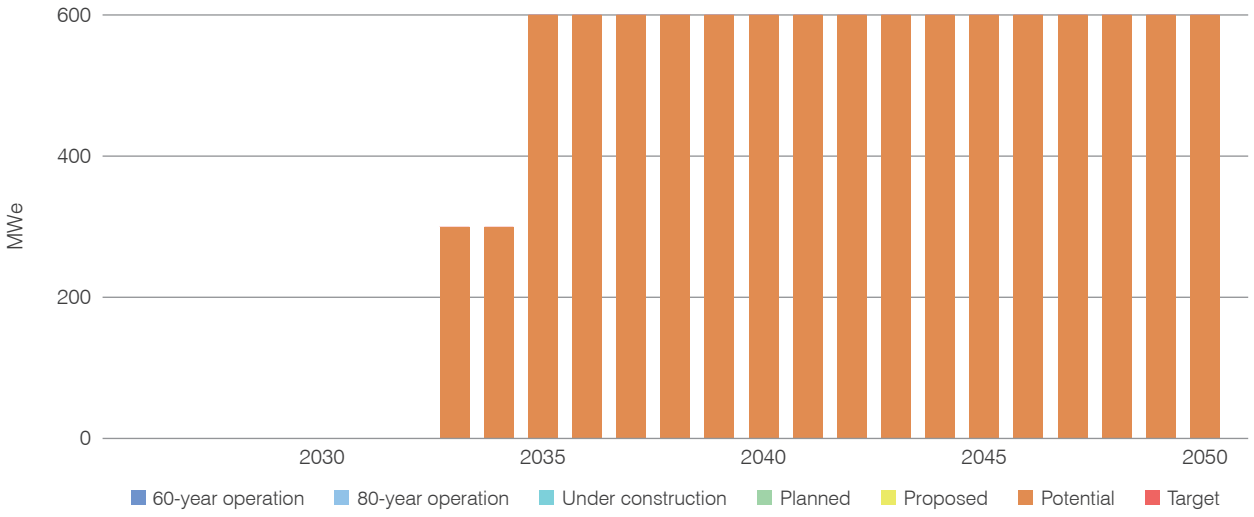
Fermi Energia, a privately-owned Estonian developer, applied in January 2025 to begin state spatial planning for two GE Hitachi (now GE Vernova Hitachi Nuclear Energy) BWRX-300 units. Two candidate sites, both in the Virumaa region of northeastern Estonia, are under evaluation: Kunda in Viru-Nigula county and Aa in Lüganuse county.

Table Ee.1 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	-	-	-	600	-	-	-	600

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Ee.1 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Estonia is making progress in terms of setting a policy framework with the passing of the Nuclear Energy and Safety Act. Delivery of 600 MWe of capacity by the middle of the next decade will require concerted progress on establishing institutions and infrastructure as well as on the Fermi Energia BWRX-300 project.

Country Category	Candidate
Policy Framework Readiness	Moderate Parliament has endorsed preparations for nuclear power, comprehensive legislation has been passed, and government planning processes are underway. There is no set government capacity target.
Institutional & Infrastructure Readiness	Moderate Estonia has created the legal basis for a nuclear regulator, which is due to become operational in January 2027.
Programme & Project Development Readiness	Moderate Fermi Energia has selected the BWRX-300, initiated statutory site planning and assembled experienced international development partners.
Target Achievability	Low-Moderate Two units totalling 600 MWe by, or soon after, 2035 would require an efficient transition from site selection to licensing, financing and construction. (Assessed on the basis of the developer target.)

Finland

Current operations

Finland has five operable nuclear reactors, three at Olkiluoto and two at Loviisa.

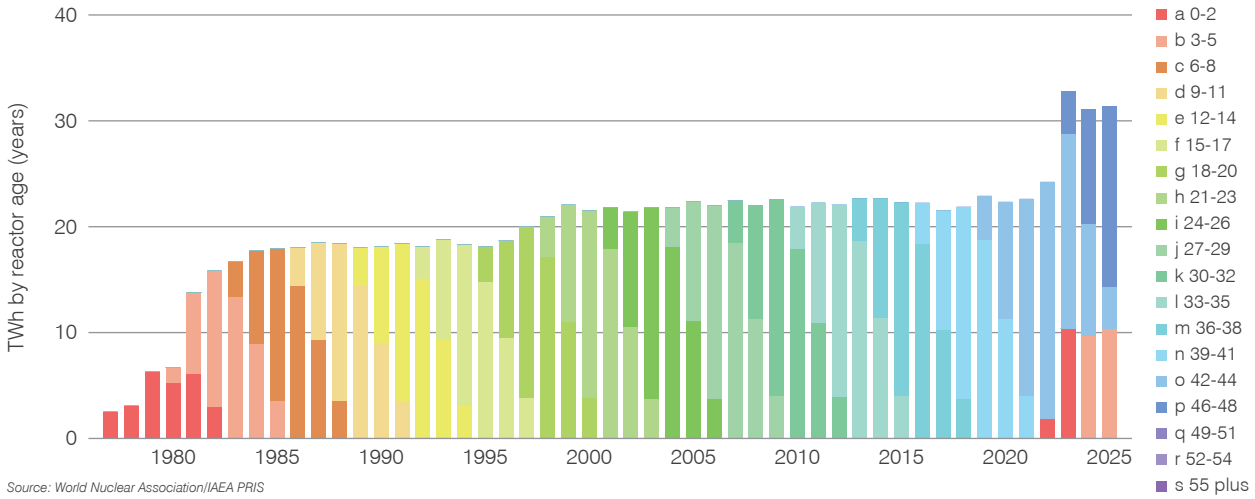
TVO's Olkiluoto 1&2 started up in 1978-80 and currently have a planned operating lifetime of 60 years, although TVO is considering extending operation further by at least ten years.

The two 890 MWe units have been uprated from their original net capacity of 660 MWe, and TVO intends to progressively uprate them further to around 970 MWe each.Continuation of energy production at the two units at Loviisa is planned until the end of 2050 at the latest, which would require operating lifetimes over 70 years. In September 2026, Fortum and Google announced a 22-year power purchase agreement covering up to 50% of Loviisa's output, phasing in from 2028 and running through the plant's licensed operating lifetime to 2050.

Table Fi.1 Nuclear capacity status (as of 1 October 2026)

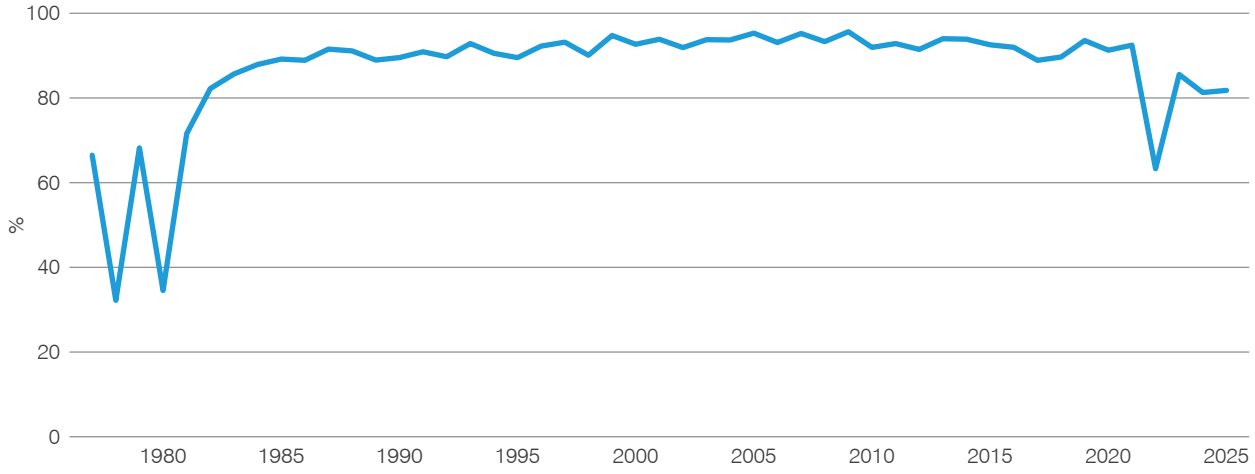
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
5	4369	4562	0	-	918

Figure Fi.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Fi.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

In March 2026 a study on the options, costs and electricity market impacts of promoting nuclear energy production was submitted to Finland's Ministry of Climate and the Environment, which had commissioned the report. The study concluded that the construction of an additional 2400 MWe of nuclear power capacity would reduce the annual average price of electricity by about EUR5–7 (USD5.8-8.1) per MWh in the years 2040–2060. Extending the operation of existing reactors would generate a significant net benefit, as it would lower electricity prices but would not require state aid.

Also in March 2026, the Finnish government submitted a proposal to parliament for a new Nuclear Energy Act, intended to enter into force on 1 January 2027. The legislation would create more flexible approval, licensing and reporting procedures, supporting the replication of plant designs and the use of different delivery models over a plant's life-cycle. It would also facilitate the introduction of new nuclear technologies, including SMRs, and allow plants to be located closer to energy users, which would be beneficial – for example - for the installation of district heating systems.

Several studies and site assessments for new nuclear units in Finland are ongoing but these developments have not yet reached a stage where they would be reflected in Finland's 2050 capacity projection.

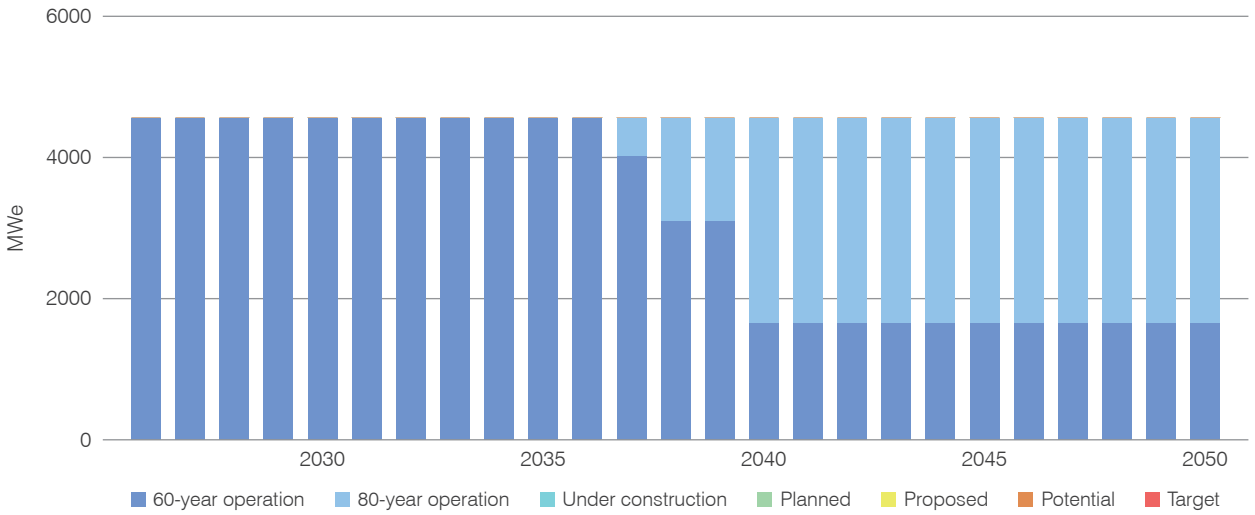
Amongst these is Fortum's signing of an early works agreement with GE Vernova Hitachi in June 2025 covering early project planning, site and design adaptation and licensing activities for potential BWRX-300 deployment in Finland and Sweden. It was one of three such agreements Fortum signed with technology providers (the others being with EDF and Westinghouse in partnership with Hyundai Engineering & Construction). In January 2026 Fortum also made a €2.1 million investment in Steady Energy under a framework agreement giving Fortum exclusive rights to provide operation and maintenance services for LDR-50 plants in Finland and Sweden.

Table Fi.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
1660	2902	-	-	-	-	-	-	4562

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Fi.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

The Finnish government is actively creating an enabling framework for future nuclear investment, including through the proposed Nuclear Energy Act. However, Finland has not adopted a numerical target for additional nuclear capacity or selected a national new build.

Country Category	Expander
Policy Framework Readiness	Moderate The government is improving legislation, examining financing models and supporting SMR research, but has not committed to a specific new reactor.
Institutional & Infrastructure Readiness	High Finland has recent experience of the institutional requirements of new build.
Programme & Project Development Readiness	Moderate Finland is well situated for the further operating lifetime extensions and capacity uprates proposed. Fortum has completed a substantial feasibility programme and is conducting early works with three technology pathways, but no power reactor technology, site, financing structure or investment decision has been selected.
Target Achievability	Moderate Finland has no quantified new nuclear capacity target. The qualitative objective of constructing additional nuclear capacity is credible, particularly from the late 2030s, but remains dependent on electricity demand and implementation of a viable risk sharing framework.

France

Current operations

France has 57 operable reactors at a variety of coastal and inland sites. During 2026 there have been a higher than usual number of curtailments to production due to low river levels or high temperatures.

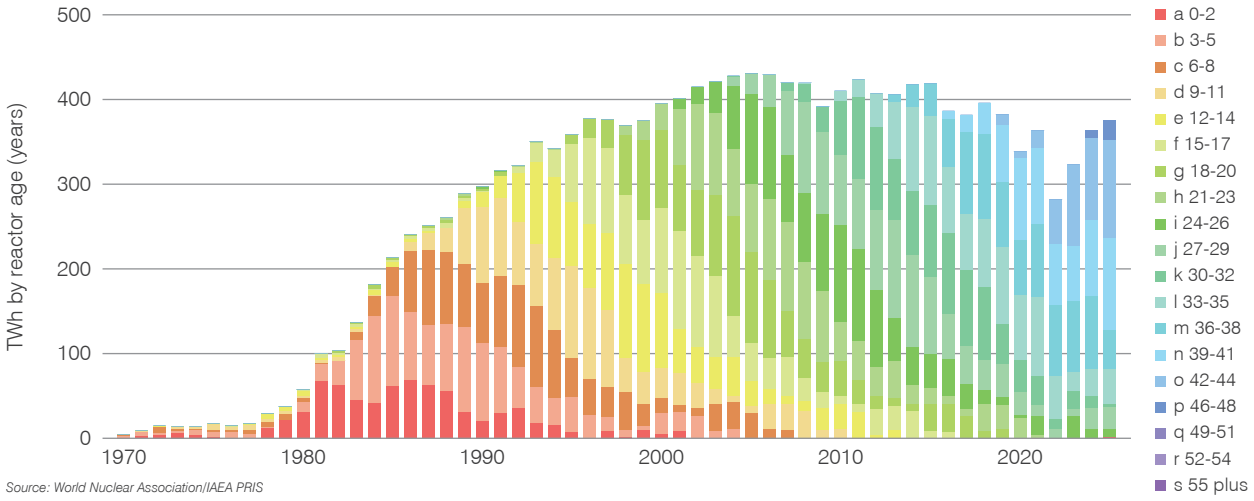
In February 2021, France's nuclear regulator set the conditions for the continued operation of EDF's 900 MWe reactors beyond 40 years. In August 2023 it approved the extended operation of Tricastin 1, making it the first reactor in the French fleet that can operate beyond 40 years.

In February 2023 President Macron's office said the feasibility of extending the operating lifetimes of its nuclear reactors beyond 60 years would be explored. In July 2025 the regulator decided that EDF's 1300 MWe reactors could operate beyond 40 years if "necessary upgrades" are carried out.

Table Fr.1 Nuclear capacity status (as of 1 October 2026)

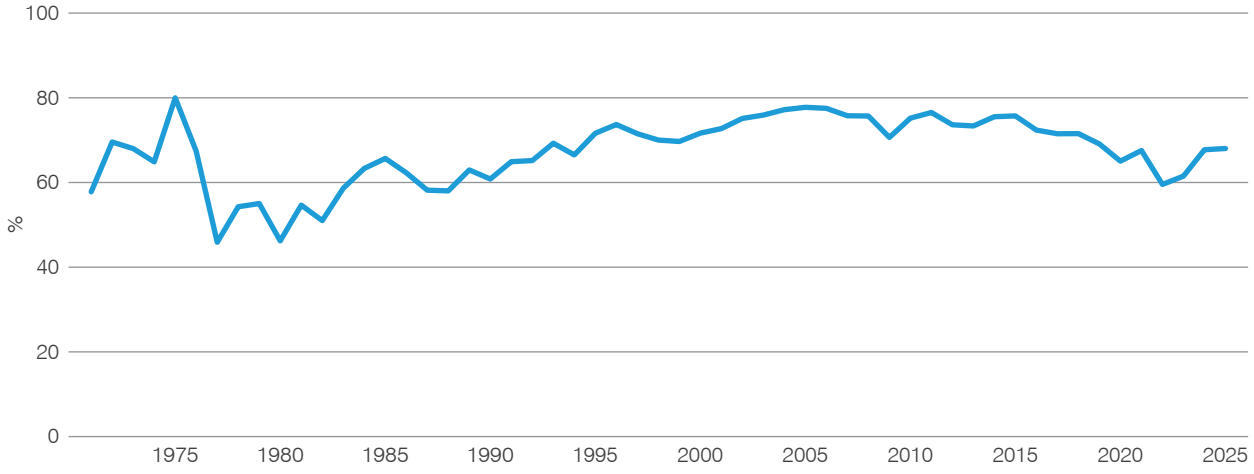
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
57	63,000	65,690	0	-	14,846

Figure Fr.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Fr.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

In February 2022 President Macron announced plans to build six new large reactors by 2050. A study would also be launched into the possibility of eight additional reactors, supported by the deployment of SMRs. The large units would be EPR2 units, a development of the EPR design.

Preparatory work for the first pair of EPR2 units was authorized to start at Penly in 2024, with first concrete planned around 2029. Authorization for preparatory work for two units at Gravelines was given in August 2026. The third site for the first tranche of EPR2s is Bugey. There are six candidate sites for the second tranche of EPR2 units: Nogent-sur-Seine, Golfech, Tricastin, Blayais, Creys-Malville and Chinon. A Nuclear Policy Council decision on which four of the sites, each with two reactors, would be chosen is expected before end 2026.

In February 2026 France published the third PPE (Programmation Pluriannuelle de l'Énergie), the country's official 10-year energy roadmap for 2026-2035. On nuclear power, PPE3 abandons the decommissioning plans of prior versions of the report, supports extending the lifespan of existing reactors, and confirms the construction of six new EPR2 reactors, with the first to enter service from 2038. It retains the option for eight additional EPR2 reactors, and consolidation and extension of operation of the 57 existing reactors.

In March 2026 the Nuclear Policy Council confirmed the first six-unit programme, a €72.8 billion construction-cost target in 2020 euros, financing principles including a subsidised state loan covering 60% of programme cost, and the objective of an EDF final investment decision before the end of 2026.

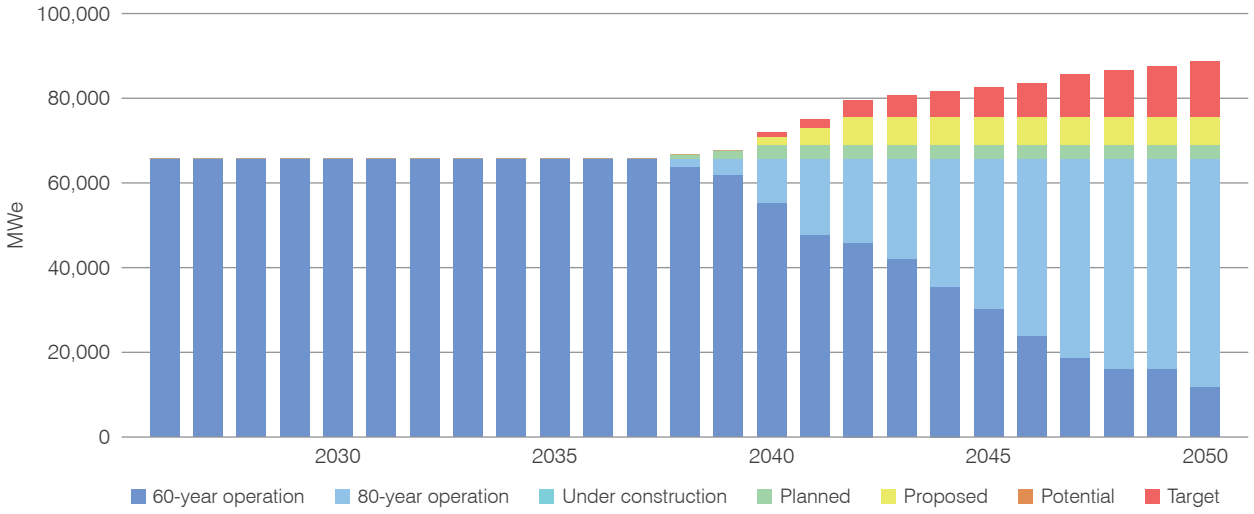
Aside from the EPR2 programme, TechnicAtome, Naval Group, EDF and CEA in France have developed the Nuward NP-300 PWR design, with applications for power, heat and desalination. In September 2026 the Nuward CEO said that the company aims to start construction of the first of an initial fleet of 10 units in 2030.

Table Fr.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
11,999	53,691	-	3300	6600	-	13,200 (new build)		

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Fr.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

France has one of the world's largest and most experienced nuclear power programmes, an extensive domestic nuclear supply chain, a full fuel cycle capability, a newly consolidated safety authority, and a formal policy to restore nuclear as a central pillar of energy sovereignty and decarbonization.

The strongest near-term capacity route is long-term operation of the existing fleet. France's new build programme is strategically important and should rapidly progress to construction following the final investment decision before the end of 2026.

Country Category	Expander
Policy Framework Readiness	Moderate-High Nuclear expansion is embedded in national energy policy, backed at presidential and government level, with six EPR2 reactors firmly identified and a further eight under consideration.
Institutional & Infrastructure Readiness	High France possesses the full institutional architecture required for a major nuclear programme and an extensive domestic supply chain.
Programme & Project Development Readiness	Moderate-High Sites, reactor technology, owner, licensing path, preparatory works, programme cost and financing structure are defined, but European state aid clearance and EDF's final investment decision remain outstanding.
Target Achievability	Moderate Delivery of six EPR2 reactors is credible, but the first unit 2038 operation date and subsequent build rate remain challenging given design, financing and supply chain requirements.

Ghana

Nuclear policy and outlook

Ghana has had aspirations to develop nuclear energy since the 1960s and currently has a target of about 1000 MWe of nuclear capacity operational by 2034. In September 2023, Nuclear Power Ghana (NPG) announced that it selected Nsuban in Ghana's Western Region as its preferred nuclear power plant location, with Obotan in the Central Region as a backup site.

Ghana signed a framework agreement with China National Nuclear Corporation (CNNC) in April 2024 to develop an HPR1000 (Hualong One) nuclear power plant. In August 2024, Nuclear Power Ghana (NPG) signed a two-year framework agreement with US developer and financier Regnum Technology Group for a NuScale VOYGR-12 multi-module SMR plant, targeting commercial operation in the mid-2030s.

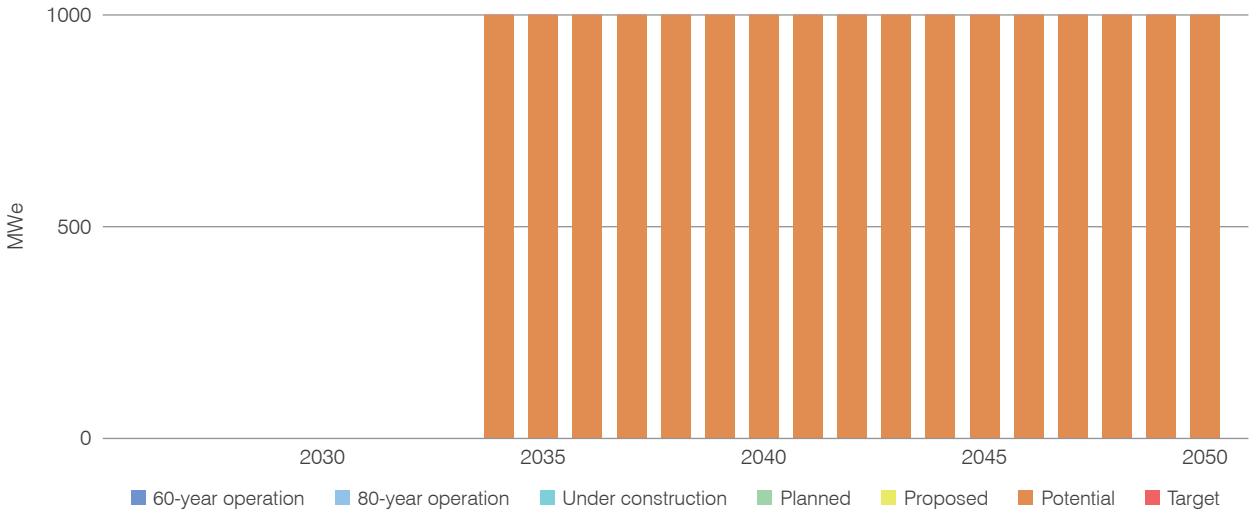
In March 2025, NPG announced that CNNC had been selected to develop an approximately 1200 MWe reactor under a build-operate-transfer model, alongside the NuScale SMR project. In early 2026, NPG reported that insufficient funding was delaying detailed site characterization and environmental impact studies.

Table Gh.1 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	-	-	-	-	-	1000	1000	1000

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Gh.1 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Ghana has a sustained commitment to introducing nuclear power, an established programme organization, a dedicated regulator and an emerging owner–operator.Preferred sites have been identified and partnerships established for both a large reactor and small modular reactors.

Country Category	Candidate
Policy Framework Readiness	Low-Moderate Durable political commitment, a 1000 MWe objective, owner/operator structure, vendor agreements and site programme are established, but final project and financing decisions remain outstanding
Institutional & Infrastructure Readiness	Low-Moderate Independent regulator, nuclear research capability and international training provide a sound base; power reactor licensing and project delivery remain untested.
Programme & Project Development Readiness	Low-Moderate Preferred site and two technology/vendor tracks are identifiable, but a funding shortfall has prevented these projects from reaching final contract, financing, or licencing stages.
Target Achievability	Low-Moderate Nuclear deployment remains credible, but the target of approximately 1000 MWe by 2034 is unlikely to be met.

Hungary

Current operations

Four VVER-440 reactors operate at the Paks nuclear power plant, 100 km south of Budapest. The plant generates around half of the electricity produced in Hungary, but supplies around one-third of electricity demand, as the country relies heavily on imported electricity. The plant operator intends to extend the operating lifetimes of the four units to 70 years.

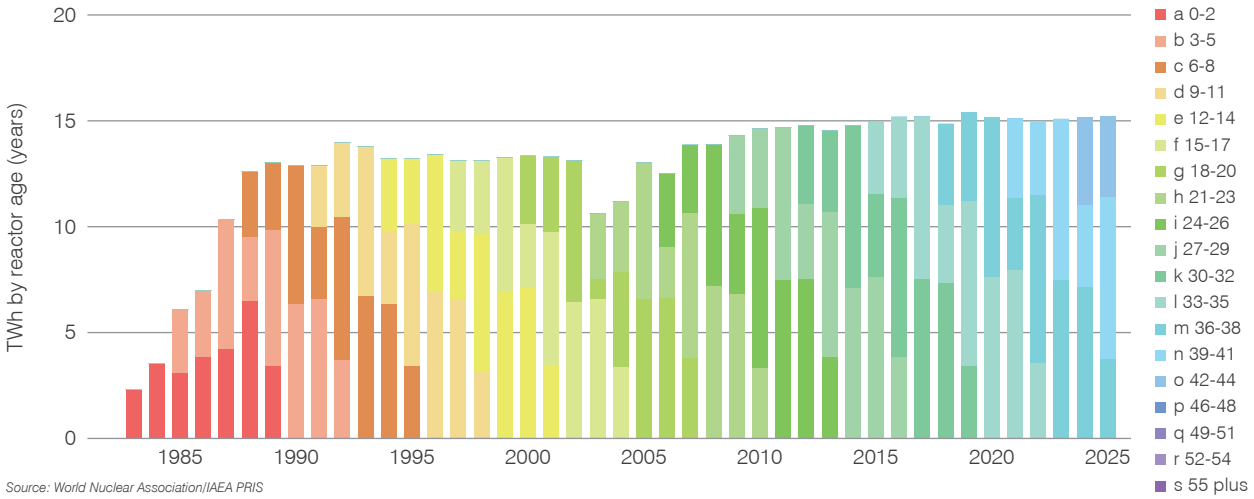
Lower river levels resulted in output from the plant being significantly curtailed for nearly four weeks in July and August 2026. The installation of a bottom sill/submerged weir and modifications to the pumping channels are planned to mitigate the impacts of any future lowering of river levels.

Construction started on unit 1 of Paks II in February 2026, the first of two VVER-1200 units planned.

Table Hu.1 Nuclear capacity status (as of 1 October 2026)

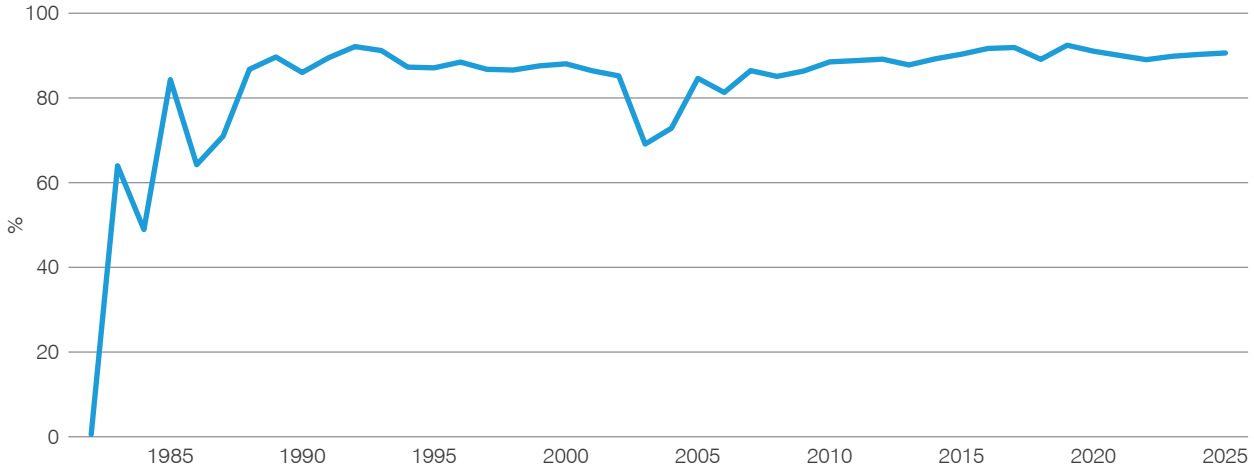
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
4	1916	2027	-	-	526

Figure Hu.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Hu.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

The previous Orbán-led administration established plans for 60-70% of electricity to be supplied by nuclear power from the 2030s. That government had also been in discussion with other governments regarding collaboration on SMRs.

A new government under PM Péter Magyar was formed in May 2026. The government announced it would review the financing and implementation of Paks II. Magyar considers nuclear energy essential but has openly called Paks II overpriced and ordered a comprehensive review of all contracts.

Table Hu.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
0	2027	1200	1200	-	-	-	-	4427

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Hu.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Hungary has progressed its main new build project, Paks II, into nuclear construction. The review announced by the new government creates uncertainty in the near term, but acknowledges nuclear's important role.

Country Category	Expander
Policy Framework Readiness	Moderate-High The 2026 review of the Paks II project cost announced by the new government has raised some uncertainty, but the government has said that nuclear power would continue to play an important role.
Institutional & Infrastructure Readiness	High Hungary has a strong institutional base for nuclear operation and for a new build project, with an experienced operator and regulator, as well as an established domestic nuclear workforce around Paks.
Programme & Project Development Readiness	Moderate-High Paks II-1 is under construction and Paks II-2 is in advanced site preparation. The outcome of the 2026 review will determine if this rating is maintained.
Target Achievability	Moderate Start of construction on Paks II is a step towards the goal to meeting 60-70% of Hungary's electricity needs from nuclear electricity. However, this will be dependent on the outcome of the 2026 review.

India

Current operations

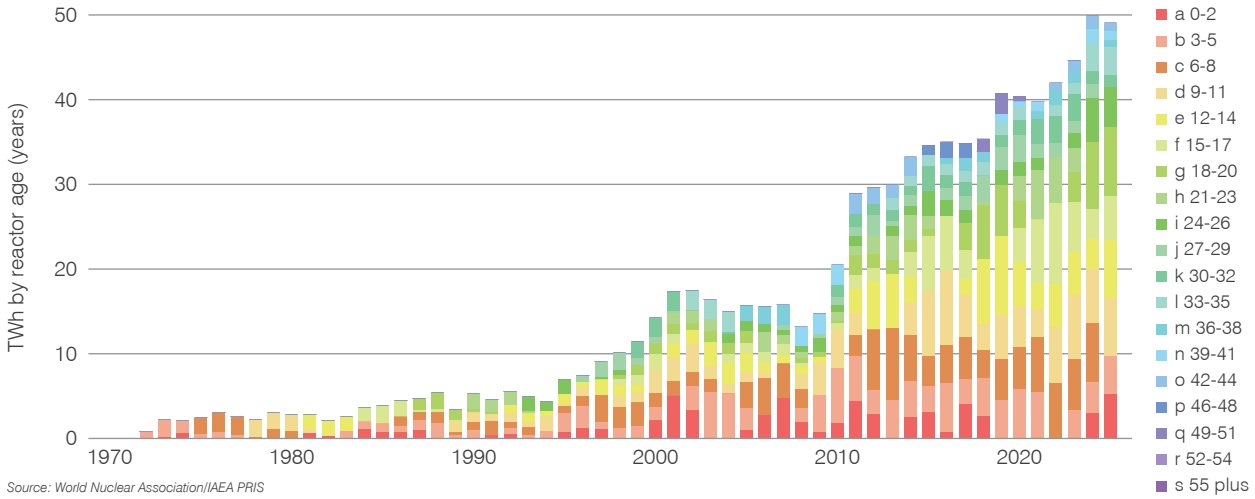
India has 24 operable reactors with a total capacity of 8780 MWe (gross). Eight reactors, with a capacity of 6600 MWe, are under construction, including a 500 MWe indigenous fast neutron reactor, which achieved first criticality in April 2026.

Rajasthan 7, a 630 MWe (net) pressurized heavy water reactor (PHWR), was the latest reactor to be connected to the grid, in March 2025. Construction started on the Kaiga 5&6 units of the same design in March 2026.

Table In.1 Nuclear capacity status (as of 1 October 2026)

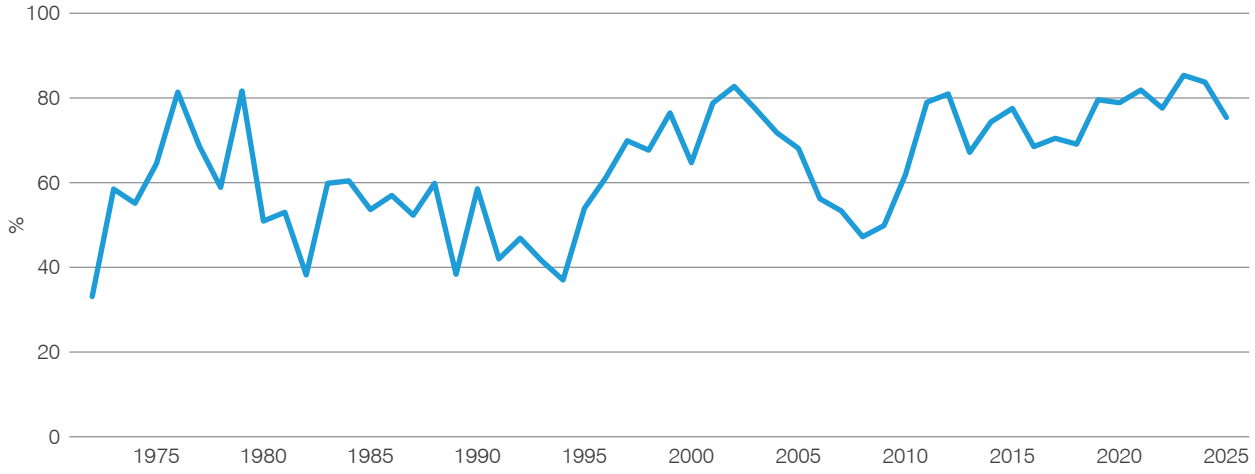
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
24	7935	8780	6	5200	820

Figure In.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure In.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

India has committed to reaching net-zero emissions by 2070. Contributing to this goal, in early 2025 the Nuclear Energy Mission for Viksit Bharat was announced, with the aim to reach 100 GWe of nuclear power capacity in the country by the centenary year of the country's independence (i.e. 2047). In advance of its 100 GWe target, India aims to nearly triple its nuclear capacity to around 22.5 GWe by 2032.

In December 2025 the Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India (SHANTI) Bill was granted presidential assent. The SHANTI Act restricts nuclear supplier liability to contracted terms, aligning the country with international norms to encourage private investment.

In February 2025 the state-run power company NTPC announced plans to construct 30 GWe of nuclear generation capacity, requiring a $62 billion investment, over the next two decades. Jindal Nuclear Power, a subsidiary of the private company Naveen Jindal Group, has plans to deploy up to 18 GWe of nuclear capacity.

In addition to reactors currently under construction and in preparation, the government has accorded ‘in-principle’ approval for an additional 32 GWe of capacity, in cooperation with vendors from France, USA and Russia, as well as further indigenous PHWRs.

In the July 2024 Budget speech, India’s Finance Minister announced government partnerships with the private sector to deploy Bharat Small Reactors (BSRs) and support research and development of Bharat Small Modular Reactors (BSMRs). Financial support of Rs20,000 crore (USD2.5 billion), was committed. Subsequent announcements identified BSRs as reactors based on indigenous 220 MWe PHWR technology. The first two lead units of a 55 MWe variant of the BSR would be built at a Department of Atomic Energy site by 2033. The country's Bhabha Atomic Research Centre is also developing a 5 MWt high temperature gas cooled reactor for hydrogen production.

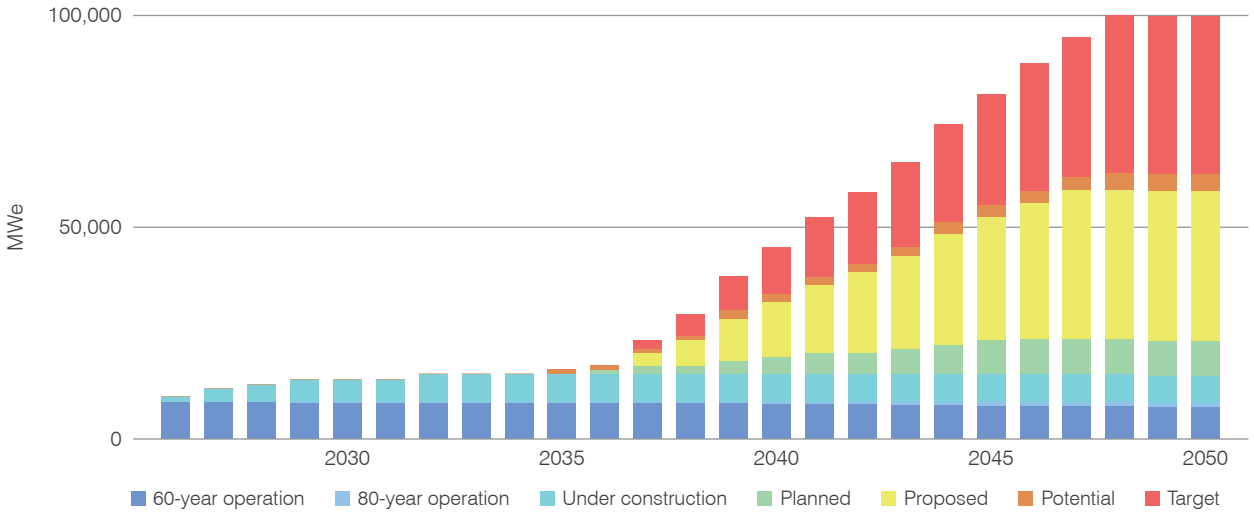
In July 2026, the Department of Atomic Energy told the Indian Parliament that the Nuclear Energy Mission roadmap to 100 GWe objective comprises about 54 GWe from state-owned Nuclear Power Corporation of India Limited (NPCIL) and 46 GWe from other public/private/JV developers.

Table In.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
7600	860	6600	8275	18,000	4000	100,000 by 2047	57,345	102,680

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure In.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

India has an established domestic reactor fleet, an experienced regulator and operator, an indigenous supply chain, and a clear long-term government commitment to substantial nuclear expansion. Unlike many countries pursuing ambitious nuclear targets, India is already delivering projects and has multiple reactors under construction.

It is advancing imported large reactors, fast reactors and SMRs, although progress in these areas has been slower than originally envisaged.

The principal challenge is whether deployment can accelerate sufficiently to meet national ambitions. Delivery rates will need to increase substantially to achieve the target of 100 GWe by 2047.

Country Category	Expander
Policy Framework Readiness	Moderate-High The 100 GWe target is backed by the Nuclear Energy Mission, an explicit government roadmap, major legislative reform and financial support for SMRs. Nuclear expansion is a strategic national energy objective.
Institutional & Infrastructure Readiness	Moderate-High India has more than five decades of reactor operation, an experienced regulator, owner/operator, research organizations, fuel cycle institutions and a large domestic supply chain. The SHANTI Act further strengthens the regulator's statutory position and enables private participation in the nuclear power sector.
Programme & Project Development Readiness	Moderate-High India has a large active construction and planned pipeline, serial 700 MWe PHWR deployment and new FBR/SMR projects. However, much of the capacity required after the early 2030s is not yet represented by mature projects.
Target Achievability	Low Achieving 22 GWe by around 2032 is challenging. Reaching 100 GWe by 2047 requires an unprecedented increase in annual deployment and depends on private investment and large new project programmes that are still being established.

Indonesia

Nuclear policy and outlook

Under President Prabowo Subianto, nuclear has been elevated to a formal pillar of national energy policy and is explicitly written into the Electricity Supply Business Plan (RUPTL 2025-2034) of PLN - Indonesia's state-owned electricity utility. In September 2025 Prabowo signed the revised National Energy Policy (KEN), setting Indonesia's energy transition pathway to net-zero emissions by 2060. The policy designated nuclear energy as part of the new national energy mix, with targets for nuclear to contribute 0.4-0.5% by 2032, 2.8-3.4% by 2040, 6.8-7.0% by 2050 and 11.7-12.1% by 2060 .

The Indonesian National Energy Council targets 8 GWe of installed capacity to come from nuclear power plants in 2035, increasing to 45-54 GWe in 2060, with an intermediary target of 21 GWe in 2050.

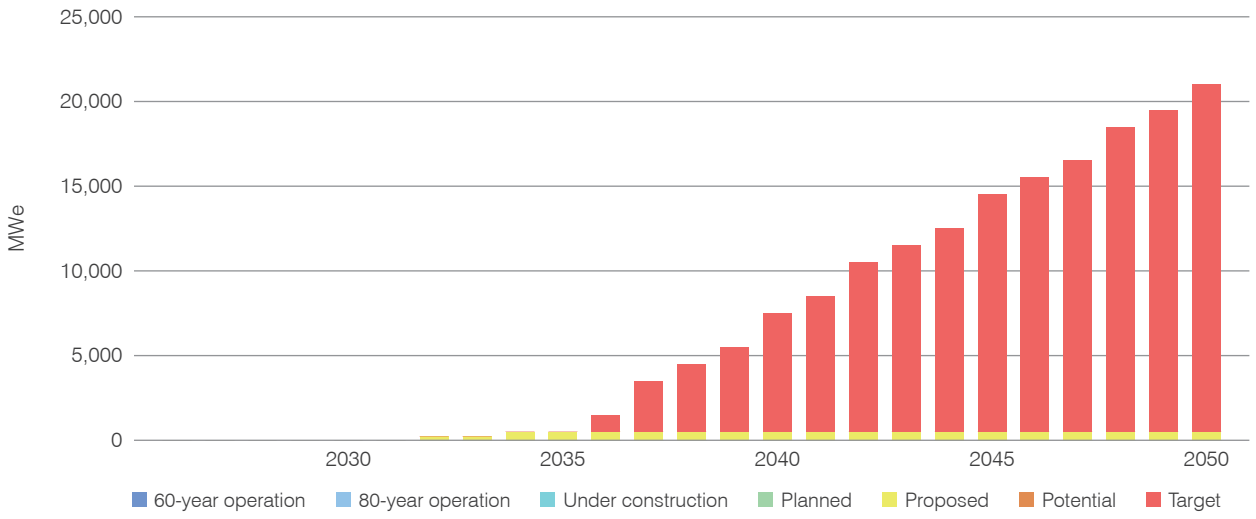
The Electricity Supply Business plan includes proposals for 500 MWe (2×250 MWe) from 2032 in Sumatra/Bangka Belitung and West Kalimantan. PT ThorCon Power Indonesia has initiated the licensing process for the construction of a power plant based on its advanced molten salt reactor technology. A site at Kelasa island, located in Central Bangka, is being investigated to host the plant.

Table Id.1 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	-	-	-	500	-	21,000	20,500	21,000

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Id.1 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Indonesia combines a stronger institutional and technical base than most newcomer nuclear countries, but has made little progress towards its 2032 target for 500 MWe capacity and longer-term goals.

Country Category	Candidate
Policy Framework Readiness	Moderate Nuclear is now embedded in national policy. 500 MWe is scheduled for 2032 and a much larger 2060 programme is envisaged.
Institutional & Infrastructure Readiness	Moderate Indonesia has an experienced independent nuclear regulator, research reactors, nuclear fuel and waste facilities; however, its commercial power capabilities remain incomplete.
Programme & Project Development Readiness	Moderate PLN has begun site preparation work and ThorCon has regulatory approval to undertake site evaluation, but there is still no selected technology or site approval for the RUPTL projects.
Target Achievability	Low Initial nuclear deployment is planned, but the 2032 target is highly unlikely to be met and a 45 GWe-plus fleet by 2060 would require a rapid transition to serial deployment.

Iran

Current operations

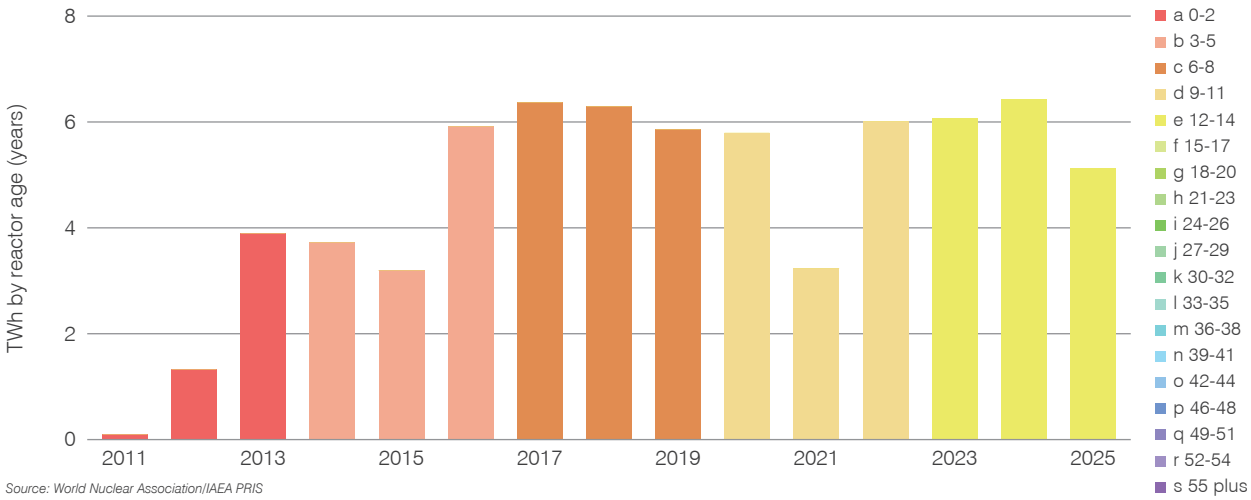
Iran has one Russian VVER-1000 unit in operation at the Bushehr plant. Russia's Rosatom is building a second VVER-1000 at Bushehr and excavation works on a third unit commenced in January 2021.

In September 2024 the Atomic Energy Organization of Iran (AEOI) said that Bushehr 2 would start up in 2029. First concrete for unit 3 was planned to be poured before the end of 2024, although this has not been confirmed to have taken place. Construction at the site was disrupted by the 2026 conflict in the Middle East, although it has been reported that construction work on units 2&3 has recommenced.

Table Ir.1 Nuclear capacity status (as of 1 October 2026)

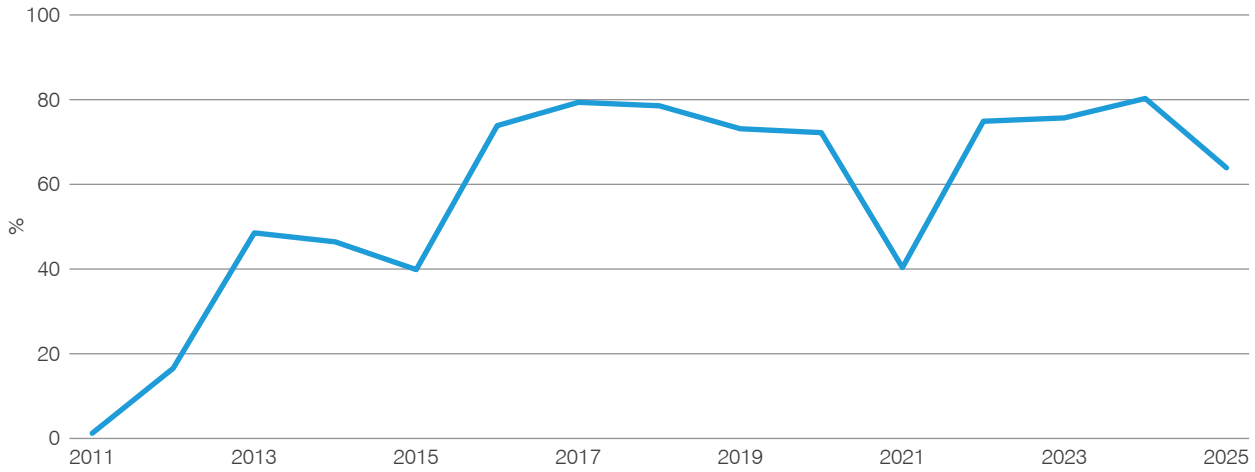
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
1	915	1000	1	1057	65.5

Figure Ir.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Ir.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

Iran has set a target of 20 GWe of nuclear capacity by 2041.

The Atomic Energy Organization of Iran (AEOI) announced a plan in 2007 to build a 360 MWe light water reactor designed by Iran at Darkhovin. The IR-360 design was completed in 2012 and groundworks commenced in 2022. The AEOI estimated that the project would be finished by 2030. In July 2026 the IAEA reported it was investigating reports that the site had been attacked as part of the ongoing conflict, while noting that construction was at a very early stage. Its capacity not included in this assessment.

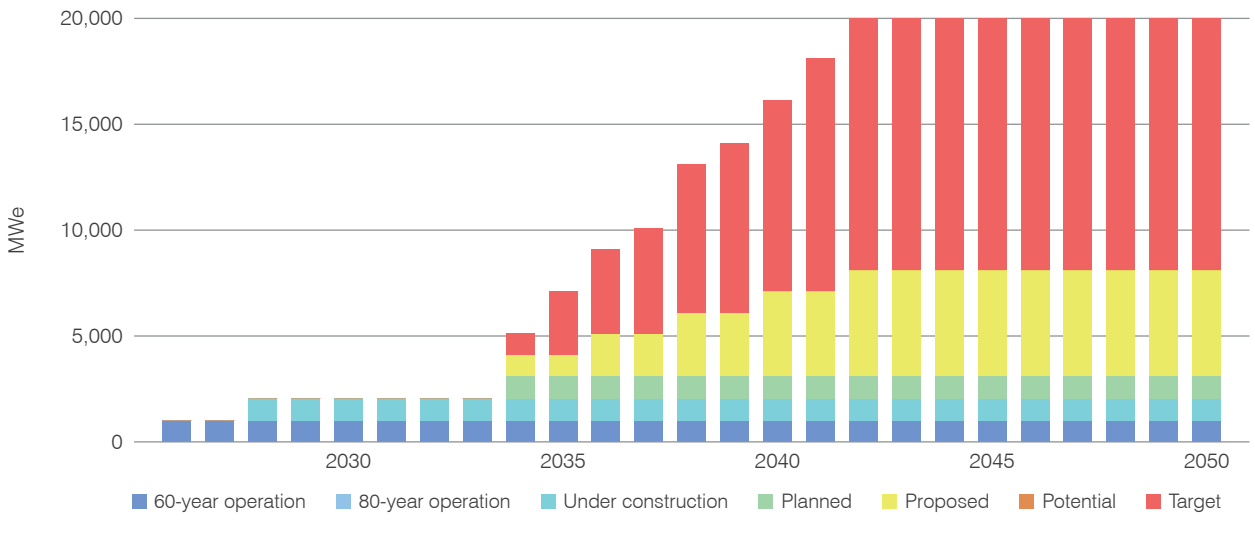
In addition to the new build projects at Bushehr and Darkhovin, work at a new site near the cities of Minab and Sirik in the southern coastal province of Hormozgan commenced in February 2024, according to the AEOI. In September 2025, the Iran Hormoz Company and Rosatom signed a $25 billion executive agreement to build four third-generation nuclear power units at the Iran-Hormoz plant. Each of the four units would have a capacity of 1255 MWe.

Table Ir.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
1000	-	1057	1057	5020	-	20,000	11,866	20,000

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Ir.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Iran has institutional and technical foundations and at least one substantive reactor construction project. However, the scale and timing of the 20 GWe target are not supported by the present project pipeline. Most of the additional capacity needed to meet the target remains insufficiently defined.

Country Category	Expander
Policy Framework Readiness	Moderate Sustained state commitment and a 20 GWe ambition, but limited evidence of a funded, sequenced delivery plan for that scale.
Institutional & Infrastructure Readiness	Moderate Iran has operating, regulatory, engineering and nuclear fuel cycle institutions, but international safety convention coverage, safeguards cooperation, access to international expertise and regulatory transparency remain important weaknesses.
Programme & Project Development Readiness	Low-Moderate Bushehr 2 is under construction; Bushehr 3 is in preparation and Darkhovin is at an early stage of development. However, most of the 20 GWe objective has not reached mature project status and current projects face significant geopolitical and financing risks.
Target Achievability	Low Reaching 20 GWe by 2041-42 would require approximately 19 GWe of additions in around 15 years, while only about 1.1 GWe is formally under construction. A substantial expansion is credible, but delivery of the full target by the stated date is unlikely.

Italy

Nuclear policy and outlook

Italy operated a total of four nuclear power plants starting in the early 1960s but decided to phase out nuclear power in a referendum that followed the 1986 Chernobyl accident. It closed its last two operating plants, Caorso and Trino Vercellese, in 1990.

Italy's National Integrated Energy and Climate Plan submitted to the EU in mid-2024 outlines nuclear power capacity targets for 2050. Referring to the plan, the country's Minister for Environment and Energy Security said: "We expect to be able to reach about 8,000 MWe from nuclear power by 2050, covering more than 10% of the nation's electricity demand. This percentage may increase to over 20-22% (16,000 MWe) by fully exploiting the potential of nuclear power in our country."

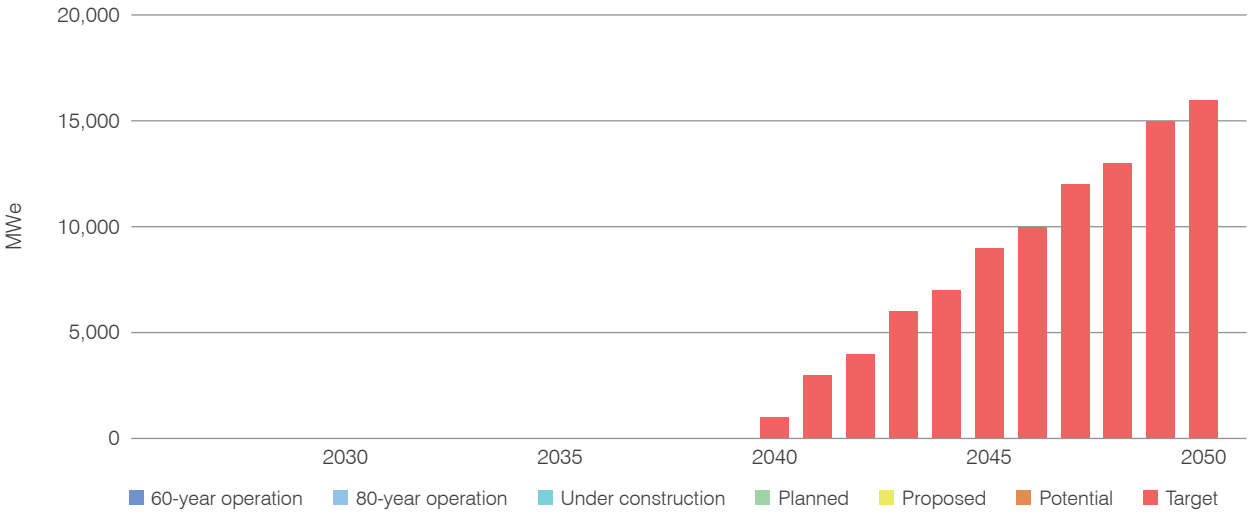
In September 2026, a new nuclear law was passed that lays out the principles for a regulatory framework. It empowers the government to issue decrees on the construction and operation of nuclear installations, including small modular reactors, as well as setting out rules for used nuclear fuel management and nuclear safety protocols.

Table It.1 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	-	-	-	-	-	16,000	16,000	16,000

* Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure It.1 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

The passing of the 2026 nuclear law is a significant step forward. To meet the government's capacity target will require considerable progress on institutional and infrastructure readiness, and transitioning to a programme of new build projects.

Country Category	Candidate Although Italy used nuclear energy up to 1990, due to the length of time that has passed it is categorized as a Candidate country.
Policy Framework Readiness	Low-Moderate The government has passed initial legislation, but a more detailed framework will be required.
Institutional & Infrastructure Readiness	Low Italy retains significant nuclear engineering, research, decommissioning and regulatory expertise. The new law sets out the principles for a regulatory framework.
Programme & Project Development Readiness	Low-Moderate Government-supported technology programmes now constitute meaningful pre-project activity, but there is still no identified site, or selected reactor.
Target Achievability	Low-Moderate An 8000-16,000 MWe by 2050 scenario is achievable given Italy's industrial capability, but will require accelerated progress beyond the initial steps taken.

Japan

Current operations

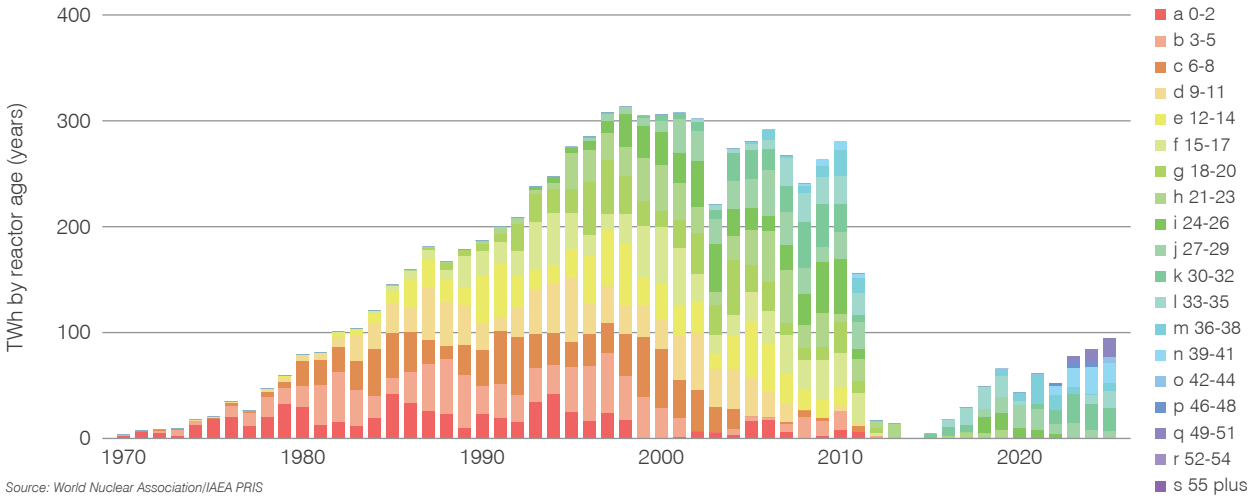
Japan had more than 50 operable nuclear reactors at the time of the March 2011 accident at Fukushima, all of which were taken offline, either when the accident occurred or in the months after as they reached maintenance outages. Since then, reactors have been required to undergo restart assessments. Up to July 2026, 15 units have restarted, with 18 operable units still requiring permission to restart, of which 10 units have applied to restart.

Unit 6 of the Kashiwazaki-Kariwa plant restarted commercial operation in April 2026, becoming the first reactor owned by Tokyo Electric Power Company to do so.

Table Jp.1 Nuclear capacity status (as of 1 October 2026)

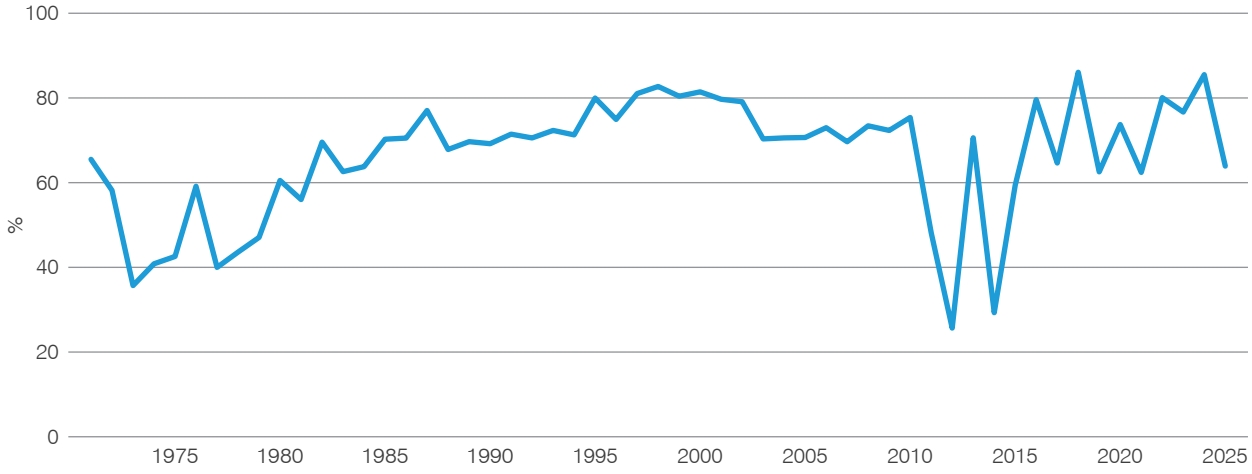
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
33	31,679	33,083	2	2756	7479

Figure Jp.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Jp.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

Japan's GX Decarbonization Power Supply Act, passed in May 2023 and in force since June 2025, marks a major shift in the country's energy policy, repositioning nuclear power as a key source of stable, zero-emissions electricity. The Act retains the 40-year operating lifetime limit with a possible 20-year extension, excluding periods when reactors were offline – effectively allowing for operation beyond 60 years.

The 7th Strategic Energy Plan, approved by the Cabinet in February 2025, maintains a nuclear share of around 20% of electricity generation in FY2040, with renewables at 40-50%. It removed the commitment to "reduce dependence on nuclear power as much as possible," which had appeared in every plan since 2014. It also broadened replacement to allow new reactors at other sites owned by the same utility, not only at the site of the retiring unit.

In mid-2026 the Ministry of Economy, Trade and Industry (METI) said it estimated that two-to-five large reactors (about 2.2-5.5 GWe) will need to be replaced by the 2040s to maintain the 20% share, rising to a cumulative 11-14 reactors (about 12.7-16 GWe) by the 2050s. It is the first numerical replacement target set since the Fukushima Daiichi accident.

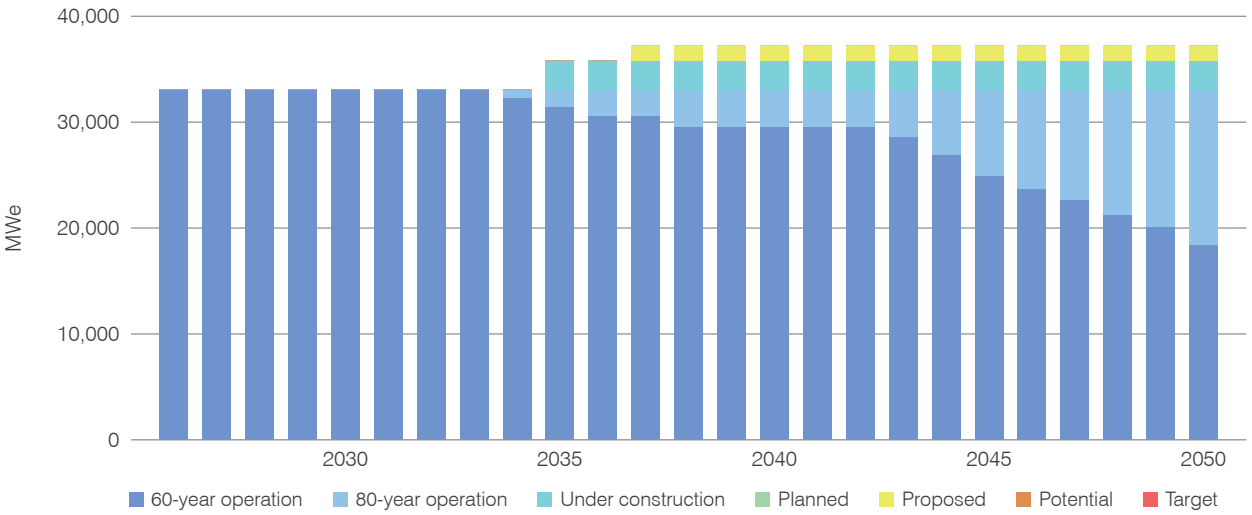
Three reactors were under construction at the time of the accident. Construction of Shimane 3 and Ohma was suspended in 2011 and resumed in 2012, and both units are now undergoing safety reviews. Construction of Tepco's Higashidori 1, which began in January 2011, remains suspended.

Table Jp.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
18,447	14,646	2756	-	1385	-	37,224	0	37,224

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Jp.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Japan's strongest attributes are its industrial base, operating experience and regulatory system and its increasingly supportive national policy. Its weaker areas are the absence of a sufficiently firm post-2030 construction programme, although the recent METI draft target for reactor replacement has helped progress this issue.

Country Category	Restarter
Policy Framework Readiness	Moderate-High Japan has a clear and increasingly supportive national policy for maintaining nuclear generation as part of its future energy mix. This is to be achieved by restarting suitable reactors, enabling long-term operation and developing next-generation reactors.
Institutional & Infrastructure Readiness	Moderate-High Japan has an experienced regulator, established nuclear legislation, capable utilities, major domestic reactor vendors, a substantial supply chain and extensive operational and research expertise. To achieve its goals it will need to address the long interruption in domestic new construction and the time required for regulatory reviews.
Programme & Project Development Readiness	Moderate Fifteen reactors have restarted and several units are progressing through long-term operation arrangements. However, many reactors remain suspended: Ohma has no firm operation date, Shimane 3 remains incomplete, and plans for replacement reactors and SMRs are nascent.
Target Achievability	Moderate Achieving around 20% nuclear generation in 2040 is plausible but not assured. It depends on further restarts, high operating performance, extensive operating lifetime extensions and the timely commissioning of additional capacity. Delays to restarts, reactor retirements and the absence of firm replacement projects will need to be addressed to reduce the delivery risk.

Kazakhstan

Nuclear policy and outlook

Kazakhstan is the world's leading producer of uranium. Although it does not currently use nuclear energy, a Russian-designed BN-350 sodium-cooled fast reactor operated near Aktau for 26 years, until 1999.

In January 2024, the government revealed an action plan aiming for nuclear energy to comprise 5% of the national generation mix by 2035.

Russia and Kazakhstan signed intergovernmental agreements in May 2026 that envisage two VVER-1200 reactors, with construction starting in 2027 in the Zhambyl district, and the first unit operating in 2034. In September 2026, Kazakhstan Nuclear Power Plants (KNPP) and Rosatom subsidiary Atomstroyexport signed the design, supply and construction contract. Kazakh government approval is still required.

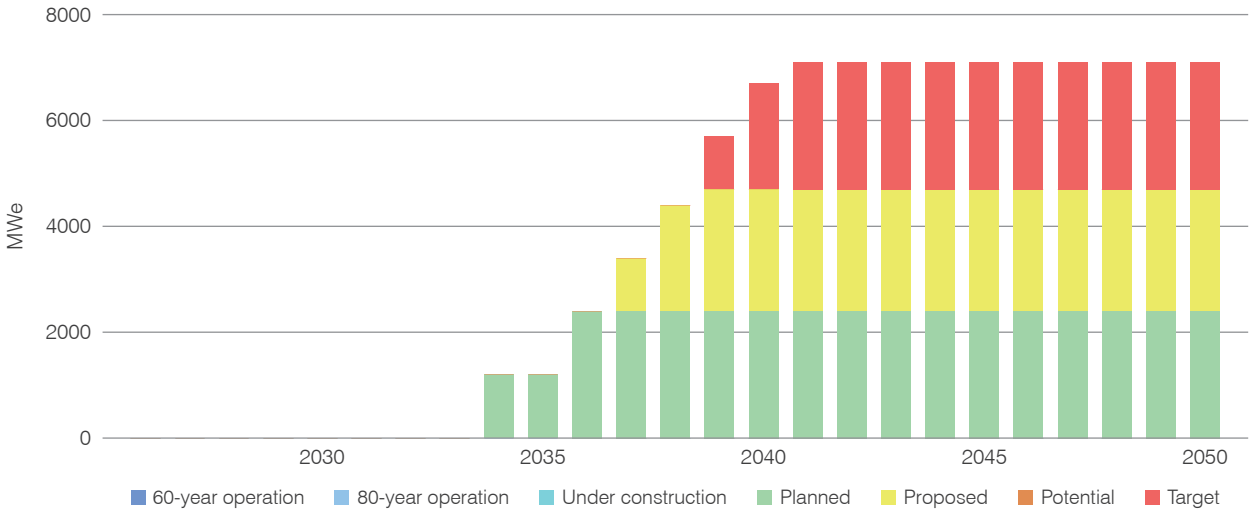
A second plant is planned to be built by China's CNNC next to the first, according to a January 2026 Kazakh government decision. The government is also planning a third plant, as well as looking into deploying SMRs.

Table Kz.1 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	-	-	2400	2300	-	2400	2400	7100

* Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Kz.1 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Kazakhstan's plans have moved quickly in 2026. The first plant has progressed from vendor selection to a signed construction contract, the second plant now has a site, and a long-term strategy commits to at least three plants.

Country Category	Newcomer
Policy Framework Readiness	High Referendum approval, a 2050 nuclear strategy requiring at least three nuclear plants, selected vendors for the first and second projects and first project financing arrangements establish a strong programme framework.
Institutional & Infrastructure Readiness	Moderate-High Kazakhstan has extensive uranium mining, research and historic reactor capabilities, plus established regulation and nuclear institutions. However, Kazakhstan's regulatory/workforce system for a large nuclear programme remains under development.
Programme & Project Development Readiness	Moderate-High The first plant has an identified site region, technology and vendor, financing agreement and active engineering investigations; the second plant is in early development. EPC, construction licensing and FID-equivalent commitment remain ahead.
Target Achievability	Moderate One 2.4 GWe plant by the mid-to-late 2030s is increasingly credible. At least three plants by 2050 is feasible but requires two further projects to move rapidly from policy into procurement, financing and construction.

Kenya

Nuclear policy and outlook

In March 2026, President William Ruto announced a proposed 2000 MWe plant in Siaya County, with groundbreaking intended to start in 2027 and commissioning targeted for 2034. He also set an overall goal of 3000 MWe of nuclear capacity as part of plans to significantly increase power generation in Kenya over the next seven years. Previous plans were for 1000 MWe of nuclear capacity by 2035.

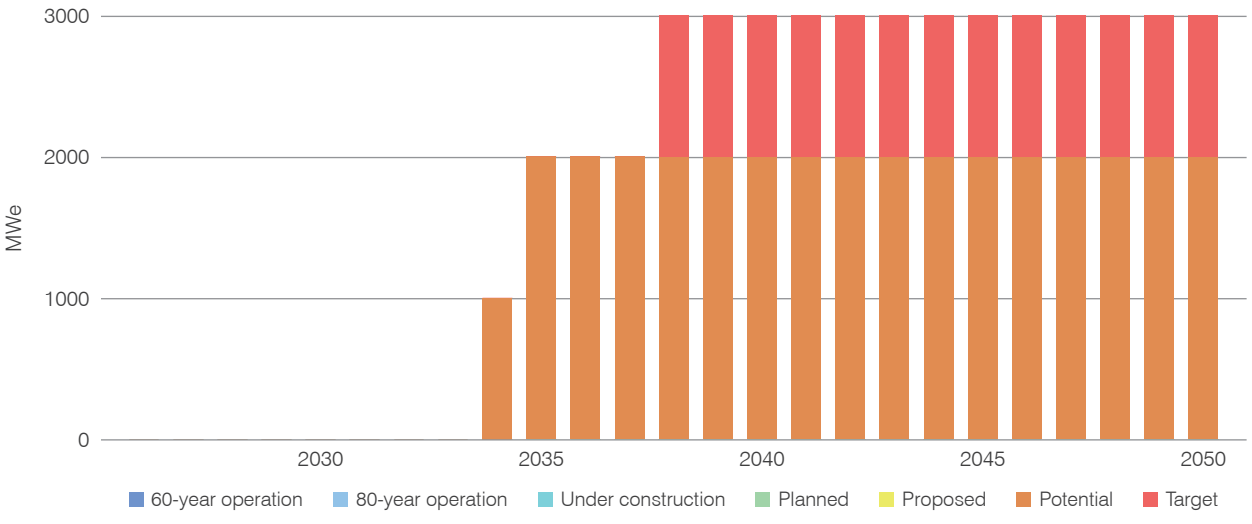
Kenya is planning to build its first research reactor at the Konza Technopolis technology hub, with construction planned to begin in 2027.

Table Ke.1 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	-	-	-	-	2000	3000	1000	3000

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Ke.1 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Kenya's plans grew in size during 2026, but the delivery timescale for these plans is not realistic.

Country Category	Candidate
Policy Framework Readiness	Low-Moderate Kenya has strong presidential commitment, a national nuclear objective and a designated prospective owner-operator. Technology, financing, final siting and elements of the legal framework remain incomplete.
Institutional & Infrastructure Readiness	Low Kenya's Nuclear Power & Energy Agency (NuPEA), Kenya Nuclear Regulatory Authority (KNRA) and majority (70%) state-owned utility KenGen provide the principal institutional structure, but Kenya has no practical nuclear energy experience, including a research reactor. Its first research reactor is planned to start construction in 2027.
Programme & Project Development Readiness	Low A 2000 MWe capacity concept at Siaya makes the project materially more identifiable than previously, but there is still no selected reactor or vendor.
Target Achievability	Low Deployment of nuclear in Kenya remains credible over the longer term, but 2000 MWe by 2034 and 3000 MWe on the government's current near-term expansion timetable are extremely challenging.

Mexico

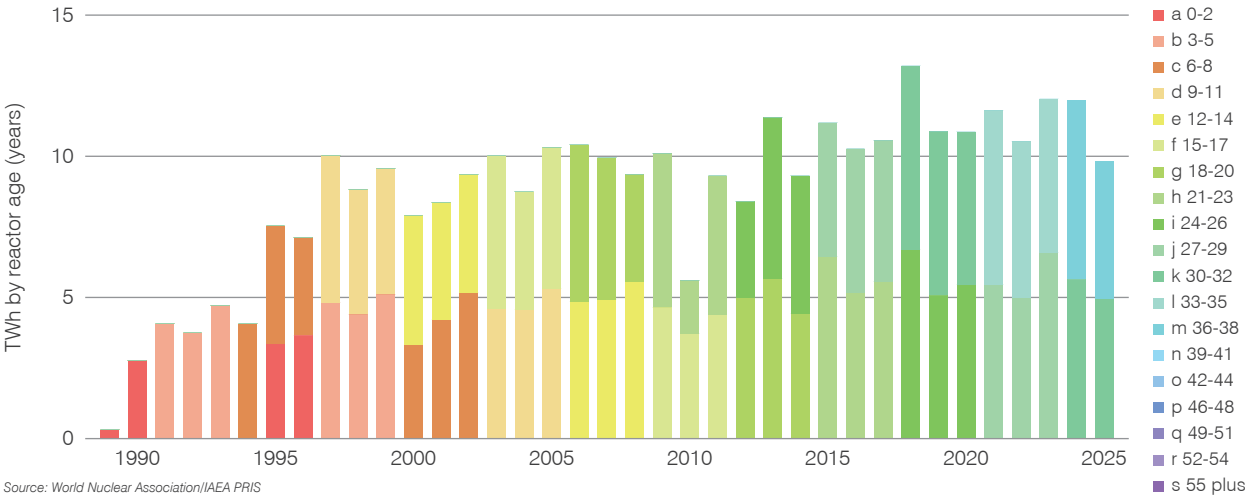
Current operations

Mexico has two operating reactors at the Laguna Verde plant, with a total net capacity of 1552 MWe. The two BWRs started up in 1989 and 1994 and are licensed to operate to July 2050 (unit 1) and April 2055 (unit 2).

Table Me.1 Nuclear capacity status (as of 1 October 2026)

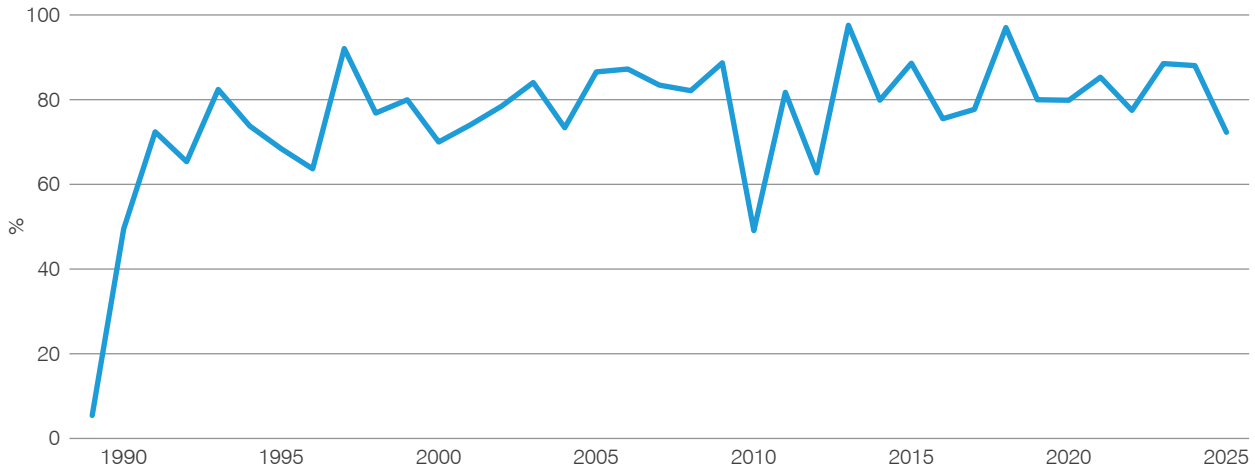
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
2	1552	1608	-	-	306

Figure Me.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Me.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

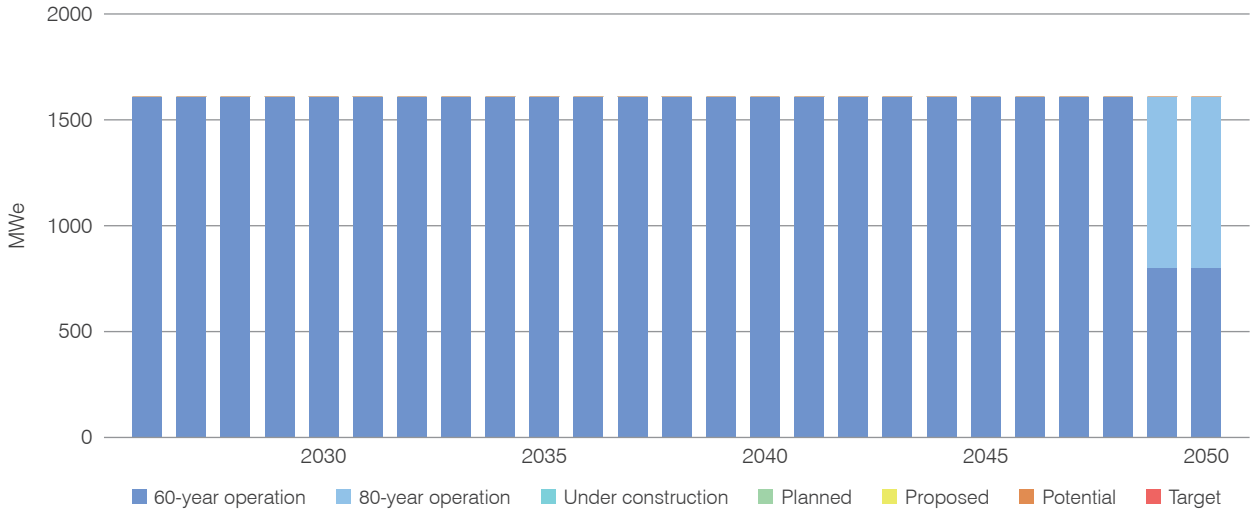
An August 2022 Secretariat of Energy report implied that, to reach the government's clean energy targets, annual electricity production from nuclear energy would need to double by 2035. However, in October 2024, President Claudia Sheinbaum said that her government was not contemplating another nuclear reactor. Government publications have continued to emphasize nuclear energy's contribution to a clean energy mix for decarbonization, as well as its role in strengthening energy security.

Table Me.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
803	805	-	-	-	-	-	0	1608

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Me.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Mexico is well placed to maintain its existing nuclear generation and has sufficient institutional foundations to develop additional capacity if the government chooses to do so. However, there are currently no such government plans.

Country Category	Maintainer Mexico has no plans to deploy new nuclear capacity, but recognizes the contribution of its operating reactors to decarbonization and strengthening energy security.
Policy Framework Readiness	Low-Moderate Nuclear remains legally and strategically recognized, and long-term operation of the Laguna Verde plant is supported. However, the current national electricity expansion plan contains no new nuclear capacity.
Institutional & Infrastructure Readiness	Low-Moderate The Federal Electricity Commission (CFE), National Commission for Nuclear Safety and Safeguards (CNSNS) and National Institute for Nuclear Research (ININ) provide substantial operating, regulatory and technical experience. Constraints include the small scale of the domestic programme, dependence on international suppliers and retention of specialist personnel.
Programme & Project Development Readiness	Very Low Although there is an established nuclear power programme, there are currently no plans for a new reactor project.
Target Achievability	N/A Mexico has no target for additional capacity but is well placed to continue operation of its existing plant.

Myanmar

Nuclear policy and outlook

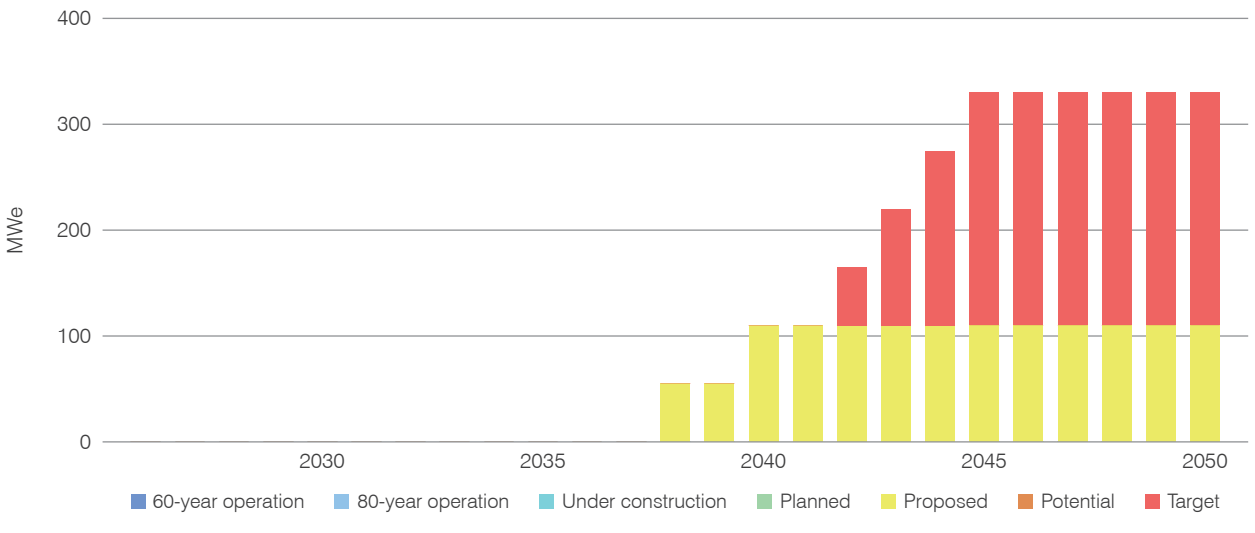
In March 2025 an intergovernmental agreement between Myanmar and Russia set out terms for a 110 MWe onshore SMR plant, with potential expansion to 330 MWe. The plant would consist of between two and six 55 MWe RITM-200N units. A separate memorandum covered regulatory cooperation on nuclear and radiation safety frameworks, licensing and monitoring. In August 2026, Rosatom said it expected to sign a contract for engineering surveys by the end of this year, with site work starting in 2027.

Table My.1 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	-	-	-	110	220	-	-	330

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure My.1 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Myanmar has a named project and vendor, but it lacks a site, financing and a licensing regime.

Country Category	Candidate
Policy Framework Readiness	Low-Moderate A defined 110 MWe proposal and bilateral agreement show political commitment. A comprehensive national nuclear power policy and updated law are still being developed.
Institutional & Infrastructure Readiness	Low-Moderate Myanmar has a Department of Atomic Energy and is engaging in cooperation with the IAEA, but the institutions, law, regulatory capacity and electricity infrastructure needed for a first power plant remain at an early stage.
Programme & Project Development Readiness	Low-Moderate The SMR project has a specified size and prospective design, but site surveys and the principal project approvals remain ahead.
Target Achievability	Low-Moderate The projected capacity of up to 330 MWe depends on a single project that is vulnerable to the current civil conflict, unresolved financing and seismic siting constraints.

Nigeria

Nuclear policy and outlook

Nigeria has long planned to introduce nuclear power, with a stated ambition of around 4000 MWe of capacity. The Nigeria Atomic Energy Commission (NAEC) has identified two sites for large reactors, Geregu in Kogi state and Itu in Akwa Ibom state.

In May 2025, the then Minister of Power advised against the proposed construction of four large units and advocated for small modular reactors (SMRs) instead. NAEC officials have since described the programme as technology-neutral, with both large reactors and SMRs under consideration.

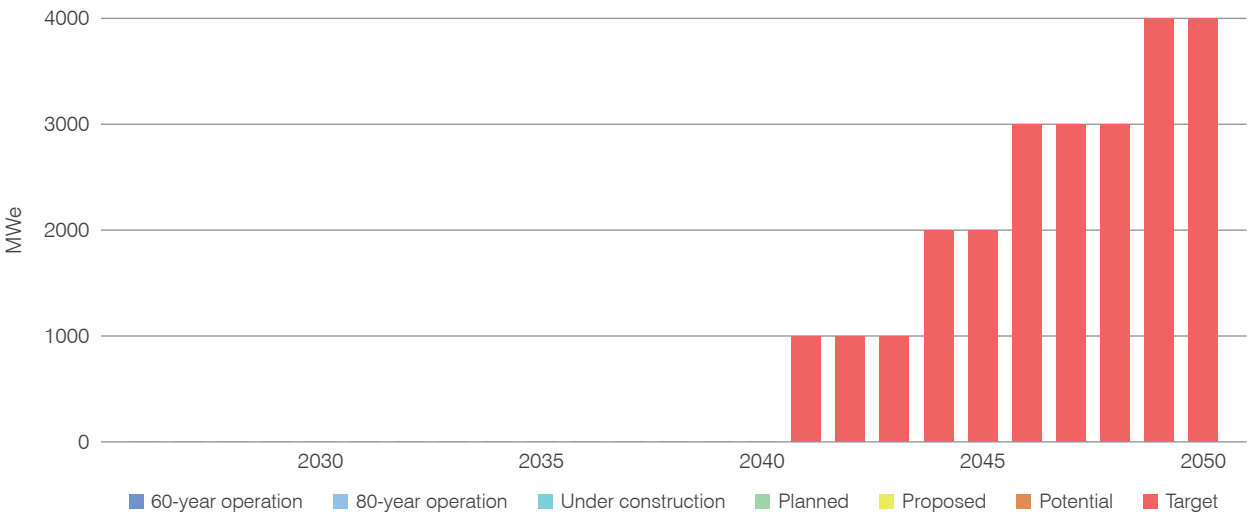
The country's regulatory framework has been strengthened, with new nuclear safety regulations developed with the IAEA, including regulations on nuclear power plant construction. Nigeria has no vendor selected and no financing arrangement in place for a first nuclear power plant.

Table Ni.1 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	-	-	-	-	-	4000	4000	4000

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Ni.1 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Nigeria has a national nuclear ambition and institutions on which to build. However, delivery of the 4000 MWe target will require more rapid progress than has been achieved to date.

Country Category	Candidate
Policy Framework Readiness	Low A 4000 MWe ambition establishes policy intent. More clarity is needed on the choice between large reactors and SMRs, current delivery timetable, and supporting legislation.
Institutional & Infrastructure Readiness	Low-Moderate Established regulator, research reactor, nuclear research centres, regulations and international cooperation provide a useful base, but commercial power reactor regulation and project management remain untested.
Programme & Project Development Readiness	Low Geregu and Itu are candidate sites, with feasibility and site evaluation work continuing. There is no defined, financed first power reactor project.
Target Achievability	Low A nuclear programme remains possible over the longer term, but the published 4000 MWe objective does not have a current schedule or project sequence and none of the capacity is yet attributable to specific reactors.

Pakistan

Current operations

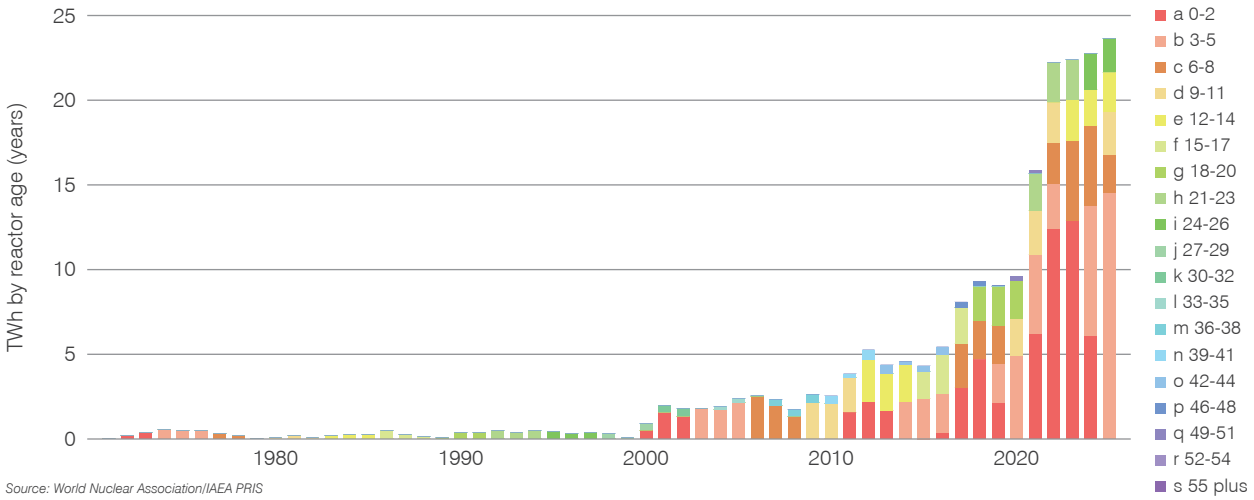
Pakistan has six Chinese-supplied operating reactors at the Chashma and Karachi plants with a total net capacity of 3262 MWe.

In June 2023, Pakistan agreed a $4.8 billion deal with China to provide an HPR1000 reactor as unit 5 of the Chashma plant. Construction began at the end of 2024.

Table Pa.1 Nuclear capacity status (as of 1 October 2026)

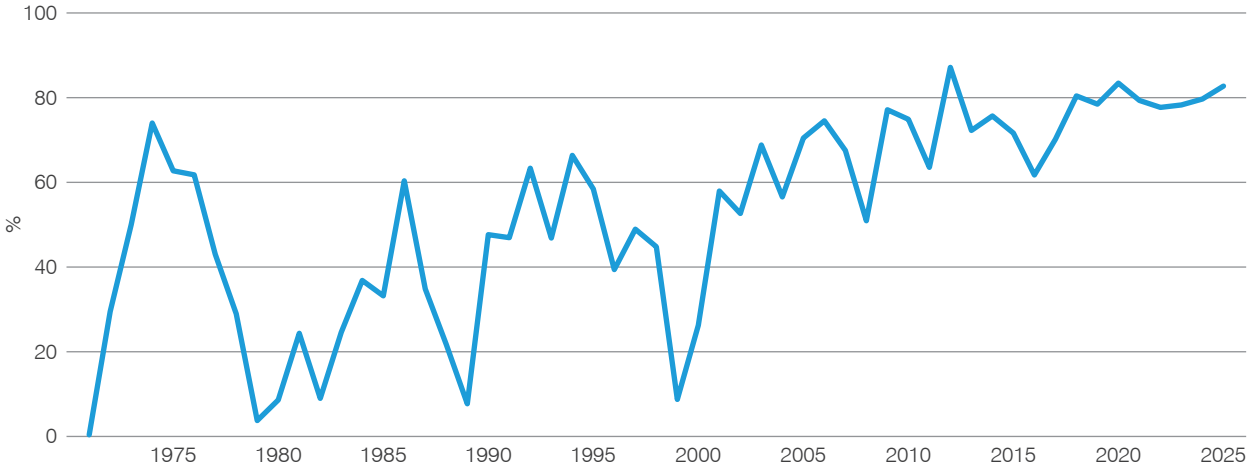
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
6	3262	3530	1	1200	191

Figure Pa.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Pa.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

Expansion of nuclear power capacity has long been a central element of Pakistan's energy policy. Pakistan's Nuclear Energy Vision 2050 announced in late 2013 sets a target of 40,000 MWe of nuclear capacity by 2050. The government restated it in February 2022, when the Prime Minister's climate change adviser, Malik Amin Aslam, said Pakistan planned 40,000 MW of nuclear energy by 2050 alongside wind, hydro and solar to meet its COP26 goals.

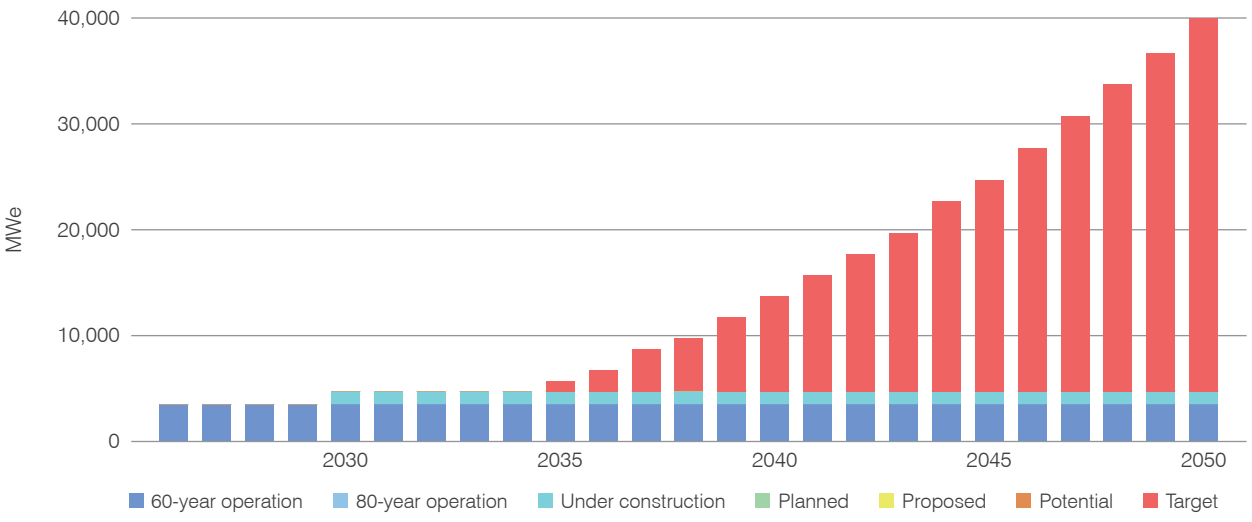
The revised Indicative Generation Capacity Expansion Plan (IGCEP) 2025-35, prepared by the Independent System and Market Operator, raises nuclear capacity from 3530 MWe to 4730 MWe by 2034-35 in every scenario that allows new capacity.

Table Pa.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
3530	-	1200	-	-	-	40,000	35,270	40,000

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Pa.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Pakistan has an established nuclear power programme and a credible route to complete its next reactor. The challenge is the scale of its ambition to reach 40,000 MWe by 2050, with no additional reactor identified in the near-term national expansion plan.

Country Category	Expander
Policy Framework Readiness	Moderate-High Nuclear expansion has sustained government backing and appears in power system planning, but the 40,000 MWe vision requires a sequence of funded projects commensurate with it.
Institutional & Infrastructure Readiness	Moderate-High The Pakistan Atomic Energy Commission (PAEC) and the Pakistan Nuclear Regulatory Authority have extensive operating, construction and regulatory experience; Pakistan also has nuclear education, research and waste management institutions.
Programme & Project Development Readiness	Moderate Chashma 5 has crossed major approval and construction milestones. A subsequent fleet of projects has yet to reach a sufficiently defined development stage.
Target Achievability	Low Reaching 40,000 MWe by 2050 would require roughly another 35,000 MWe beyond today's fleet and Chashma 5, requiring a much larger project pipeline than currently exists.

Philippines

Nuclear policy and outlook

The Philippines began construction of a 621 MWe Westinghouse unit at the Bataan nuclear plant in 1976. It was completed in 1984 but fuel was never loaded. The Philippine government has been working with KHNP to assess the feasibility of reviving the Bataan project.

The Philippines is also looking at options for building new nuclear power plants, including both large reactors and small modular reactors.

In its Clean Energy scenario, the Philippine Energy Plan 2023-2050 targeted at least 1200 MWe nuclear capacity in 2032, an additional 1200 MWe by 2035 and an additional 2400 MWe by 2050.

In September 2025, President Marcos signed the Philippine National Nuclear Energy Safety Act. It created PhilATOM as an independent regulator, separating regulation from the Philippine Nuclear Research Institute's promotional role.

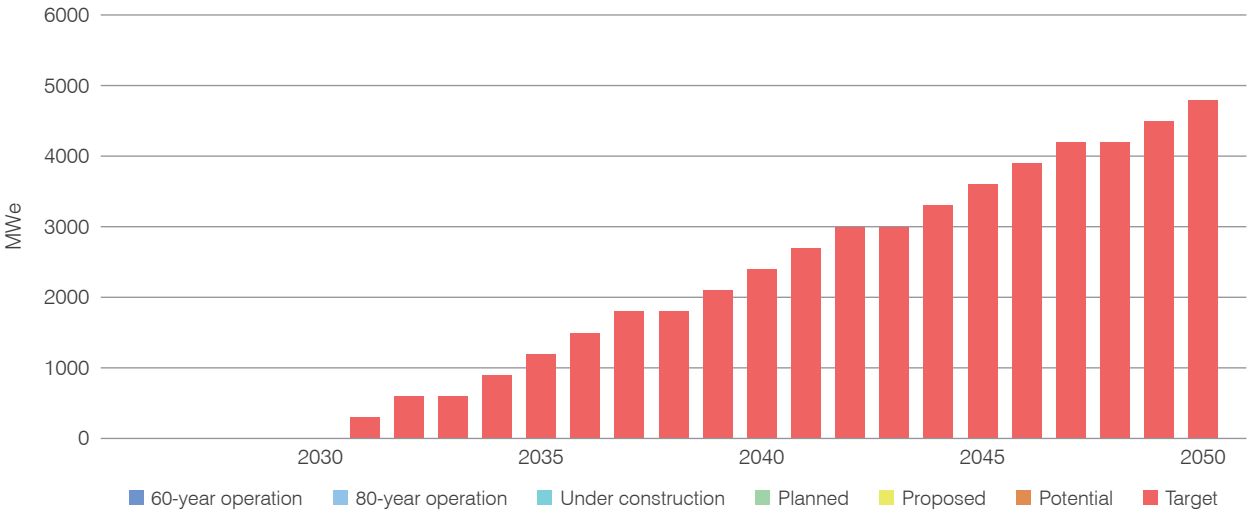
In October 2025 the Department of Energy designated the first commercial plant, with baseload treatment and priority dispatch. As of September 2026, the Department of Energy was still consulting on revised nuclear capacity tender guidelines.

Table Ph.1 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Ph.1 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

The Philippines has made substantial progress on its policy and regulatory framework, but has yet to commit to a first project or finalize its delivery and financing arrangements.

Country Category	Candidate
Policy Framework Readiness	Low-Moderate The government is committed to nuclear development but implementation and financing arrangements still need to be developed.
Institutional & Infrastructure Readiness	Low-Moderate The new nuclear regulator (PhilATOM) and wider institutional system need to demonstrate operational capability for a first nuclear plant licensing programme.
Programme & Project Development Readiness	Moderate Several nuclear project initiatives are active, but there is no committed project with a defined site or technology in place.
Target Achievability	Low The 2032 target for 1200 MWe of capacity is not likely to be met. The longer-term objectives are more achievable if a first project moves rapidly into development, with a programme of subsequent projects.

Poland

Nuclear policy and outlook

In 2009, the Polish government decided to initiate a new nuclear power programme. The Polish Nuclear Power Programme (PPEJ), updated in June 2026 and awaiting reapproval, envisages two large nuclear power plants with a combined capacity of 6-9 GWe. The first unit of the first plant is scheduled to enter commercial operation in 2036, and the first unit of the second plant is expected to be fully operational by 2040.

In November 2022, the Polish government selected Westinghouse's AP1000 technology for the country's first nuclear power plant, at Lubiatowo-Kopalino in the Choczewo municipality of Pomerania. The plant will comprise three units with a total capacity of 3750 MWe. The project company, Polskie Elektrownie Jądrowe (PEJ), is wholly owned by the State Treasury, and the plant is being delivered by a Westinghouse-Bechtel consortium.

In December 2025, the European Commission approved state aid for the project, including a two-way contract for difference. The project will be financed through 30% state equity and 70% debt. In February 2026, the US Export-Import Bank signed a loan agreement to finance preparatory and engineering work.

Preparatory works began at the site in 2025. PEJ submitted a construction licence application to the National Atomic Energy Agency (PAA) in March 2026. In September 2026, PEJ and the Westinghouse-Bechtel consortium agreed the main terms of the engineering, procurement and construction (EPC) contract, with the remaining terms due to be finalized. First concrete is scheduled for the fourth quarter of 2028, with the three units entering commercial operation in 2036, 2037 and 2038.

In 2022, ZE PAK, Polska Grupa Energetyczna (PGE) and Korea Hydro & Nuclear Power (KHNP) signed a letter of intent to develop a plant with two APR1400 units at Pątnów, but KHNP withdrew in August 2025.

The government is running a competitive dialogue to select the technology supplier and strategic partner for the second large nuclear power plant, with participants from the USA, France and Canada. OSGE (see below) has asked to have the BWRX-300 admitted to the competitive dialogue for the second plant.

Bełchatów and Konin have been identified as the most likely sites for the second large nuclear power plant. Selection of the partner and technology is planned for 2027 and confirmation of the site for 2028. Construction is expected to begin around 2032, with the first unit commissioned around 2040. Unlike the first plant, the second is expected to rely on the selected partner to help finance the project.

Orlen Synthos Green Energy (OSGE), a joint venture between Orlen and Synthos Green Energy, plans to deploy GE Vernova Hitachi BWRX-300 small modular reactors. In December 2023, the Ministry of Climate and Environment issued decisions-in-principle for up to 24 BWRX-300 units at six locations, a total of 7200 MWe. In August 2025, Włocławek, in central Poland, was selected as the first site. OSGE expects to complete the first unit by 2032, and the second by 2035.

In July 2023, copper and silver producer KGHM received a decision-in-principle for a 462 MWe NuScale VOYGR plant comprising six 77 MWe modules.

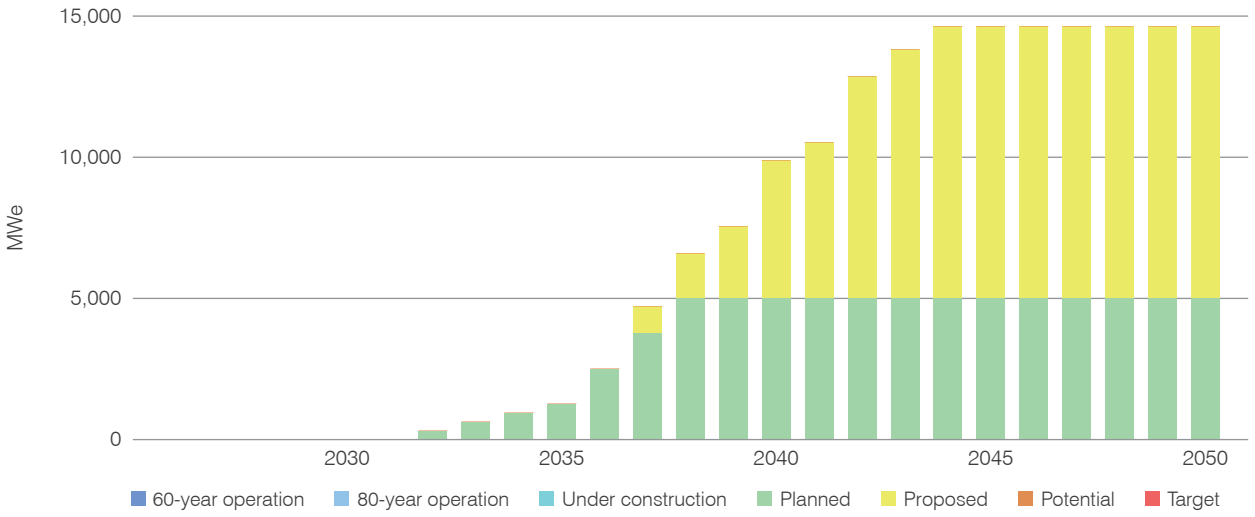
In 2023, state-owned Industria selected Rolls-Royce SMR technology for a project to produce 50,000 tonnes of hydrogen a year. The project received a decision-in-principle in May 2024.

Table Po.1 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	-	-	5014	9618	-	9,000 (The upper limit of the 6-9 GWe objective)	(exceeded by planned and proposed capacity)	14,632

* Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Po.1 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Poland continues to make progress towards its first and second large-scale construction projects. In parallel, OSGE expects to start up its first BWRX-300 reactors ahead of both projects.

Country Category	Newcomer
Policy Framework Readiness	Moderate-High There is strong cross-party commitment to nuclear energy and established nuclear legislation and programme. The principal concern is that the June 2026 Polish Nuclear Power Programme update is still pending final government adoption.
Institutional & Infrastructure Readiness	Moderate-High PEJ, the National Atomic Energy Agency (PAA) and the wider institutional framework are functioning and undergoing licensing activity. Regulatory staffing, workforce scale-up, grid delivery and radioactive waste infrastructure require continued development.
Programme & Project Development Readiness	Moderate-High The first plant now has approved state aid, construction licence application, site works and advanced financing arrangements; the second plant and OSGE SMRs are also progressing.
Target Achievability	Moderate The scheduled starts for both the first and second plants have been pushed back. While these revised targets are more practical, progress is required on both those plants and the SMR programme to achieve their respective planned start-up dates.

Romania

Current operations

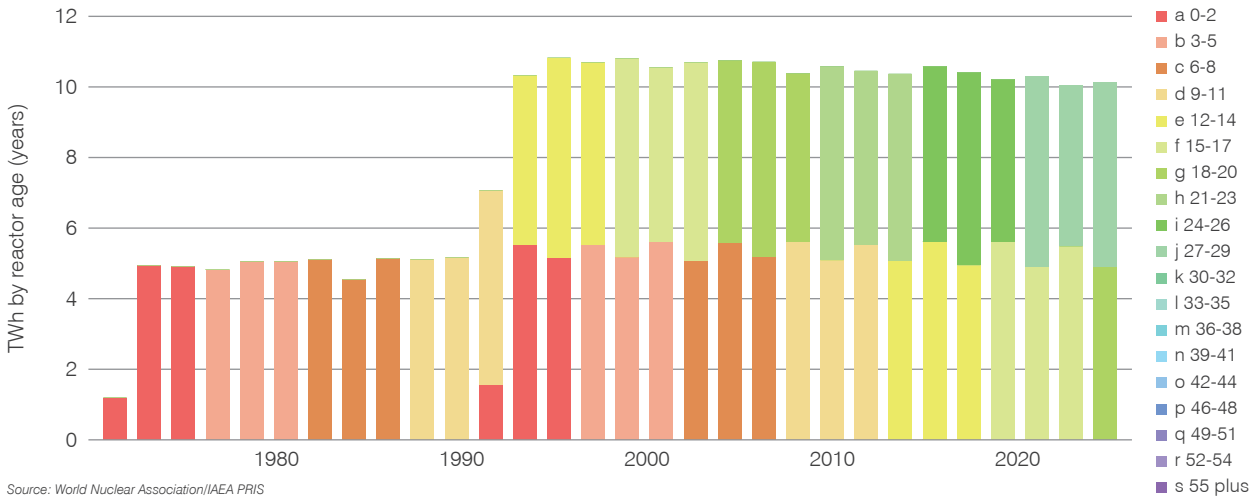
Two Candu-6 units at the Cernavodă nuclear plant have been in operation since 1996 and 2007. Unit 1 is to be refurbished, with major work scheduled from 2027 to 2029. The project is expected to extend the reactor's operating lifetime by another 30 years to 2060.

Cernavodă takes its cooling water from the Danube. In 2026, a drought led to the flow of the Danube falling to about a third of the July average. Cernavodă 1 shut down on 28 July and unit 2 on 13 August and were not expected to restart before late-October.

Table Ro.1 Nuclear capacity status (as of 1 October 2026)

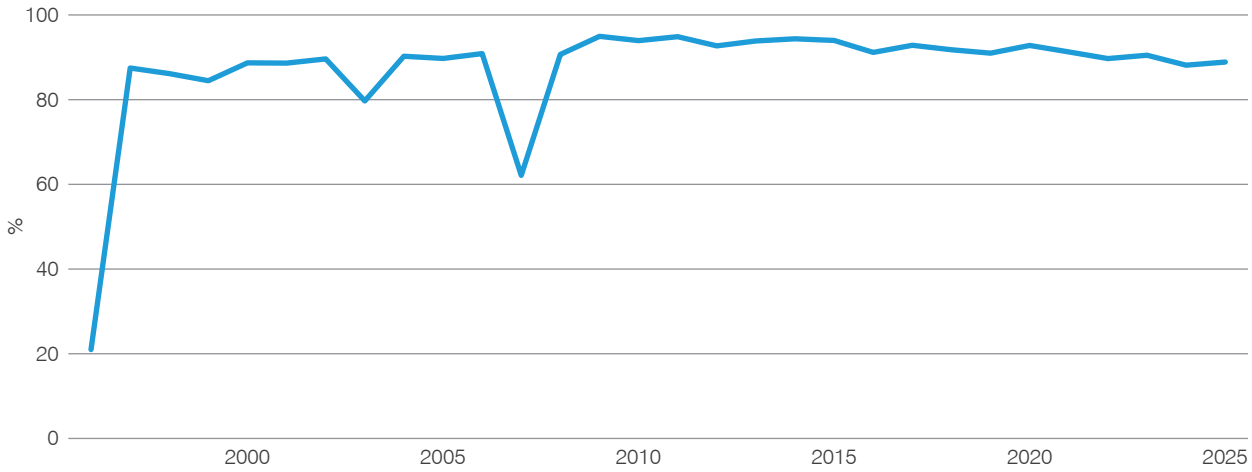
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
2	1300	1411	0	-	233

Figure Ro.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Ro.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

Construction began on the first four units at Cernavodă in 1983-84 and on unit 5 in 1987. Construction on the plant was halted in 1990 but resumed on unit 1 in 1991 and unit 2 in 2001.

There have been long-standing plans to complete the construction of the third and fourth units. In June 2023 a support agreement between the Romanian government and Nuclearelectrica allowed work to complete units 3&4 to progress. The units were projected to enter commercial operation in 2030 and 2031, respectively.

The EPC contract for the completion of units 3&4 was signed in November 2024 with the FCSA Joint Venture including Fluor, AtkinsRéalis, Ansaldo Nucleare and Sargent & Lundy Energie. Given that the full construction phase would only commence after a final investment decision, the 2030 and 2031 commercial operation dates are very unlikely to be met.

The shutdown of units 1&2 has highlighted the issue of providing sufficient cooling water to the plant. A 2024 draft government decision on restoring the Bala branch bifurcation of the Danube states that it would help secure the minimum cooling flow for Cernavodă. The works would take four years to complete but haven't started. Nuclearelectrica has said the works would allow all four units to operate at full capacity.

Separately, Romania has been exploring deployment of SMRs. In May 2022 a former coal plant site in Doicești, in the Muntenia region, was selected as the location for Romania's first SMR. At the end of December 2022 RoPower (a joint venture between Nuclearelectrica and Nova Power & Gas) and NuScale Power signed a contract for the front-end engineering and design work for a six-module (6x77 MWe) VOYGR-6 power plant.

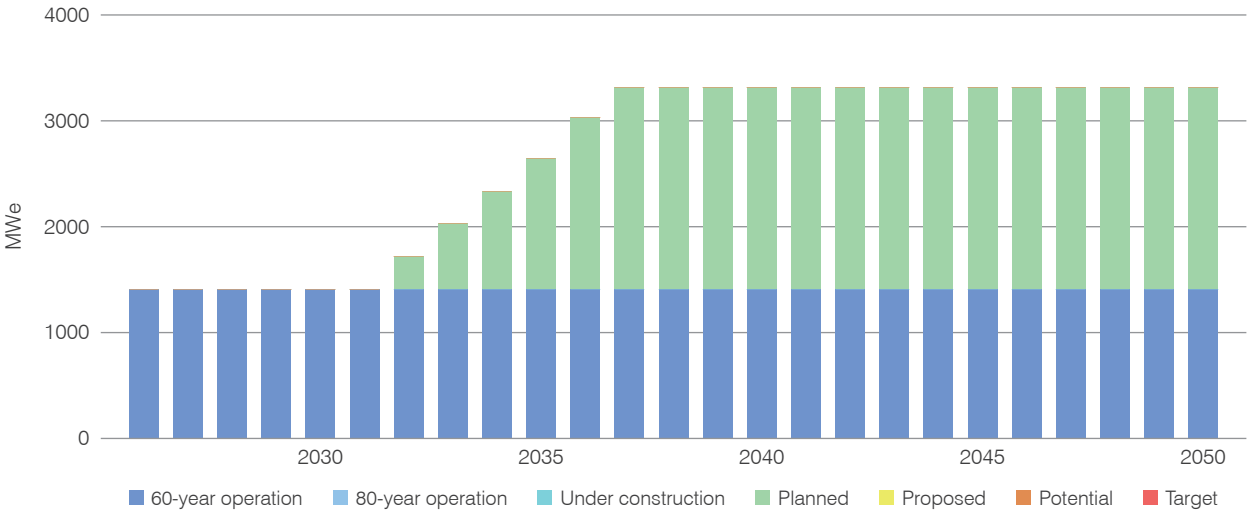
In February 2026, Nuclearelectrica shareholders approved a conditional FID for the VOYGR-6 plant, targeting operation of the first module in 2033. However, the project is currently experiencing intense political scrutiny and financial scaling adjustments.

Table Ro.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
1411	-	-	1902	-	-	-	-	3313

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Ro.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Romania is an established nuclear country with a defined programme covering all its projected capacity to 2050.

Country Category	Restarter
Policy Framework Readiness	High Romania has sustained political commitment for completing Cernavodă 3&4, but prime minister Ilie Bolojan has publicly criticized the economic justification of the Doicești project. A state-backed project company, international agreements and financing mechanisms are in place for Cernavodă 3&4.
Institutional & Infrastructure Readiness	High The country has an experienced operator and regulator, strong CANDU expertise, domestic fuel fabrication and uranium processing capability, established spent fuel storage and international project partnerships.
Programme & Project Development Readiness	Moderate-High Cernavodă 1 refurbishment is firmly committed; units 3&4 have entered substantial preliminary works; Doicești is advanced but its conditional FID and FOAK technology retain significant uncertainty.
Target Achievability	Moderate The published 2030-31 schedule for units 3&4 is very unlikely to be met; the mid-2030s is the earliest likely start-up date. River works will be required to ensure sufficient cooling water supply. Financial issues related to the Doicești SMR plant are unresolved.

Russia

Current operations

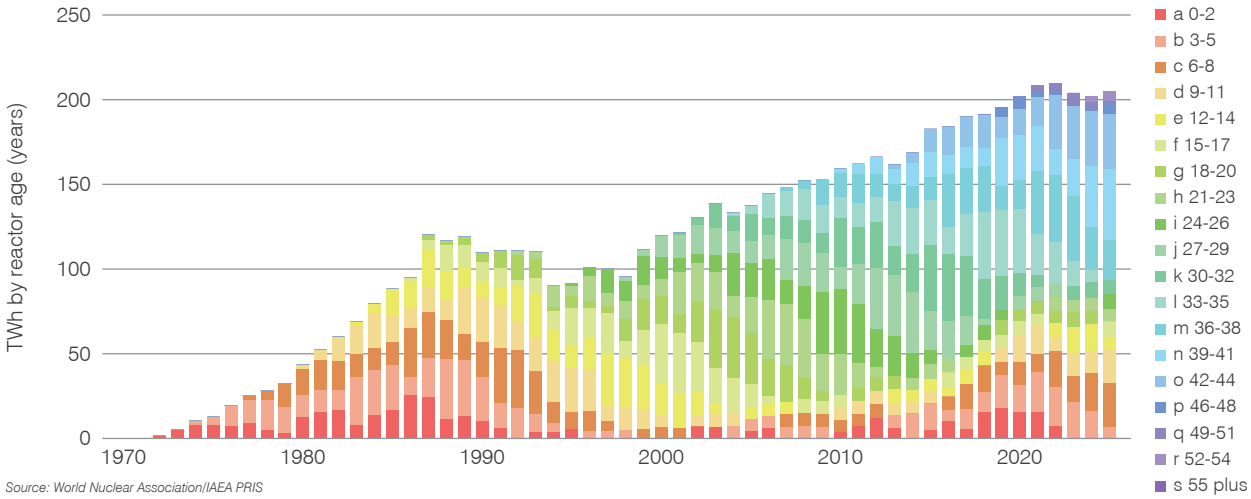
Russia had 34 operable reactors, with seven reactors under construction. Most of Russia's reactors have been upgraded for long-term operation beyond their initial design lifetimes. Design operating lifetimes are around 30 years for most units, and these are generally extended by a further 15-30 years. The newer VVER-1200 reactors have 60-year design lifetimes.

The remaining RBMK units are expected to close by the mid-2030s, having been granted lifetime extensions to about 45 years. Smolensk 1 is licensed to 2027, and Leningrad 3&4 and Kursk 4 to 2030. The three remaining EGP-6 units at Bilibino closed in December 2025.

Table Ru.1 Nuclear capacity status (as of 1 October 2026)

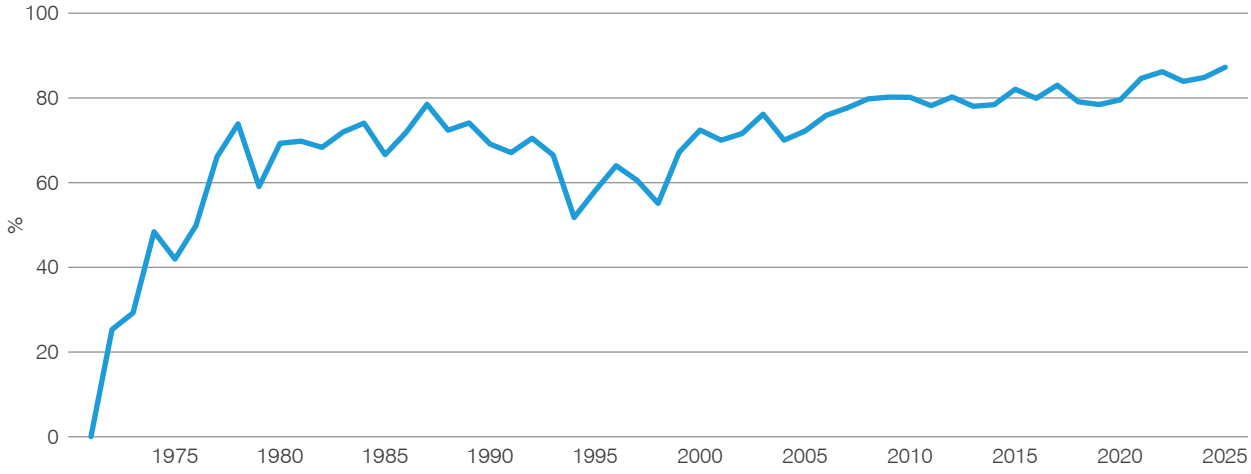
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
34	27,969	29,795	7	5342	6029

Figure Ru.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Ru.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

In December 2024, the government approved the General Scheme for the Location of Electric Power Facilities to 2042, which targets a 24% nuclear share of electricity generation by 2042. In April 2025, the government approved the Energy Strategy of the Russian Federation to 2050. It targets a 25% nuclear share by 2045 and calls for the construction of 38 new nuclear power units.

Kursk II-1, the first VVER-TOI unit, was connected to the grid in December 2025 and entered commercial operation in May 2026.

Reactors under construction are:

1. Kursk II units 2&3 (VVER-TOI)
2. Leningrad II units 3&4 (VVER-1200)
3. Seversk: BREST-OD-300 lead-cooled fast reactor
4. Cape Nagloynyn: two RITM-200S reactors for the first floating power unit supplying the Baimsky mining project

Construction began on Kursk II-2 in April 2019, the BREST-OD-300 in June 2021, the first floating power unit in August 2022, Leningrad II-3 and II-4 in March 2024 and March 2025, and Kursk II-3 in January 2026.

In July 2026, Rosatom said that projects for 18 new units at nine sites were at various stages of implementation.

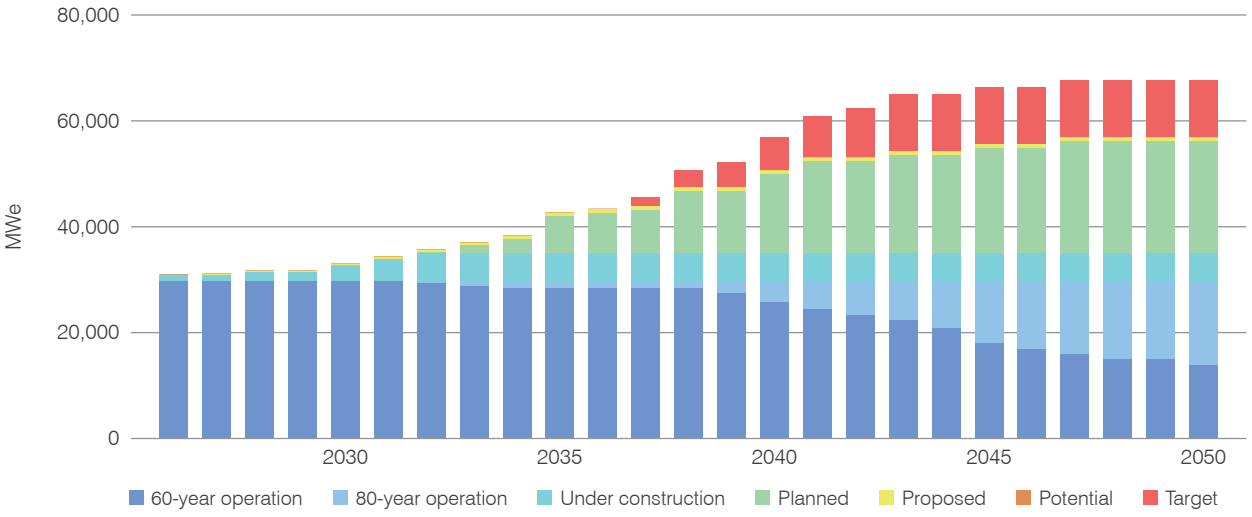
The electricity shares expressed by the government assume that some reactors that are currently operable will shut down ahead of 2050. However, in the capacity projections below, reactors are assumed to operate for up to 80 years, in line with the general assumption in this report.

Table Ru.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
14,018	15,777	5342	21,000	754	-	67,647 (based on reactors planned to meet percentage share target, but without retirements)	10,756	67,647

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Ru.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Russia has an established serial-build model, a largely domestic supply chain, multiple reactor technologies, extensive fuel cycle capabilities and a state-controlled institutional structure able to move projects from policy to construction.

Country Category	Pacesetter
Policy Framework Readiness	High The 25% by 2045 objective is supported by an approved energy strategy and a detailed facility location scheme extending to 2042.
Institutional & Infrastructure Readiness	High Russia possesses an experienced operator, regulator, reactor vendor, construction organizations, fuel cycle facilities and extensive supply chain.
Programme & Project Development Readiness	High Serial VVER construction continues; the first VVER-TOI is operating and projects encompassing large and small reactors, including advanced designs, are progressing.
Target Achievability	Moderate-High The plan is feasible, but requires a significant acceleration in the pace of new build construction.

Rwanda

Nuclear policy and outlook

Rwanda's strategy centres on small modular reactors (SMRs), with first operation envisaged in the early 2030s and nuclear supplying 60-70% of electricity in the long term. The Rwanda Atomic Energy Board (RAEB) has estimated this could equate with a nuclear capacity of 1500 MWe by 2050.

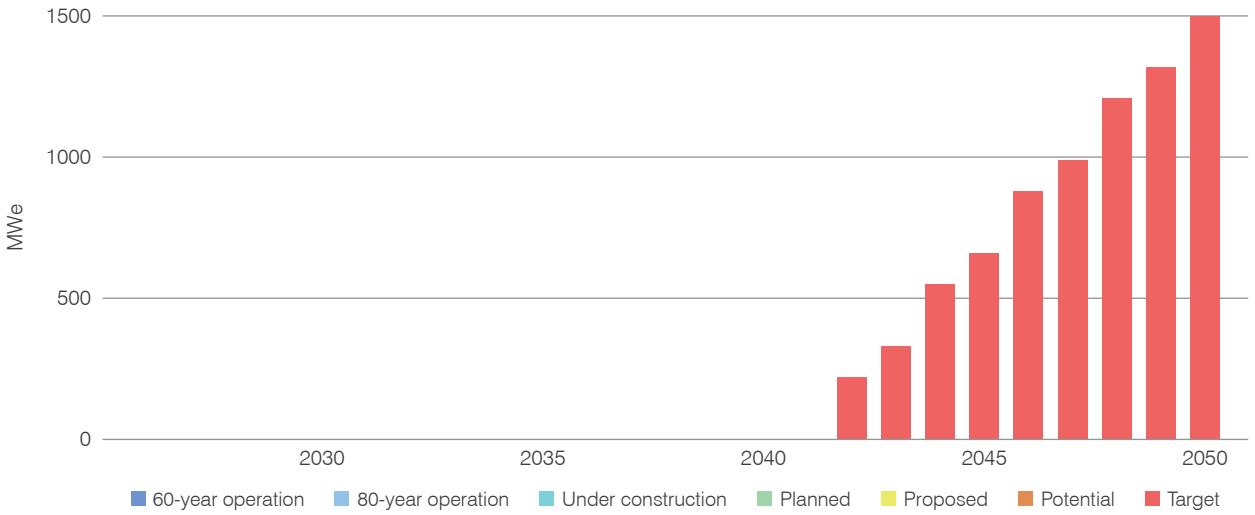
The programme advanced during 2026. In May Rwanda signed a development agreement with Holtec for SMR-300 deployment, a civil nuclear cooperation agreement with the USA, and a cooperation agreement with the IAEA. In July Rwanda also signed an SMR cooperation roadmap with Rosatom. In September the government said that approval of two sites was underway and that 110 MWe of nuclear generation was expected between 2030 and 2033.

Table Rw.1 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	-	-	-	-	-	1500	1500	1500

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Rw.1 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Rwanda's objectives for first nuclear generation by 2030-2033 are unrealistic, given the status of its nuclear programme. Its longer term objectives depend on a significant expansion of its electricity network and infrastructure.

Country Category	Candidate
Policy Framework Readiness	Low Nuclear is incorporated into national energy strategy and the government has articulated a goal of nuclear supplying 60-70% of Rwanda's electricity in the long-term.
Institutional & Infrastructure Readiness	Low-Moderate The RAEB and the Rwanda Utilities Regulatory Authority (RURA) provide programme and regulatory structures. RURA signed or renewed cooperation arrangements with regulators in Russia, Egypt, Benin and Morocco in September 2026. The nuclear law remains in draft and full power reactor regulatory capability is incomplete.
Programme & Project Development Readiness	Low-Moderate Agreements with Holtec, Rosatom and the USA, as well as Rwanda's research reactor programme represent initial progress. However, there is no clear proposal for a first project.
Target Achievability	Low A first reactor in the early 2030s is very unlikely. Nuclear capacity of 1500 MWe supplying 60-70% by 2050 would only be possible if electricity infrastructure grows significantly.

Saudi Arabia

Nuclear policy and outlook

In July 2017, the Saudi government approved the establishment of the Saudi National Atomic Energy Project (SNAEP) as part of its 'Vision 2030' plan. A key development of the SNAEP was the establishment in February 2022 of the Saudi Nuclear Energy Holding Company (SNEHC) to act as the developer of the country's national nuclear energy programme.

The issue of reactor procurement remains unresolved. The Duwaiheen Nuclear Energy Company (DNEC) holds a site licence granted in March 2023 and has sought bids for two reactors of about 1.4 GWe each, with Chinese, French, South Korean and Russian companies as approved bidders. Bid deadlines have been postponed repeatedly since the tender was launched in 2022. Westinghouse was not invited to bid because no nuclear cooperation agreement with the USA existed at the time.

In November 2025, the US and Saudi Arabia signed an agreement that the US described it as the legal foundation for a long-term partnership in which US companies would be Saudi Arabia's preferred civil nuclear partners. In July 2026, the USA and Saudi Arabia signed a nuclear cooperation '123 agreement' – subject to Congressional review – as well as an accompanying bilateral safeguards agreement.

Table Sa.1 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	-	-	-	2800	-	-	-	2800

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Sa.1 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Saudi Arabia has a licensed site, a dedicated regulator and developer, and a 123 agreement with the USA, signed July 2026 but under Congressional review, that opens a route to US technology. However, the Duwaiheen tender still has no vendor selected or contract awarded after more than four years.

Country Category	Candidate
Policy Framework Readiness	Low-Moderate Sustained national commitment and a defined programme for a first large nuclear plant. If the 123 agreement passes US Congress, it would resolve the long-running US cooperation question and open a route to US technology. The programme has nevertheless experienced repeated procurement delays and some important fuel cycle and international cooperation questions remain unresolved.
Institutional & Infrastructure Readiness	Moderate Saudi Arabia has a dedicated nuclear regulatory authority, designated owner/operator (DNEC), an IAEA comprehensive safeguards agreement and substantial human capability development.
Programme & Project Development Readiness	Moderate The Duwaiheen site is licensed, DNEC is established and the tender has four approved bidders, but the competition is now more than four years old.
Target Achievability	Moderate First nuclear generation by around 2036 remains possible only with rapid vendor selection, procurement and execution.

Serbia

Nuclear policy and outlook

In 2024 Serbia's National Assembly voted through amendments to the energy law which ended the 35-year prohibition on the construction of nuclear power plants. The Serbian Energy Sector Development Strategy of the Republic of Serbia up to 2040 with Projections up to 2050 includes the potential use of nuclear energy after 2040 as part of climate change commitments.

At the Nuclear Energy Summit in March 2024 Serbian president Aleksandar Vučić said Serbia was seeking support from other countries on nuclear know-how and financing towards a goal of establishing 1200 MWe of SMR capacity.

The Energy Sector Development Strategy adopted in November 2024, modelled the impact of the introduction of 1000 MWe nuclear capacity after 2045.

In February 2026 Serbia established a Nuclear Energy Programme Implementing Organisation (NEPIO), which became fully operational in July.

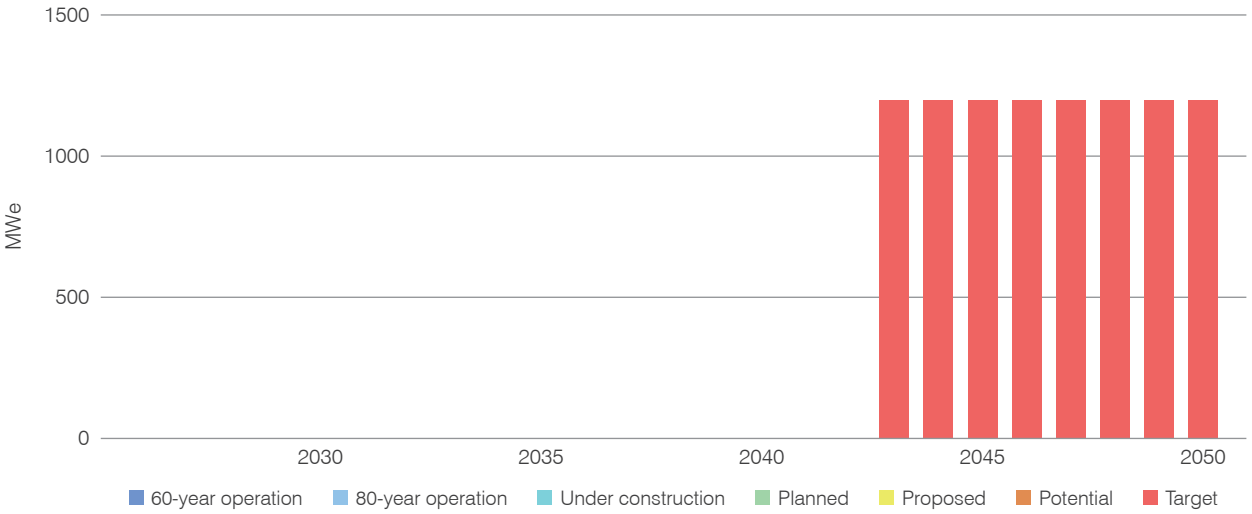
In July 2026, Minister of Mining and Energy Dubravka Đedović Handanović stated that Serbia aims to be ready to select technology by 2032 and begin construction by 2035, with a first plant expected after 2040.

Table Rs.1 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	-	-	-	-	-	1200	1200	1200

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Rs.1 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Serbia has moved from lifting its nuclear ban to running a structured IAEA-based programme. However, it remains pre-decision with no selected site or technology.

Country Category	Candidate
Policy Framework Readiness	Low The nuclear prohibition was lifted in 2024 and nuclear is considered in long-term energy planning. An informed decision on implementing a nuclear power programme is targeted for 2027. A final national decision to construct nuclear capacity has not yet been taken.
Institutional & Infrastructure Readiness	Low Serbia has an existing nuclear regulator, research institutions and a nuclear energy programme implementing organisation that became fully operational in July, with IAEA support. Further studies are being carried out on topics including the regulatory and legislative framework, human resources and supply chains.
Programme & Project Development Readiness	Low Initial studies are underway but there is no selected site or technology.
Target Achievability	Low The government's timetable is to be ready to select a technology by 2032 and construction starting by 2035, which would put first generation in the early-to-mid-2040s. This depends on sustained progress through two lengthy preparatory phases.

Slovakia

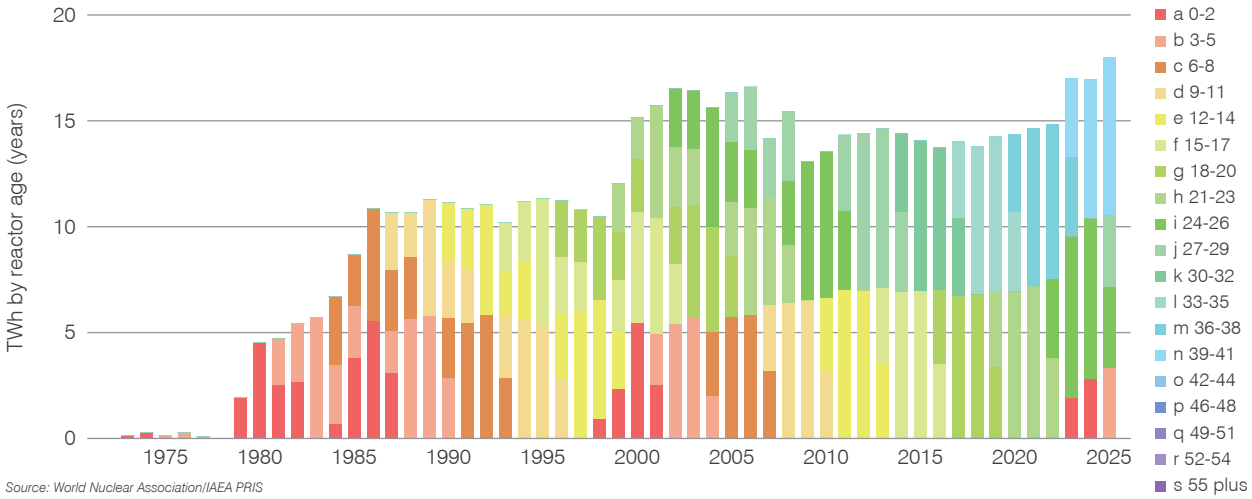
Current operations

Slovakia's five operable VVER-440 units at the Bohunice and Mochovce sites are owned by Slovenské elektrárne. An additional VVER-440 is undergoing commissioning at Mochovce and achieved first criticality in August 2026.

Table Sk.1 Nuclear capacity status (as of 1 October 2026)

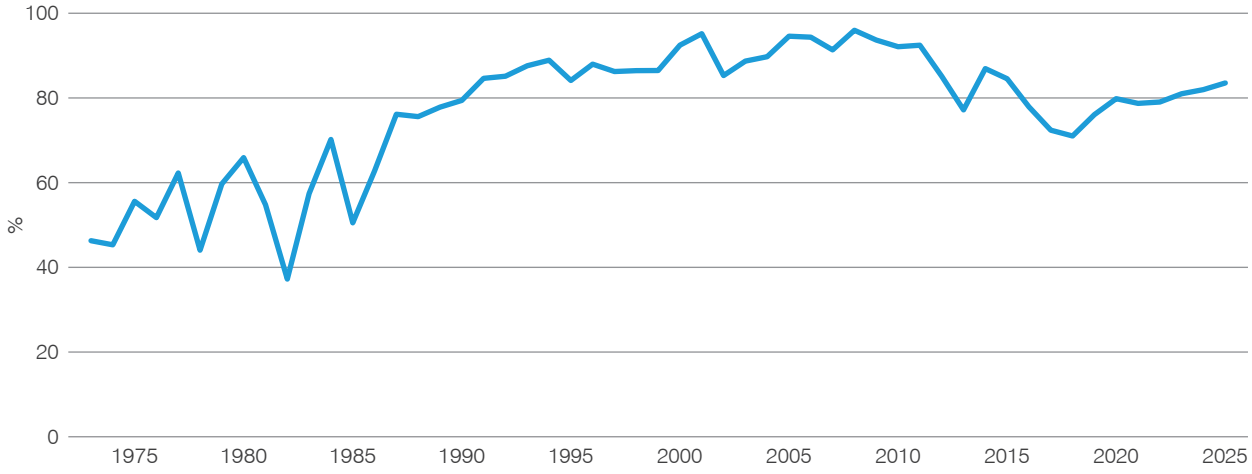
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
3	2306	2470	1	471	552

Figure Sk.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Sk.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

The Slovak government approved plans for a new unit of around 1200 MWe near the Bohunice nuclear power plant in May 2024. In January 2026 Slovakia and the USA signed an intergovernmental agreement covering the development of a new, state-owned 1200 MWe unit at Bohunice that is expected to begin operation by 2041. An April 2026 agreement between Slovakia, the USA and Westinghouse launched preparatory studies for the new unit.

In September 2026 the Slovakia's state-owned decommissioning company JAVYS acquired CEZ's 49% stake in JESS, the company formed to develop new nuclear capacity in Slovakia.

Slovakia is also considering building small modular reactor (SMR) capacity.

In June 2025 Newcleo and JAVYS established a joint venture, now named Newvys, to develop up to four 200 MWe lead-cooled fast reactors at the Bohunice site.

In August 2025 Slovenské elektrárne and Synthos Green Energy signed a memorandum of understanding to explore the possible deployment of GE Vernova Hitachi's BWRX-300 SMRs.

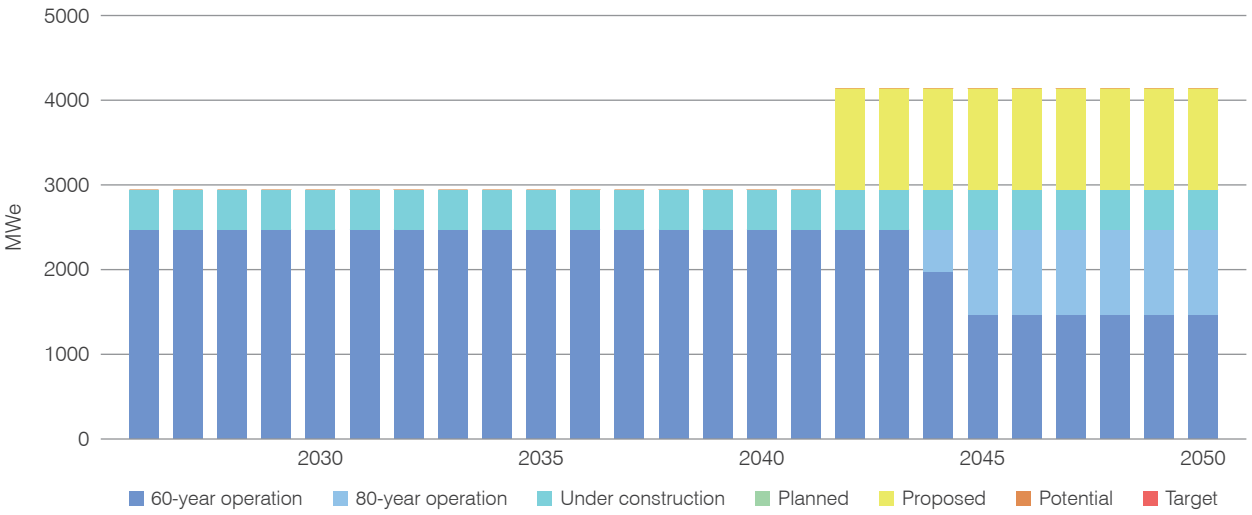
A feasibility study under the US-funded Project Phoenix confirmed in January 2026 that four sites (Bohunice, Mochovce, Vojany and the US Steel Košice site) are suitable for SMR deployment. Slovenské elektrárne has indicated that SMRs could be operational from 2035.

Table Sk.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
1470	1000	471	-	1200	-	-	-	4141

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Sk.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Nuclear power in Slovakia has exceptionally strong policy support and mature institutions. A VVER-440 reactor at Mochovce is in advanced stages of commissioning and a new state-owned unit is planned for Bohunice. However, the new unit does not yet have an EPC contract, investment decision or construction licence.

Country Category	Expander
Policy Framework Readiness	High Nuclear has strong policy support. An intergovernmental agreement with the USA on a new state-owned Bohunice unit was signed in January 2026. The siting permit for the unit was granted in 2024.
Institutional & Infrastructure Readiness	High Slovakia has an experienced operator and independent regulator, recent construction and commissioning capability through Mochovce 3&4, extensive engineering expertise, mature waste and decommissioning organisations, and strong nuclear education and supply chain capabilities. The new unit will be state-owned, so the ownership and operating arrangements are still to be confirmed.
Programme & Project Development Readiness	Moderate-High Mochovce 4 reached first criticality in August 2026. The Bohunice project has a siting permit, a state-owned project company, government backing, a financial adviser and preparatory studies launched with Westinghouse in April 2026. There is no final EPC contract, investment decision or construction licence for the new unit.
Target Achievability	Moderate A new 1.2 GWe unit operating around 2040-41 is plausible, but substantial financing, contracting, licensing and EU approval work remains. Mochovce 3&4 were expected to start operating in 2012 and 2013, with unit 3 entering commercial operation only in October 2023 and unit 4 still being commissioned in 2026, which shows the potential for major schedule overruns.

Slovenia

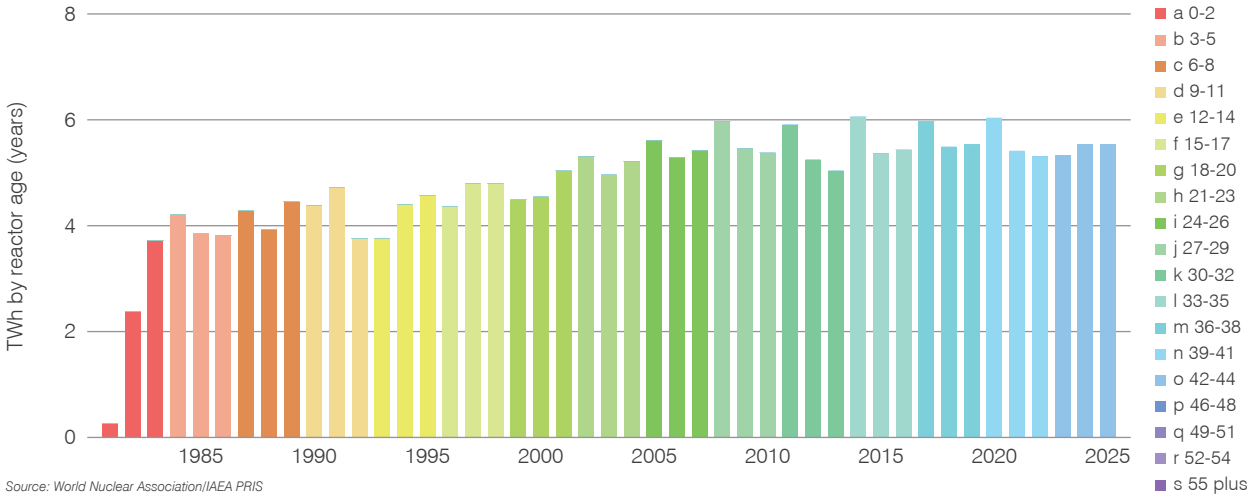
Current operations

The Krško nuclear power plant is a Westinghouse PWR operational since 1981. It is co-owned by Croatia's Hrvatska Elektroprivreda (HEP) and Slovenia's GEN Energija and generates about a third of the country's electricity. Its operating lifetime was designed to be 40 years, and a 20-year extension has been approved. In December 2024 the plant's operator, NEK, said it would study the feasibility of operation beyond 60 years.

Table SI.1 Nuclear capacity status (as of 1 October 2026)

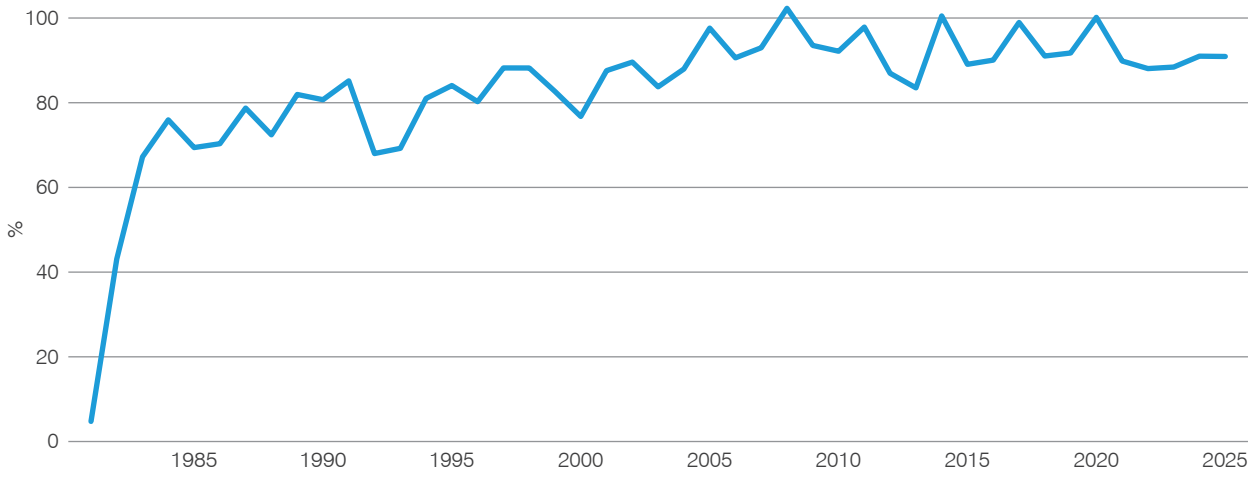
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
1	696	736	-	-	204

Figure SI.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure SI.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

A second unit at Krško, referred to as the JEK 2 project, is planned. A cross-party summit held in January 2024 agreed on the necessity of both renewable and nuclear energy for Slovenia's carbon-free future.

Technical feasibility studies completed in August 2025 confirmed the suitability of both Westinghouse's AP1000 and EDF's EPR and EPR1200 for the project, while KHNP, which had been involved in earlier discussions, decided not to proceed.

In February 2026 the government formally decided to begin preparing the national spatial plan for JEK 2, with a referendum now envisaged before a final investment decision in 2029. The government appointed in June 2026 said JEK 2 would be a priority.

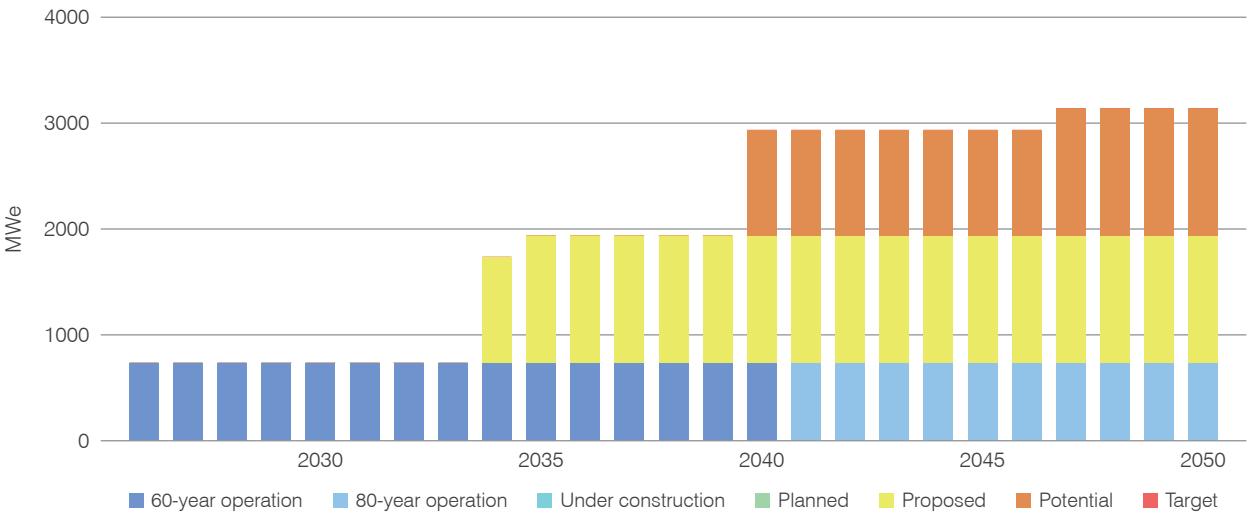
In addition to allowing for the expansion of the Krško plant, the national 'spatial strategy' approved by parliament in mid-2023 paves the way for building small modular reactors in the country. In November 2024 GEN Energija said it was also studying the option of deploying SMRs.

Table SI.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	736	-	-	1200	-	-	-	1200

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure SI.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Slovenia combines strong institutions and a long-running operating record at Krško with a government-led preparation programme for JEK 2, but the project is still pre-decision, with no vendor selected, no investment decision and a referendum still to come.

Country Category	Restarter
Policy Framework Readiness	Moderate-High Nuclear is embedded in national energy strategy, and the government formally began preparing the national spatial plan for JEK 2 in February 2026. The final decision remains conditional on a referendum.
Institutional & Infrastructure Readiness	High Slovenia has more than four decades of operating experience, a mature regulator (SNSA), experienced utility institutions, research and engineering capability, dry spent fuel storage commissioned in 2023 and a low-and intermediate-level radioactive waste repository under construction.
Programme & Project Development Readiness	Moderate The site (west of the existing plant), developer, capacity range, financing concept and spatial-planning process are defined. There is still no final supplier or investment decision.
Target Achievability	Moderate Operation in the early 2040s is achievable, with spatial-plan adoption expected in 2028 and a final investment decision in 2029.

South Africa

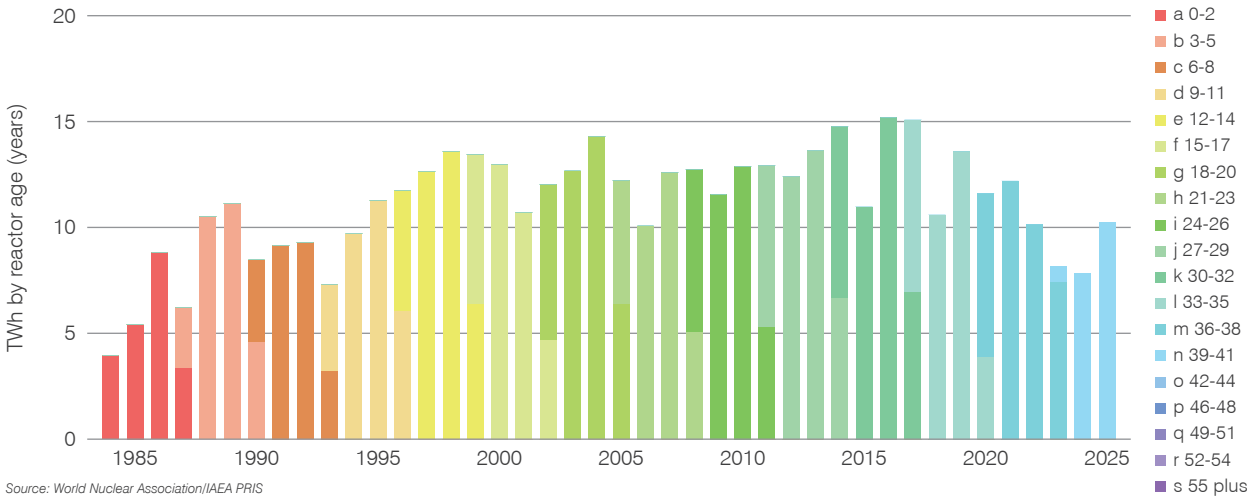
Current operations

South Africa operates two nuclear reactors, Koeberg 1&2 near Cape Town, commissioned in 1984 and 1985 respectively. Both have received licence extensions allowing operation through the mid-2040s. There are no reactors under construction.

Table Za.1 Nuclear capacity status (as of 1 October 2026)

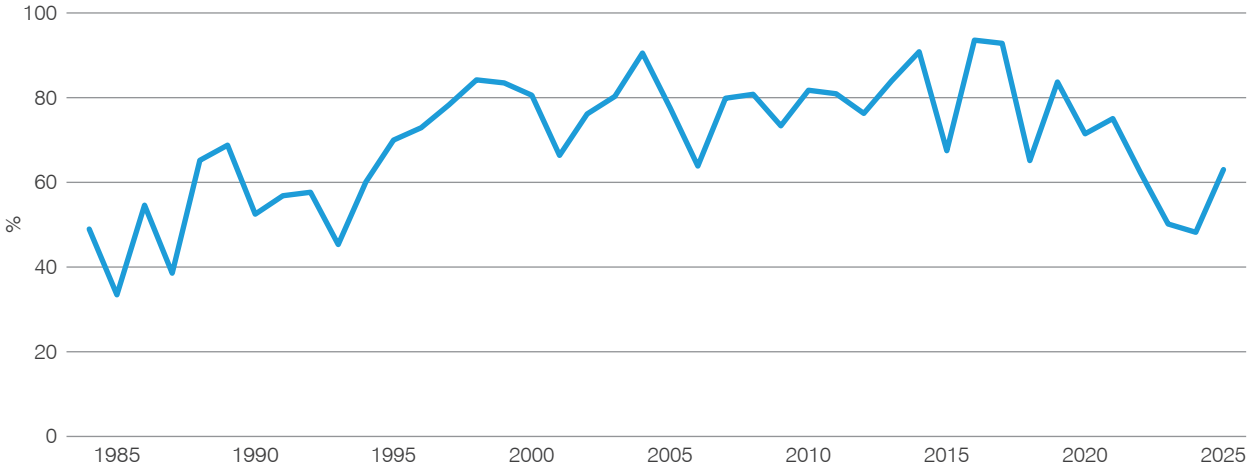
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
2	1854	1934	-	-	440

Figure Za.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Za.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

The government's policy direction shifted significantly in October 2025 when it approved the Integrated Resource Plan 2025, which calls for 5200 MWe of new nuclear capacity by 2039.

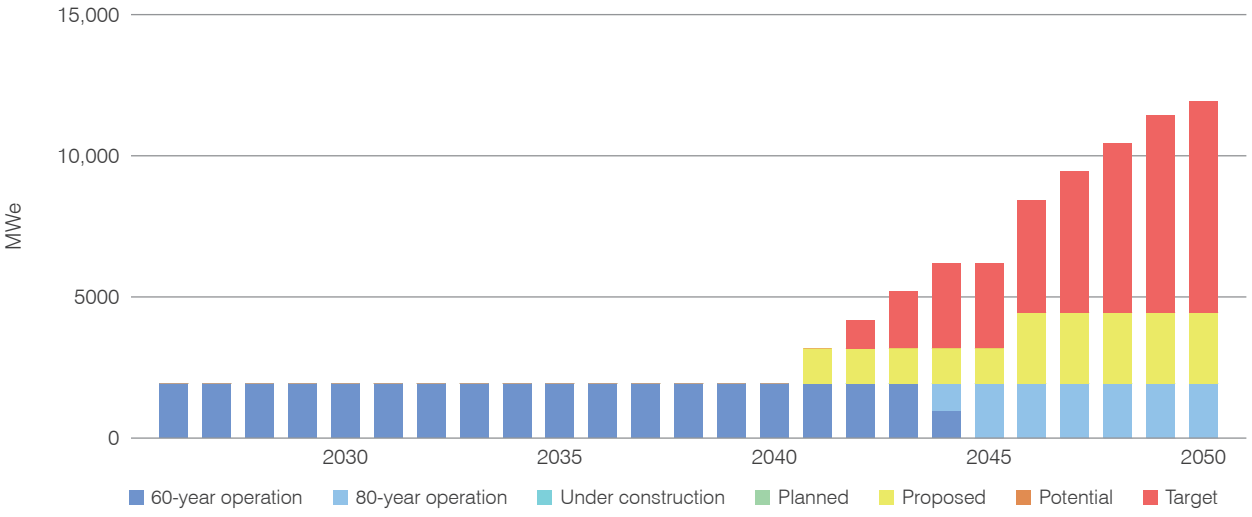
In June 2026 Eskom published its Final Environmental Scoping Report for a proposed nuclear plant of up to 5200 MWe. The report considered potential sites at either Thyspunt in the Eastern Cape province or Bantamsklip in the Western Cape, with Thyspunt designated as the preferred site.

Table Za.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	1934	-	1200	4000	-	5200 (new capacity)	0	5200

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Za.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

South Africa has an experienced operator, an established regulator and mature nuclear institutions, and IRP 2025 gives it a much clearer policy basis for new nuclear than at the previous assessment. The extension of both Koeberg units to the mid-2040s and the start of site and environmental work are positive developments. A large gap remains between the 5.2 GWe policy objective and an executable construction programme.

Country Category	Restarter
Policy Framework Readiness	Moderate-High IRP 2025 sets a 5200 MWe target for 2039. No financing model or procurement route has been approved.
Institutional & Infrastructure Readiness	Moderate Eskom operates Koeberg, and the National Nuclear Regulator, Necsa and a waste management institution are in place. No reactor has been built since the 1980s, and the construction workforce and supply chain have shrunk.
Programme & Project Development Readiness	Moderate Eskom's June 2026 scoping report names Thyspunt as the preferred site, with Bantamsklip as the alternative. No technology has been selected.
Target Achievability	Low-Moderate Delivering the first 1200 MWe by 2036 would be very challenging. Delivering 5200 MWe by 2039 is extremely unlikely. Neither has a selected technology, a construction start date or a financing route.

South Korea

Current operations

South Korea has 26 operable reactors, generating about 29% of the country's electricity. Four APR1400 reactors are under construction: Saeul 3&4 and Shin Hanul 3&4.

Saeul 3 reached first criticality on 12 April 2026, but commissioning tests were halted by an automatic shutdown in August (attributed by the NSSC to operator error) and a manual shutdown in September after a turbine-side steam leak. KHNP had been aiming for commercial operation in October 2026. Saeul 4 is awaiting an operating licence from the NSSC, with a decision expected in December 2026.

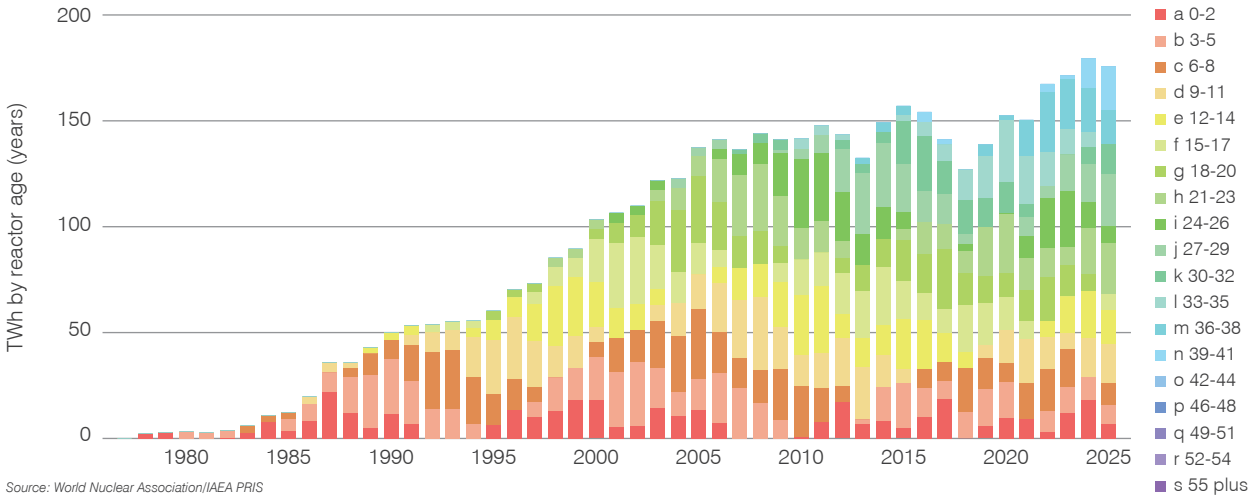
Construction of Shin Hanul 3 and 4 began in May 2025 and May 2026, with completion expected in 2032 and 2033, respectively.

South Korea is seeking lifetime extensions for ten units. Kori 2 (operating since 1983) was approved in November 2025 to operate until April 2033. Kori 3 and 4 and Hanbit 1 and 2 have been suspended since their initial licences expired; in September 2026 the NSSC began deliberating on their accident management plans and operating licence amendments. KHNP is submitting safety assessment reports for the remaining units, Hanul 1 and 2 and Wolsong 2-4.

Table Kr.1 Nuclear capacity status (as of 1 October 2026)

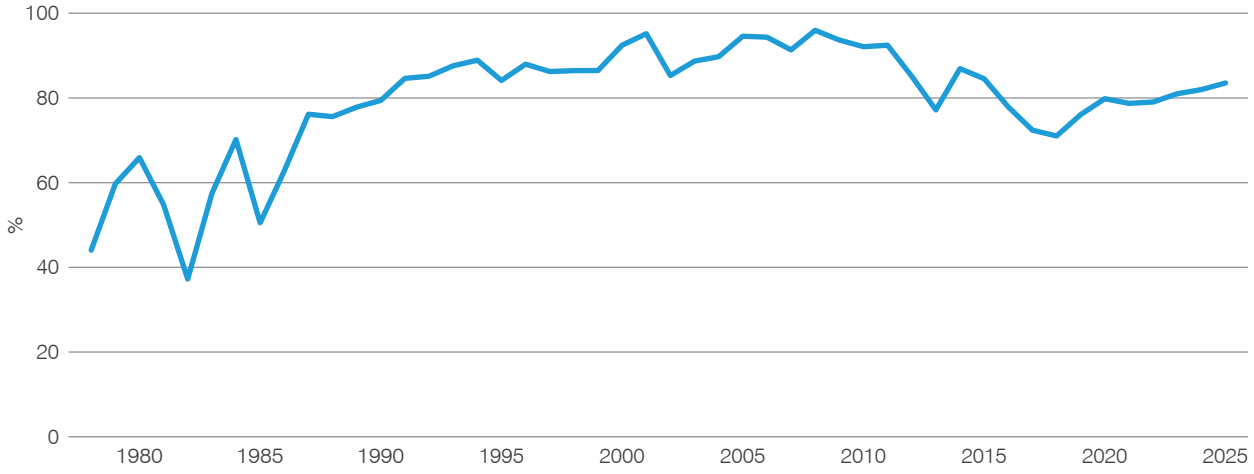
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
26	25,609	27,099	4	5600	2180

Figure Kr.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Kr.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

The 11th Basic Plan for Electricity Supply and Demand (2024-2038), finalized in February 2025, states that nuclear energy would provide 31.8% of electricity by 2030 and 35.6% by 2038. It raises nuclear capacity from 24.7 GWe in 2023 to 28.9 GWe in 2030 and 35.2 GWe in 2038, and includes the construction of two additional large reactors (in addition to Saeul 3&4 and Shin Hanul 3&4), as well as 700 MWe of SMR capacity by 2038.

President Lee Jae-myung, who took office in June 2025, reiterated in September 2025 that South Korea's long-term direction "must be toward renewable energy", while stressing that existing and under-construction nuclear projects would continue. In January 2026, following surveys showing strong public support for nuclear energy, the government confirmed it would proceed with the two new large reactors in the 11th Basic Plan.

In January 2026 KHNP launched a bidding process for a site for the two new reactors, and in June it selected Yeongdeok in North Gyeongsang province as the candidate site. Gijang, in Busan, was selected to host an SMR.

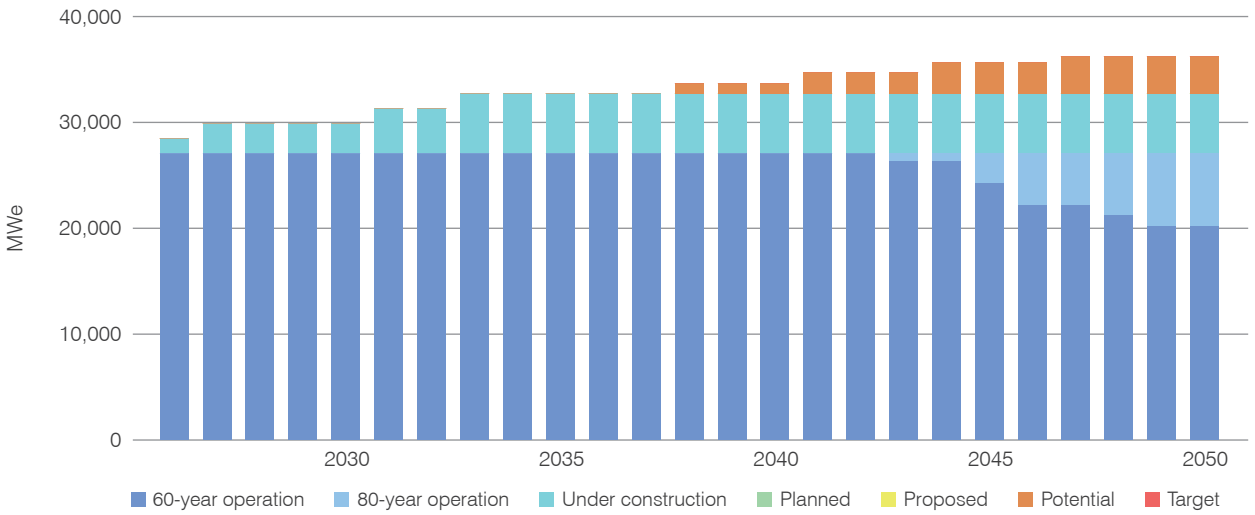
Since October 2025 the Ministry of Climate, Energy and Environment (MCEE) has been responsible for energy policy and nuclear plant construction and operation, taking over from the Ministry of Trade, Industry and Energy. In September 2026 the MCEE began a three-month public deliberation on nuclear power's role in the 12th Basic Plan (2026-2040).

Table Kr.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
20,252	6847	5600	-	-	3500	-	-	39,699

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Kr.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

South Korea has one of the world's most mature nuclear programmes, with a full-scope domestic industry, four APR1400 units under construction and candidate sites selected for two further large reactors and an SMR. However, government support for nuclear energy has wavered in recent years. The current government has reconfirmed the additional reactors, but the direction beyond 2038 will be shaped by the forthcoming 12th Basic Plan.

Country Category	Pacesetter
Policy Framework Readiness	High The 11th Basic Plan provides a quantified 2038 pathway. The current government reconfirmed the two additional large reactors in January 2026, and candidate sites have been selected for large reactors and an SMR.
Institutional & Infrastructure Readiness	High South Korea has an experienced regulator, a highly capable state-owned utility and operator, and an extensive domestic nuclear supply chain. Spent fuel, however, is still held in storage at reactor sites that is nearing capacity, and a 2025 law has only recently set out the framework for finding sites for interim storage and final disposal.
Programme & Project Development Readiness	Moderate-High Four reactors are under construction, one of which (Saeul 3) is undergoing commissioning. Candidate sites have been selected for another two large reactors and an SMR.
Target Achievability	High The 35.2 GWe 2038 pathway is credible, but depends on long-term operation approvals, first-of-a-kind SMR delivery and the new Yeongdeok reactors entering service on schedule. While achievable, South Korea's target involves limited new build, in comparison to the size of its current reactor capacity.

Spain

Current operations

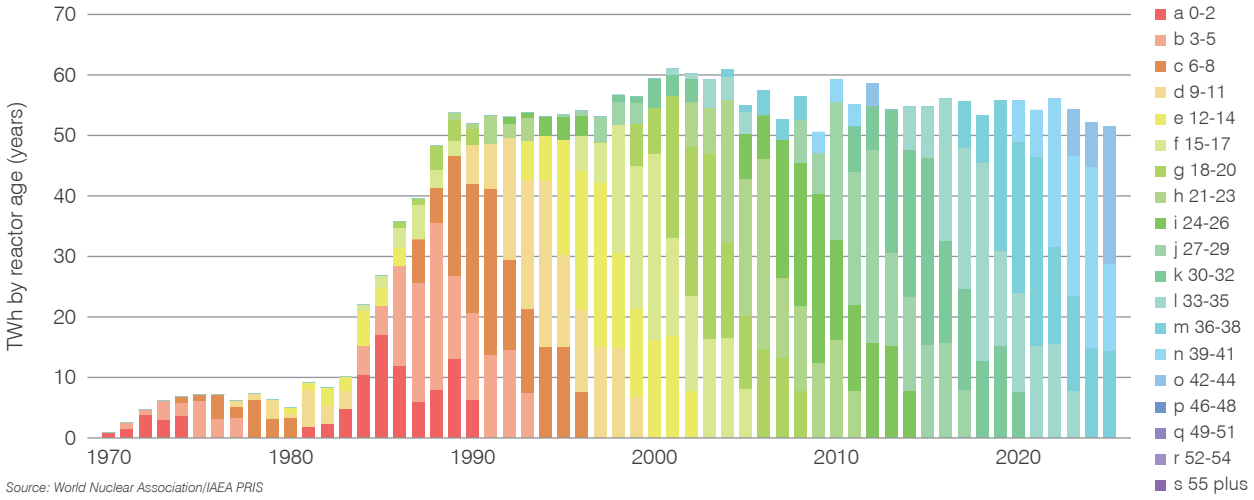
Spain has seven operable nuclear reactors, Almaraz 1&2, Ascó 1&2, Cofrentes, Trillo and Vandellós 2, providing around one-fifth of its electricity. The country has a policy to phase out nuclear power by 2035.

Under the phase-out schedule, Almaraz 1&2 were due to close in 2027 and 2028 respectively. In August 2026 the government granted the renewal of the operating licence for the Almaraz plant until June 2030. The other reactors are scheduled to close in 2030 (Ascó 1 and Cofrentes), 2032 (Ascó 2) and 2035 (Vandellós 2 and Trillo).

Table Es.1 Nuclear capacity status (as of 1 October 2026)

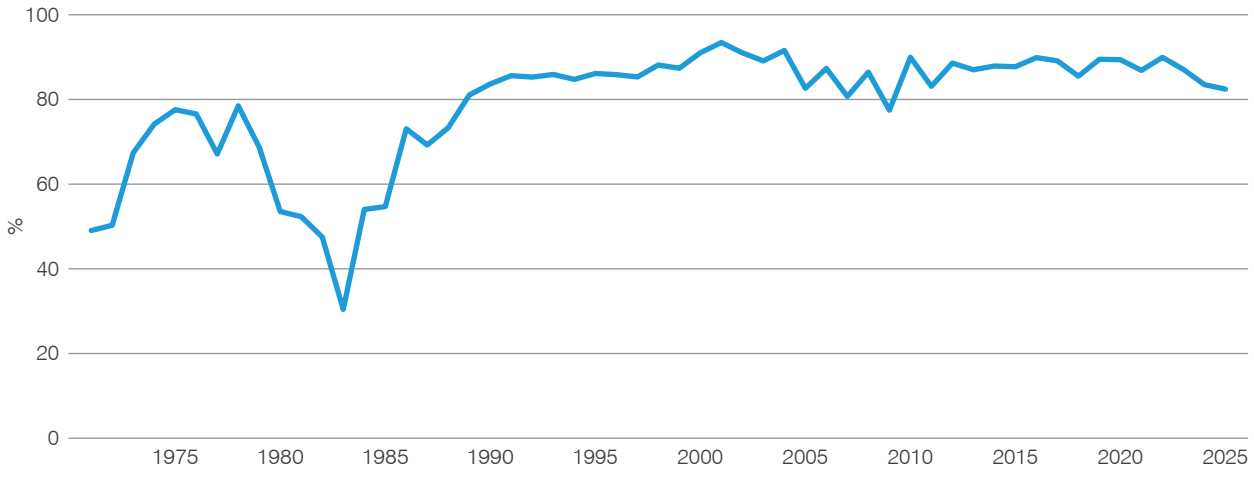
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
7	7123	7408	-	-	2180

Figure Es.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Es.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

In February 2025 the Plenary Session of the Congress, the lower house of Spain's legislative branch, voted narrowly in favour of calling on the government to reverse the phase-out decision. The non-binding proposal urged the government to extend the operating lifetimes of the existing reactors in line with guidance from the Nuclear Safety Council (CSN) and technical and economic criteria.

In August 2026 the Ministry for Ecological Transition granted the licence renewal to 2030 for Almaraz 1 and 2, stating that the limited and temporary extension reflected uncertainty in international energy markets caused by the conflict in the Middle East and the war in Ukraine. The government said that the decision does not alter the 2035 closure date for the nuclear fleet as a whole, and the extension has prompted further debate within the governing coalition.

Readiness Assessment

Spain has a mature nuclear sector and strong institutions, and all seven reactors remain in operation, with Almaraz now licensed to June 2030. National planning nonetheless remains based on the closure of the whole fleet by 2035 and contains no new build objective.

Country Category	Maintainer
Policy Framework Readiness	Low Current national planning remains based on a 2035 phase-out of the whole fleet.
Institutional & Infrastructure Readiness	Moderate Spain has a mature independent regulator, experienced operators, nuclear fuel and heavy component manufacturing, research, waste management and decommissioning capabilities.
Programme & Project Development Readiness	Very Low No new reactors are planned.
Target Achievability	N/A In the WNOR comparative framework this refers to future nuclear deployment. Spain currently has no new build capacity target, and the existing fleet is currently planned to close by 2035.

Sri Lanka

Nuclear policy and outlook

The Ceylon Electricity Board's (CEB's) Long Term Generation Expansion Plan 2025-2044 includes a 600 MWe nuclear unit in its base case, entering the system in the 2040s. The plan notes that accommodating a single unit above 600 MWe in the Sri Lankan network would be technically challenging, based on anticipated demand growth and a generation mix expected to be dominated by intermittent renewables. The previous plan (2023-2042) added that alternative small-scale reactors could be suitable for the country in the future, once these technologies have been proven.

Sri Lanka has identified five candidate sites, established a management structure to oversee procurement of nuclear reactors, and drafted a comprehensive nuclear law. The Sri Lanka Atomic Energy Board (SLAEB) has also set out a roadmap for 2024-2035 with a tentative timeline that includes site selection and characterization, establishing the regulatory body and the owner/operator, issuing the bid invitation specification by 2027, and construction and start of operation of the plant by 2034.

In October 2025 the Atomic Energy Board and the Atomic Energy Regulatory Council were reassigned from the Ministry of Power and Energy to the Ministry of Science and Technology. In March 2026 the CEB was dissolved under the Sri Lanka Electricity Act and its functions were transferred to six successor companies covering generation, transmission, distribution and system operations. The CEB's duties and obligations in the nuclear programme will pass to a new company incorporated under the Act.

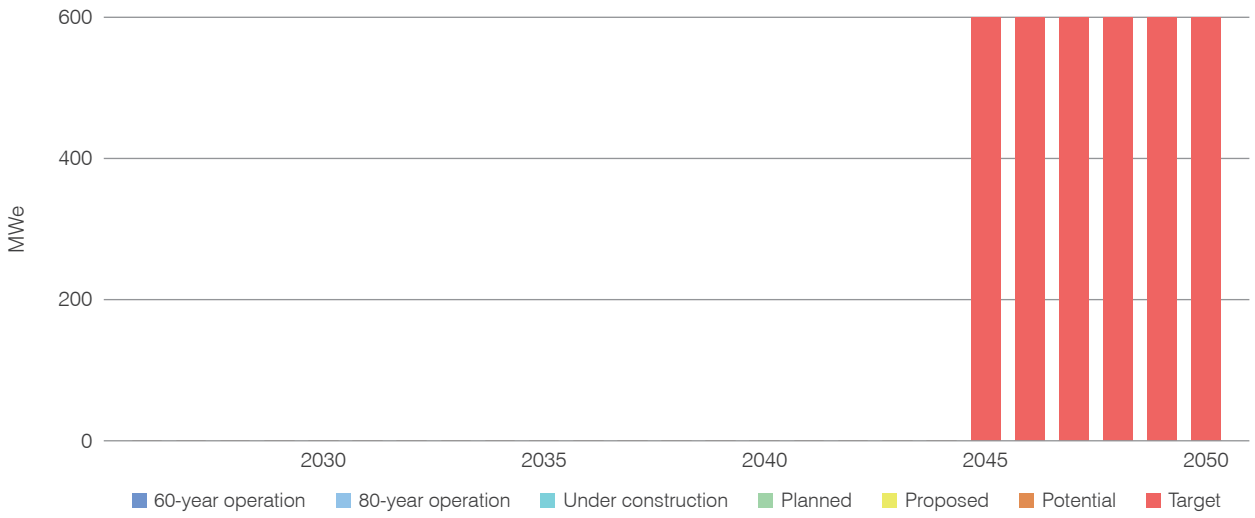
In March and April 2026 Russia raised the prospect of nuclear cooperation, including a small modular reactor. Sri Lanka declined, with Foreign Minister Vijitha Herath stating that the current emphasis is on renewable energy "for the moment".

Table Lk.1 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	-	-	-	-	-	600	600	600

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Lk.1 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Sri Lanka has studied nuclear power for more than a decade and has built an institutional foundation, with five candidate sites identified, nuclear included in the approved long-term generation plan. However, no final decision to construct a plant has been announced.

Country Category	Candidate
Policy Framework Readiness	Low Nuclear is included in the government's long-term generation plan base case and government programme structures remain active, but the government has not yet taken a final decision to construct a plant.
Institutional & Infrastructure Readiness	Low The reassignment of SLAEB to the Ministry of Science and Technology (October 2025) and the dissolution of the CEB (March 2026) have changed institutional responsibilities, and the future owner/operator role is not yet defined.
Programme & Project Development Readiness	Low-Moderate Candidate sites, a DBFOT financing concept and procurement preparations exist, and the SLAEB roadmap targets a bid invitation specification by 2027, but there is no selected site or technology.
Target Achievability	Low-Moderate A 600 MWe plant by the early 2040s is achievable given the long remaining timeframe, but only if a final programme decision and project selection occur well before the mid-2030s.

Sweden

Current operations

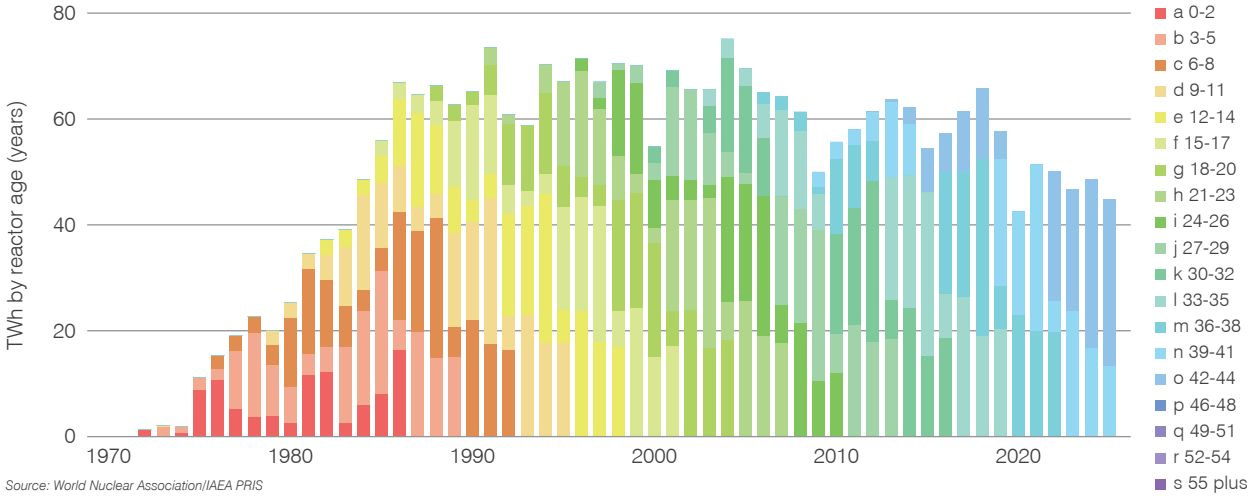
Sweden has six operable nuclear reactors: three at Forsmark, one at Oskarshamn and two at Ringhals.

In June 2024 Vattenfall announced plans to extend the operation of all five Forsmark and Ringhals reactors from 60 to 80 years. The owners of Oskarshamn 3, Uniper and Fortum, are considering extending its operating lifetime from 60 to 80 years, with a final decision expected in the early 2030s. New reactor control systems from Framatome are being installed at Ringhals 3 in 2026 and Ringhals 4 in 2027.

Table Se.1 Nuclear capacity status (as of 1 October 2026)

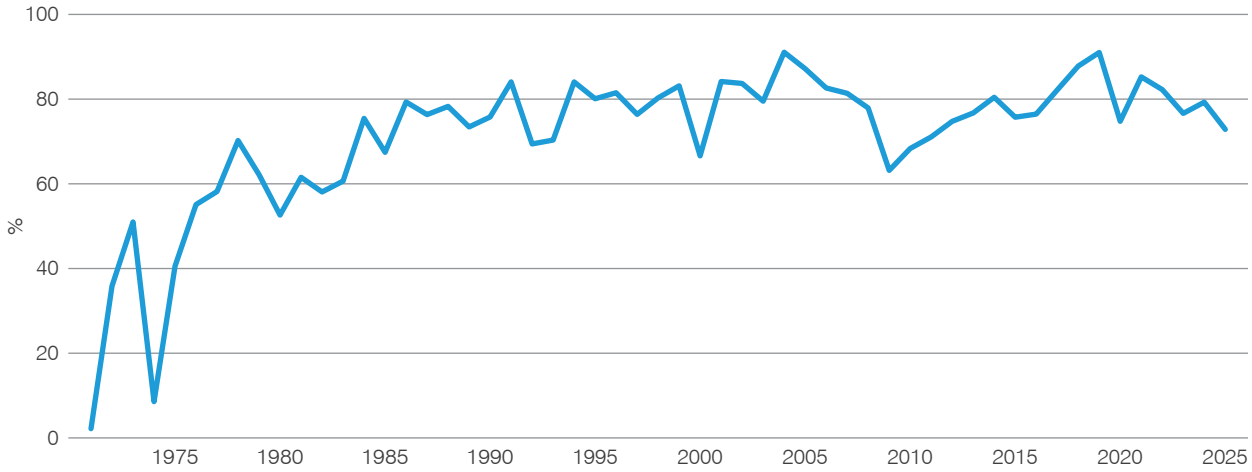
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
6	7011	7266	-	-	2652

Figure Se.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Se.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

Sweden had a nuclear phase-out policy from 1980 that was repealed in 2010. In June 2023 Sweden replaced its energy target of "100% renewable" electricity by 2040 with "100% fossil-free" electricity. In November 2023 the government announced plans to construct two large-scale reactors by 2035, increasing to the equivalent of 10 new large reactors in total, including small modular reactors (SMRs), by 2045.

In May 2025 Sweden's parliament approved state aid for companies investing in new nuclear reactors, in the form of state loans and two-way contracts for difference, limited to about 5000 MWe. By the end of August 2026 the government had received six applications for state aid, as well as several applications for government approval of nuclear facilities.

In November 2023 Vattenfall applied for planning permission to build new nuclear generating capacity on the Värö peninsula to the west of the Ringhals plant. In June 2026 its Videberg Kraft majority-owned subsidiary selected Rolls-Royce SMR for three units of 498 MWe each, with first power now expected in the mid-2030s.

Later in June 2026, the government agreed terms under which the state will hold 60% of Videberg Kraft, with Vattenfall and the industrial consortium Industrikraft holding 20% each.

Blykalla plans a six-unit plant at Norrsundet near Gävle and a six-to-eight-unit plant at Untra in Tierp municipality, both using 55 MWe SEALER lead-cooled fast reactors and targeting first power in the first half of the 2030s.

In March 2026, Kärnfull Next submitted an application for 4-6 BWRX-300 reactors at Valdemarsvik in Östergötland county. Also in March 2026 Studsvik agreed to acquire Kärnfull Next for €6.5 million, completing the acquisition in May.

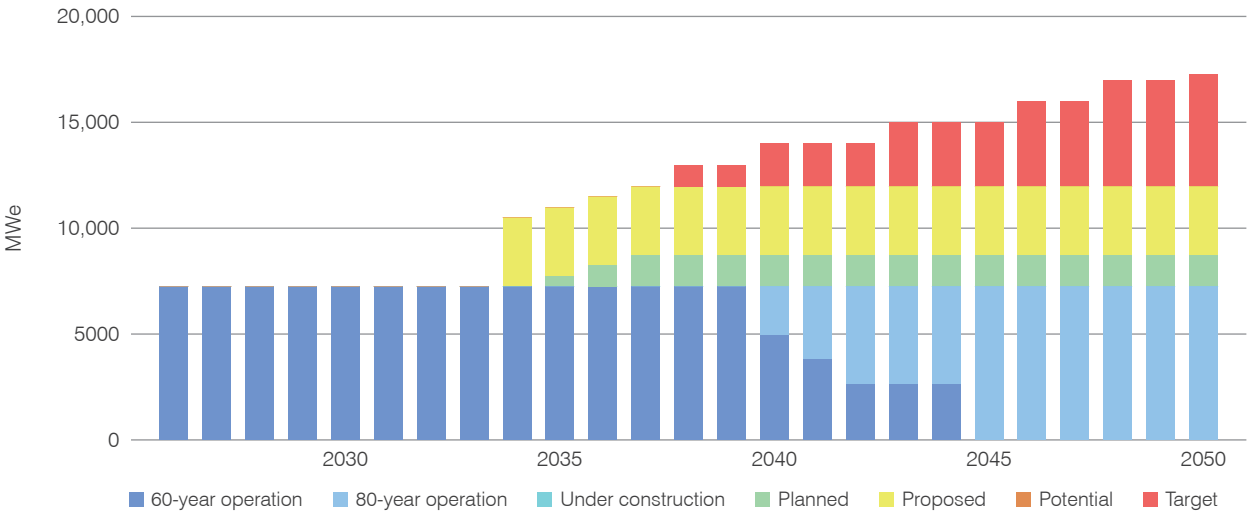
In May 2026 Studsvik applied to the government to build new nuclear capacity at its long-established industrial site near Nyköping. Studsvik said the application spanned two-to-four reactors with combined capacity of between 600 and 1400 MWe. In June 2026 it applied for state aid covering both Nyköping and Valdemarsvik, saying it would choose between them later, and in September 2026 it formed a consortium with GE Vernova Hitachi and Samsung C&T for a four-unit BWRX-300 project of about 1200 MWe.

Table Se.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	7266	-	1494	3226	-	10,000 (new capacity)	5280	17,266

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Se.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Sweden has a mature nuclear sector, with six reactors providing about 30% of its electricity, and has put in place legislation, a state financing model and state ownership of the first new project. Reaching the ambition of 10 new large reactors or their equivalent by 2045 will require rapid progress from the first project to serial construction.

Country Category	Restarter
Policy Framework Readiness	High A quantified 2035 objective, a long-term 2045 expansion direction, enabling legislation, a state loan and contract-for-difference model, and direct state investment in the first project provide a strong programme framework.
Institutional & Infrastructure Readiness	High Sweden has mature operators and regulator, substantial nuclear engineering experience, an established supply chain, highly developed waste institutions and continuing operating fleet capability.
Programme & Project Development Readiness	Moderate Ringhals/Värö peninsula now has a selected technology (Rolls-Royce SMR), a project company, industrial shareholders and a state shareholding agreed, and six state aid applications have been submitted for projects at five sites.
Target Achievability	Moderate A target of 2500 MWe by 2035 is demanding, with first power at the Värö peninsula now expected in the mid-2030s. A 10 GWe-scale programme by 2045 would require rapid progression from the first project to serial construction.

Switzerland

Current operations

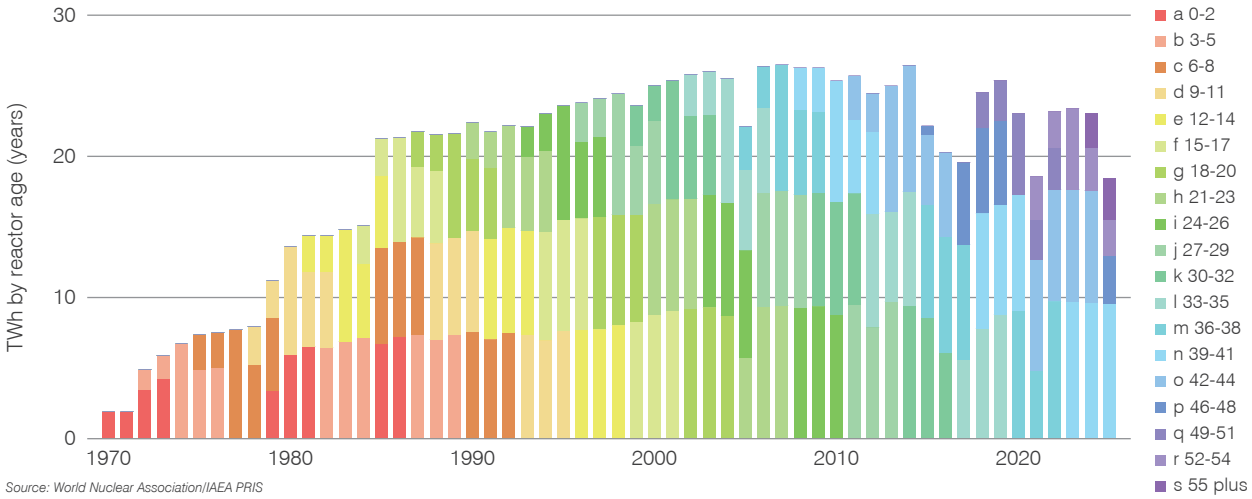
Switzerland has four operable reactors, generating about one-third of the country's electricity. Both Beznau and Gösgen produce district heating in addition to power. Swiss nuclear plants have no fixed operating lifetime limit.

In May 2026 a federal government report concluded that operation of the existing plants for up to 80 years is technically feasible and economically viable, and that state support could be provided.

Table Ch.1 Nuclear capacity status (as of 1 October 2026)

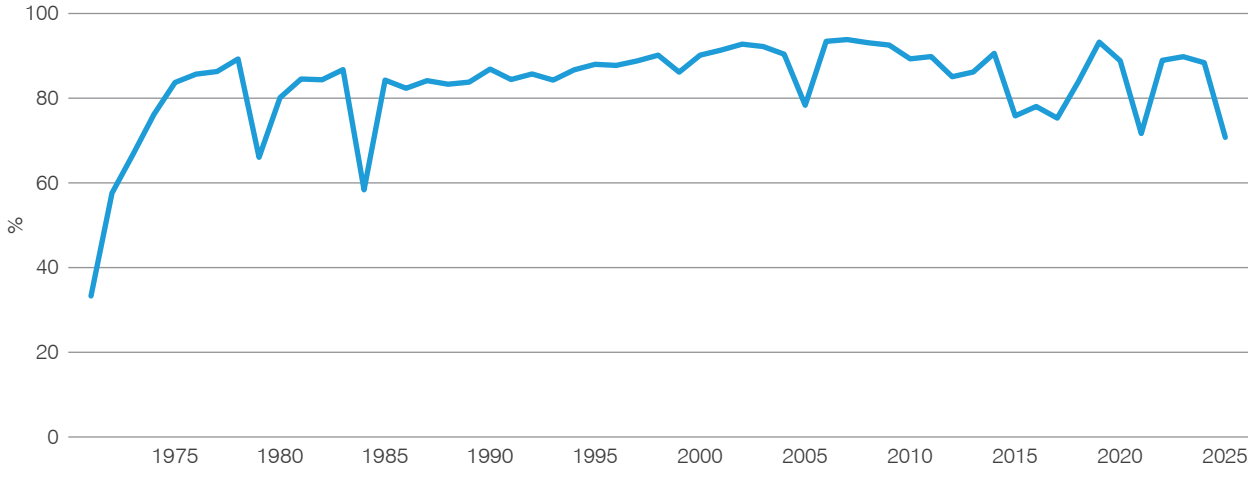
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
4	2973	3105	0	-	1036

Figure Ch.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Ch.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

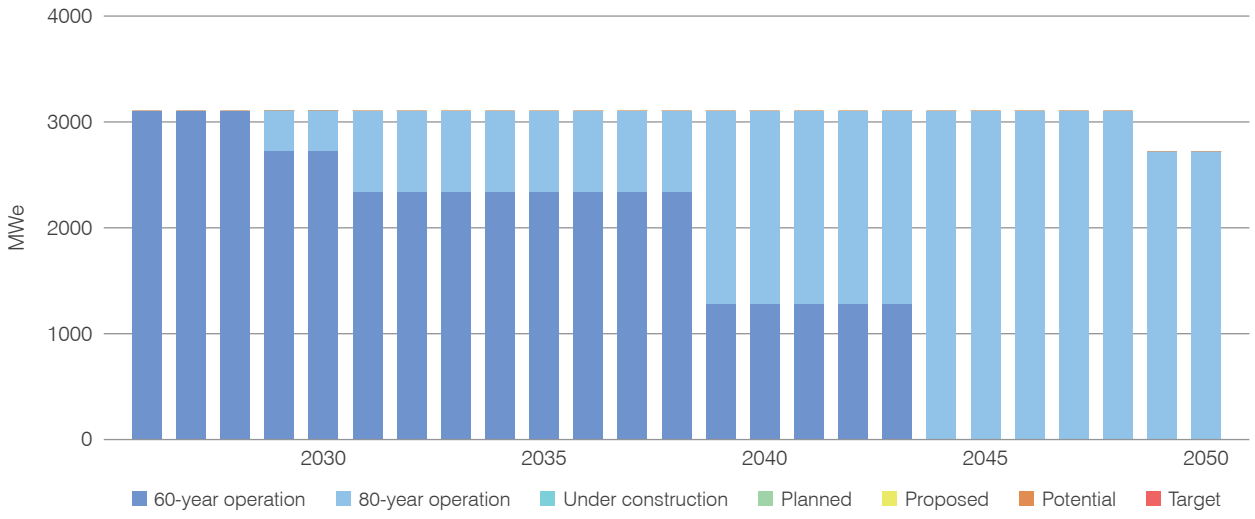
In May 2011, following the Fukushima Daiichi accident in Japan, the Swiss federal government declared that the country's nuclear power plants would gradually be phased out. In June 2026 parliament approved a revision to the Nuclear Energy Act that removes the country's ban on the construction of new nuclear power plants. A referendum campaign against the revision has been launched. If approved the referendum will take place in 2027.

Table Ch.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	2725	-	-	-	-	-	-	2725

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Ch.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

In May 2011, following the Fukushima Daiichi accident in Japan, the Swiss federal government declared that the country's nuclear power plants would gradually be phased out. In June 2026 parliament approved a revision to the Nuclear Energy Act that removes the country's ban on the construction of new nuclear power plants. A referendum campaign against the revision has been launched. If approved the referendum will take place in 2027.

Country Category	Maintainer
Policy Framework Readiness	Low-Moderate The new build prohibition was repealed in June 2026 and government policy now seeks to keep nuclear available as a long-term option, with authorization conditional on secured financing. However, a referendum on that policy change is pending.
Institutional & Infrastructure Readiness	Moderate Switzerland has experienced operators and regulator, strong research capability, mature long-term operation processes and spent fuel interim storage.
Programme & Project Development Readiness	Very Low The ban on new nuclear construction has only recently been lifted. In its May 2026 report, the Federal Council said the focus was on long-term operation, emphasizing that there are no immediate construction projects planned.
Target Achievability	N/A There is no quantified government new build capacity target against which delivery can yet be assessed.

Thailand

Nuclear policy and outlook

Thailand does not currently have nuclear power plants but has a long history of nuclear research and development. In its draft Power Development Plan 2024-2037 the Thai Ministry of Energy proposed commissioning two 300 MWe SMRs by 2037, one in the north of the country, and one in the south.

The draft PDP was never approved by the cabinet and in September 2026, the Ministry of Energy moved on to a successor framework – the draft Power Development Plan 2026 (PDP 2026), covering 2026-2050. All four options being prepared for the plan include a first 300 MWe SMR in the power system by 2037 and total SMR capacity of about 9000 MWe by 2050, although the final scale of nuclear generation has not been settled.

Several countries are cooperating with the Electricity Generating Authority of Thailand (EGAT) on SMRs and framework agreements with China, South Korea and the USA have been signed.

In September 2026 EGAT signed a grant agreement with the US Trade and Development Agency for a feasibility study on about 600 MWe of US SMR technology. The study will help assess potential sites, costs and regulatory steps, and will consider designs from seven US companies: GE Hitachi, Holtec, Kairos Power, NuScale, TerraPower, Westinghouse and X-energy.

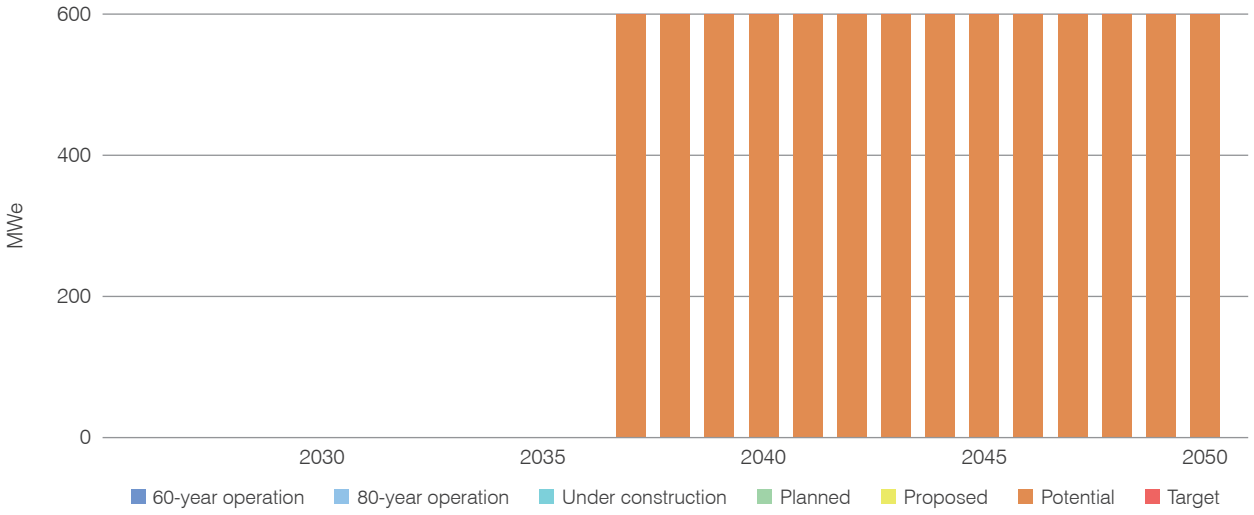
Also in September 2026, the Nuclear Energy for Peace Commission, Thailand's national nuclear policy body, approved a regulatory policy framework for SMRs. In addition, the country's nuclear regulator has said it is preparing regulatory infrastructure for a longer-term scenario of up to 9000 MWe of SMR capacity.

Table Th.1 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	-	-	-	-	600	600	-	600

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Th.1 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Thailand has moved nuclear energy back into national planning, with SMRs included in every option of the draft PDP 2026 and a regulatory policy framework approved in September 2026. No firm decision has been made to build a plant.

Country Category	Candidate
Policy Framework Readiness	Low Nuclear has returned strongly to government planning; the draft PDP 2026 includes SMRs in all four options and an SMR regulatory policy framework was approved in September 2026. However, the new plan has not yet been approved.
Institutional & Infrastructure Readiness	Low-Moderate Thailand has an established regulator, nuclear legislation, research reactor experience, safeguards arrangements and previous IAEA infrastructure work. SMR-specific regulation, workforce capability and licensing capacity are still being developed.
Programme & Project Development Readiness	Low EGAT has established a dedicated SMR unit, is undertaking pre-feasibility studies and international cooperation, and has secured US funding for a feasibility study, but there is no selected site or vendor.
Target Achievability	Very Low The draft PDP 2026 objective of a first 300 MWe SMR by 2037 and about 9000 MWe by 2050 is substantially ahead of present project maturity.

Türkiye

Current operations

Türkiye has no operable reactors. Four VVER-1200 units are under construction at Akkuyu, under Rosatom's first-ever build-own-operate (BOO) contract. Construction of unit 1 began in April 2018. The four units are scheduled to start up sequentially over 2026-2028.

Table Tr.1 Nuclear capacity status (as of 1 October 2026)

Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
-	-	-	4	4800	-

Nuclear policy and outlook

Türkiye aims for 20,000 MWe of nuclear capacity by 2050, supporting its carbon-neutrality goal for 2053. In November 2025 the energy minister set out a 2050 target of 12 large reactors (four at Akkuyu, the rest at Sinop and in Thrace) and 5000 MWe of SMRs.

Inceburun, Sinop, is the location for the planned second plant. The Nuclear Regulatory Authority (NDK) approved the site in April 2024, but no partner or technology has been chosen. TÜNAŞ, the nuclear subsidiary of state generator EUAS, has signed initial agreements with Kepco and Candu Energy.

Discussions are underway with Chinese companies on a third plant in Kırklareli province in Thrace.

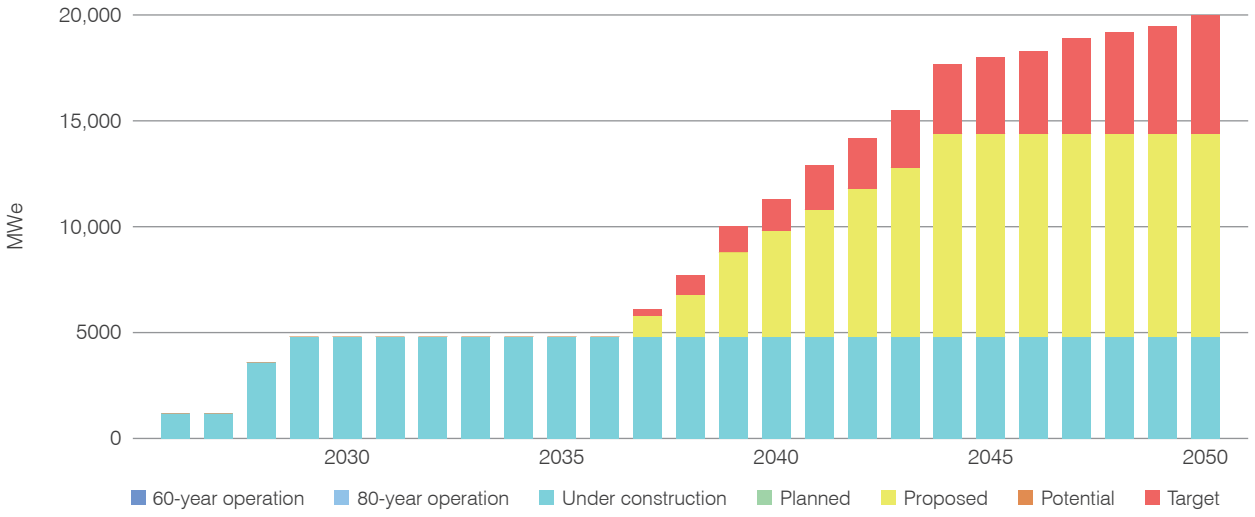
Regarding SMRs, in March 2020, EUAS signed a memorandum of understanding with Rolls-Royce to evaluate their applicability in Türkiye. In September 2026 the US Trade and Development Agency signed an agreement with TÜNAŞ to evaluate SMR designs from four US companies, as well as five advanced US reactor designs.

Table Ar.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	-	4800	-	9600	-	20,000	5600	20,000

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Tu.1 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Türkiye's first plant, Akkuyu, is approaching start-up. Realization of the 20,000 MWe ambition depends on Sinop and Thrace, where no partner or technology has been chosen.

Country Category	Newcomer
Policy Framework Readiness	Moderate-High Türkiye has a 20,000 MWe nuclear capacity target for 2050. Construction on Akkuyu is at an advanced stage, but progress on the second and third sites is at a very early stage.
Institutional & Infrastructure Readiness	Moderate-High Türkiye has a regulator and trained workforce and will soon be gaining experience of commercial reactor operation, but depends heavily on Russian capability at Akkuyu.
Programme & Project Development Readiness	Moderate-High Four reactors are under construction, and the first unit is due to commence operation by the end of 2026. However, Sinop has no partner, technology or financing arrangement, and Thrace and the SMR programme are at pre-project stages.
Target Achievability	Moderate-High Completion of Akkuyu is highly likely. The further 15,200 MWe needed for 20,000 MWe is uncommitted.

Uganda

Nuclear policy and outlook

The Energy Policy for Uganda 2023 sets a long-term generation capacity of 52,481 MWe by 2040, of which 24,000 MWe would come from nuclear power.

The policy's nuclear roadmap comprises four plants totalling about 24,400 MWe: Buyende (six reactors of 1400 MWe), Nakasongola (6x1200 MWe), Kiruhura (4x1200 MWe) and Lamwo (4x1000 MWe). Buyende would be first, and is a flagship project of the fourth National Development Plan (NDP IV).

In August 2023 President Museveni announced that Russia and South Korea had been selected to build two nuclear power plants with a combined capacity of 15 GWe.

In May 2025 the Ministry of Energy and Mineral Development signed a contract with Korea Hydro & Nuclear Power (KHNP) for a 26-month evaluation, to July 2027, of the proposed Buyende site. About 30 square kilometres of land is being acquired at Kasaato Hill in Kidera, Buyende district on the shores of Lake Kyoga and a resettlement action plan is being prepared.

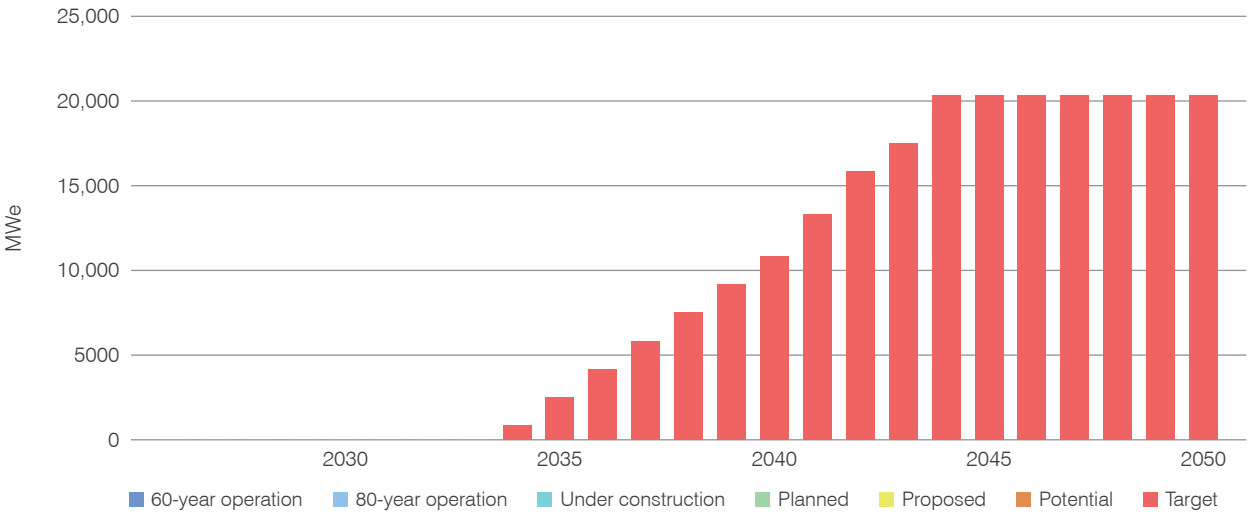
Draft amendments to the Atomic Energy Act of 2008 would strengthen provisions on nuclear safety, security, liability and emergency preparedness. A research reactor is planned at Soroti.

Table Ug.1 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	-	-	-	-	-	24,400	24,400	24,400

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Ug.1 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

The Energy Policy for Uganda 2023 provides a defined 24 GWe nuclear roadmap across four plants, but only Buyende has progressed, and its site evaluation runs to July 2027. A reactor design, vendor, financing and a strengthened nuclear law are still needed, and the stated dates for the first plant are well ahead of delivery capability.

Country Category	Candidate
Policy Framework Readiness	Low-Moderate Nuclear is embedded in Energy Policy for Uganda 2023 and NDP IV, which set a 24 GWe objective across four named plants. Only the Buyende project has a defined site, and the scale and timetable are well beyond demonstrated delivery capability.
Institutional & Infrastructure Readiness	Low The government of Uganda, in conjunction with the IAEA, has drafted a new Atomic Energy Bill to replace the Atomic Energy Act of 2008 to support the planned nuclear programme. Commercial reactor regulation is under development but no owner/operator has been established.
Programme & Project Development Readiness	Low Only Buyende has progressed: land is being acquired and KHNP is evaluating the site to July 2027. Nevertheless, the project does not yet have a licensed site, chosen reactor design, vendor award or financing plan.
Target Achievability	Very Low None of the near-term targets are compatible with a site evaluation running to mid-2027 and no design, vendor, or financing is in place. The 24 GWe objective for 2040 across four plants is more demanding still.

Ukraine

Current operations

Ukraine has 15 operable reactors at four plants, Rivne, Khmelnitski, South Ukraine and Zaporizhzhia. All are VVER types: two upgraded 440 MWe V-312 units and 13 of the larger VVER-1000.

The six units at Zaporizhzhia have been under Russian military control since March 2022, have generated no electricity since September 2022 and have been in cold shutdown since April 2024. The other nine reactors remain under Ukrainian control. Despite the shutdown at Zaporizhzhia, Ukraine's other nuclear plants continue to provide around half of its electricity supply.

The original design life for Ukraine's reactors was 30 years. The regulator, SNRIU, extended Rivne 1 and 2 to December 2030 and December 2031 and Rivne 3 by 20 years in July 2018. Energoatom also plans 20-year extensions for the 11 oldest 1000 MWe reactors.

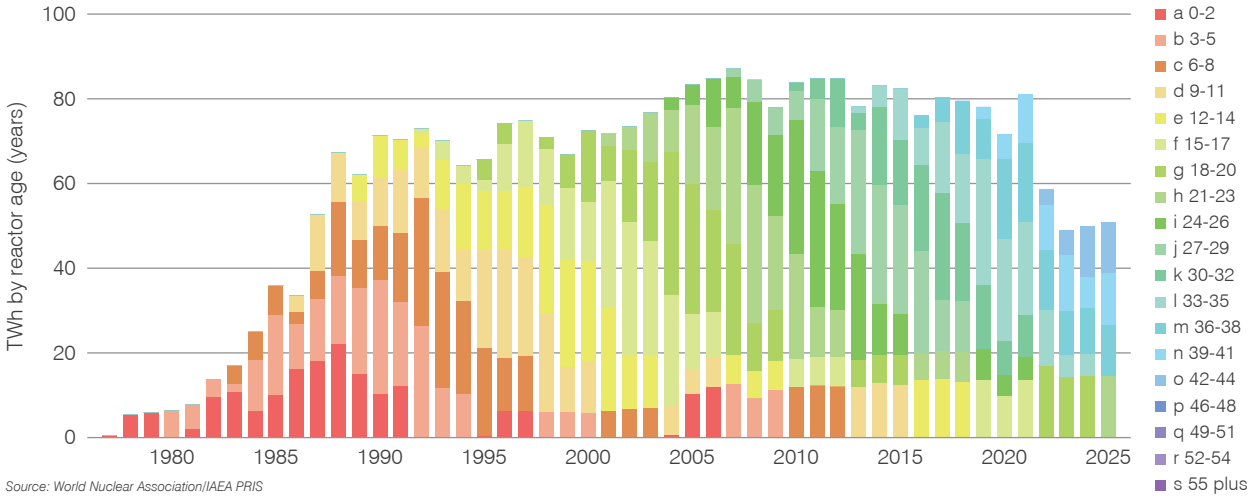
Construction of Khmelnitski 3 and 4 began in 1986 and 1987 but has been suspended since 1990, with unit 3 reportedly around 80% complete and unit 4 about 25%. In February 2025 Ukraine's parliament approved the purchase of equipment from Bulgaria's cancelled Belene project to complete them, and the president signed the law in March, but Bulgaria reversed its decision in April 2025.

Ukraine has ended all use of Russian nuclear fuel, with uranium hexafluoride now supplied by Cameco and fuel manufactured by Westinghouse Electric Sweden.

Table Ua.1 Nuclear capacity status (as of 1 October 2026)

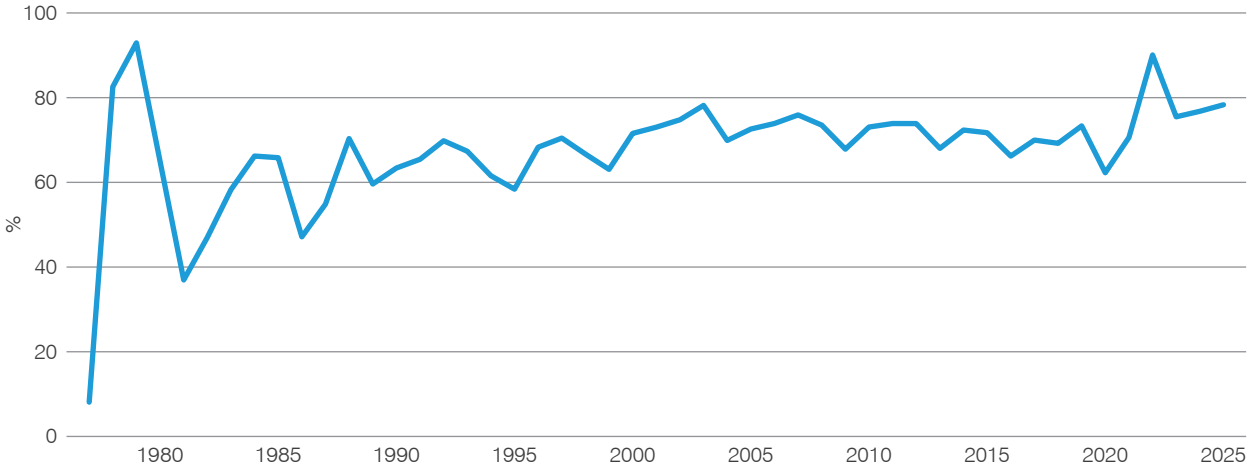
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
15	13,107	13,835	2	2178	2832

Figure Ua.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Ua.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

In April 2026, First Deputy Prime Minister and Minister of Energy Denys Shmyhal stated Ukraine's ambition was to reach 25 GWe of nominal nuclear generating capacity by 2050.

In June 2022 Energoatom and Westinghouse signed an agreement to construct nine AP1000 units, adding 11,250 MWe. These could include two units at Khmelnitski, one or more at Chyhyryn and two at South Ukraine. Equipment for Khmelnitski 5 was contracted in December 2023, and in August 2024 Energoatom said land had been transferred to it for a possible four-unit plant at Chyhyryn.

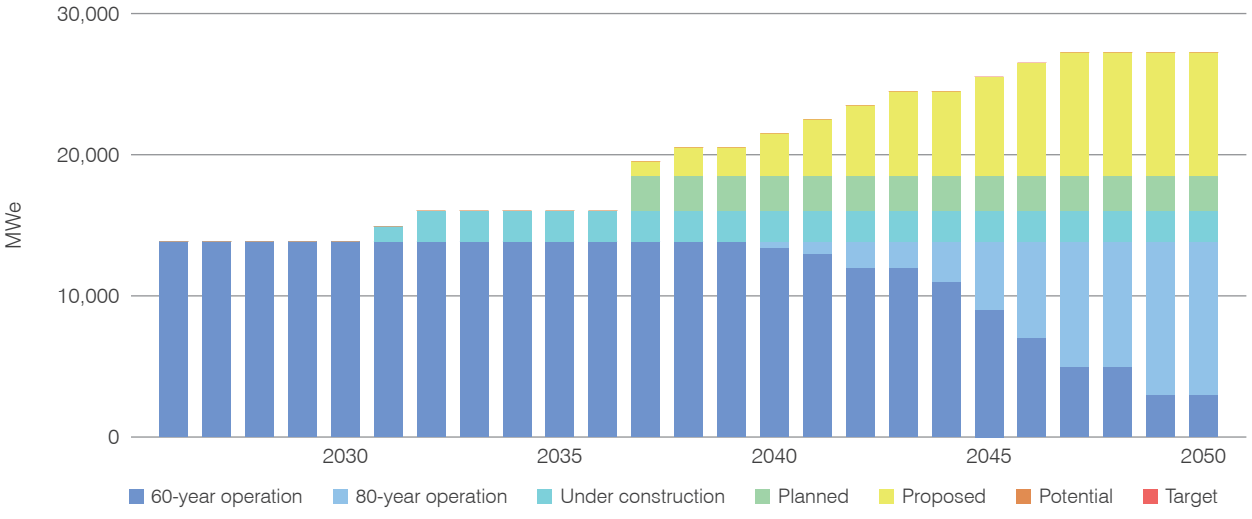
Ukraine has also signed agreements with Holtec, NuScale and Westinghouse regarding potential deployment of SMRs.

Table Ua.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
3000	10,835	2178	2500	8750	-	25,000	0	27,263

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Ua.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Ukraine has deep nuclear capability and a defined pathway to 25 GWe, but the war, the occupation of Zaporizhzhia and Bulgaria's reversal on the Belene equipment leave new build at a pre-investment stage.

Country Category	Restarter
Policy Framework Readiness	Moderate-High Nuclear remains central to the 2050 energy strategy. A 25 GWe objective, Khmelnitski 3-6 and the nine-AP1000 partnership give a defined pathway, and fuel-cycle localisation is progressing. War and incomplete project legislation affect execution.
Institutional & Infrastructure Readiness	Moderate Experienced operator and regulator, VVER expertise, extensive nuclear engineering capability, Westinghouse fuel experience, domestic uranium resources and operational central spent-fuel storage.
Programme & Project Development Readiness	Low Substantial engineering and environmental work is under way, but Khmelnitski 3-4 construction remains suspended, and the AP1000 programme is pre-FID.
Target Achievability	Low Reaching 25 GWe requires recovery or replacement of Zaporizhzhia capacity, completion of Khmelnitski 3-4 and a large AP1000 fleet. The war, financing needs and project maturity make the strategic timeframe highly uncertain.

United Arab Emirates

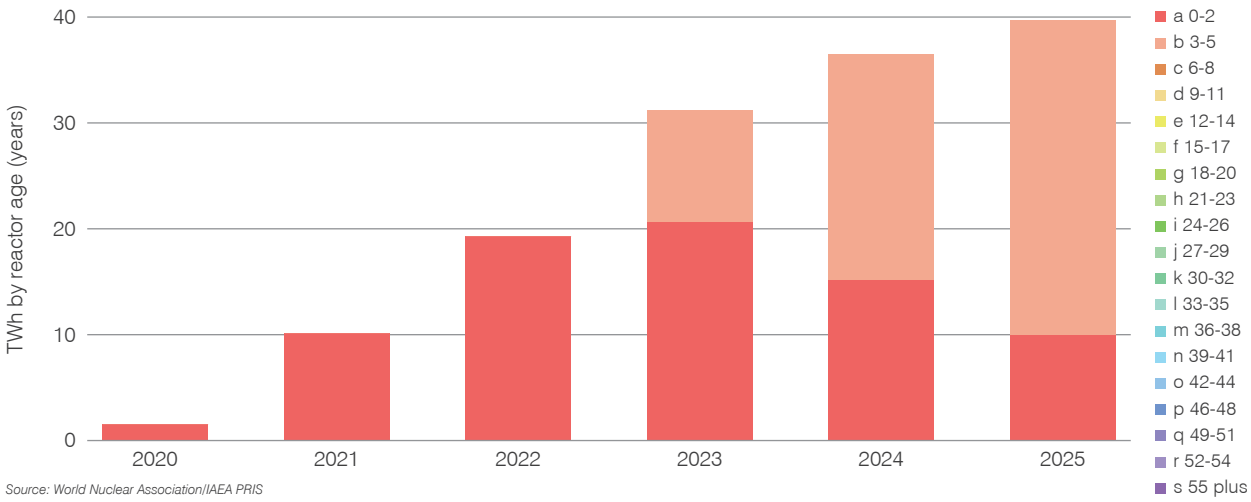
Current operations

The UAE has four operable reactors at Barakah. Unit 1 was connected to the grid in August 2020, unit 2 in September 2021, unit 3 in October 2022 and unit 4 in March 2024. They generate about 40 TWh a year, around a quarter of the UAE's electricity.

Table Ae.1 Nuclear capacity status (as of 1 October 2026)

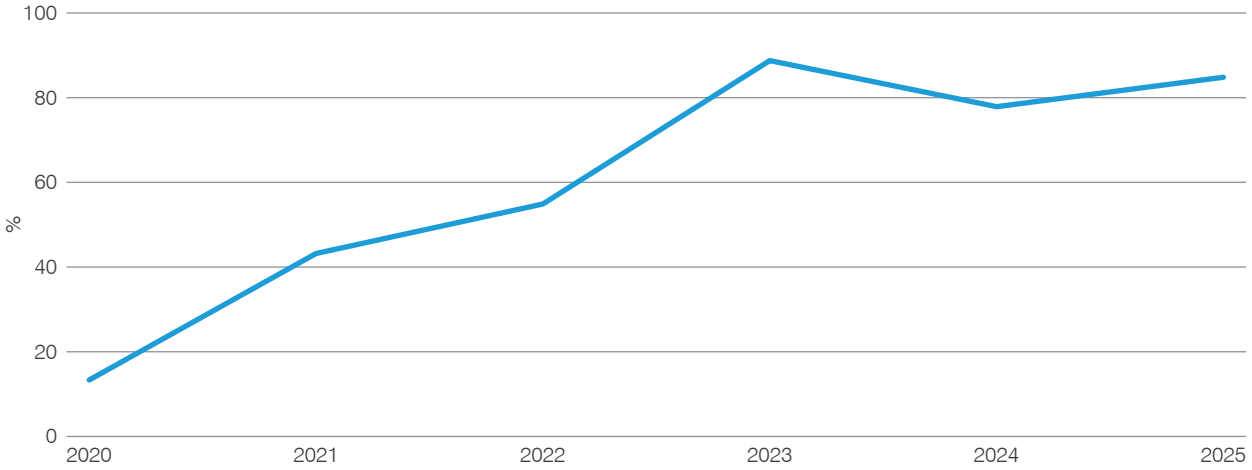
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
4	5348	5668	-	-	131

Figure Ae.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Ae.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

The UAE Energy Strategy 2050, updated in July 2023 in line with the country's net-zero 2050 commitment, aims for nuclear to provide 6% of total energy supply by 2050.

In 2023 and 2024 there were reports of proposals to construct further units at Barakah, but there has been no official announcement.

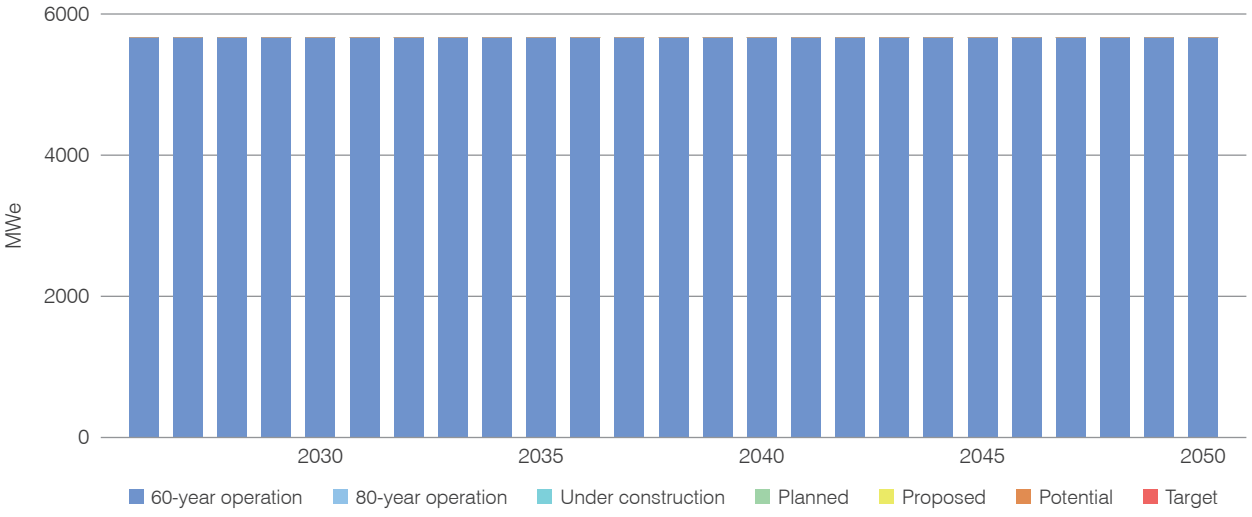
In November 2024 ENEC and the government-owned energy group ADNOC agreed to evaluate advanced nuclear technology, such as SMRs, and the use of excess heat from Barakah in ADNOC's oil and gas operations.

Table Ae.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
5668	-	-	-	-	-	-	-	5668

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Ae.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

The UAE completed its four-unit Barakah programme in 2024, and the plant now supplies about a quarter of its electricity. Nuclear policy is firmly established, but no post-Barakah reactor programme has been quantified or approved.

Country Category	Newcomer
Policy Framework Readiness	Moderate-High Nuclear is firmly embedded in national clean-energy policy, but there is no quantified or approved post-Barakah reactor programme.
Institutional & Infrastructure Readiness	High Four-unit construction, commissioning and operating experience, mature regulation, strong international partnerships and an established workforce.
Programme & Project Development Readiness	Low-Moderate Project-delivery capability is strong, but there is no firm proposal for additional reactors. ENEC-ADNOC work is at evaluation stage.
Target Achievability	N/A The original Barakah programme has been fully delivered. No comparable quantified second-stage objective yet exists.

United Kingdom

Current operations

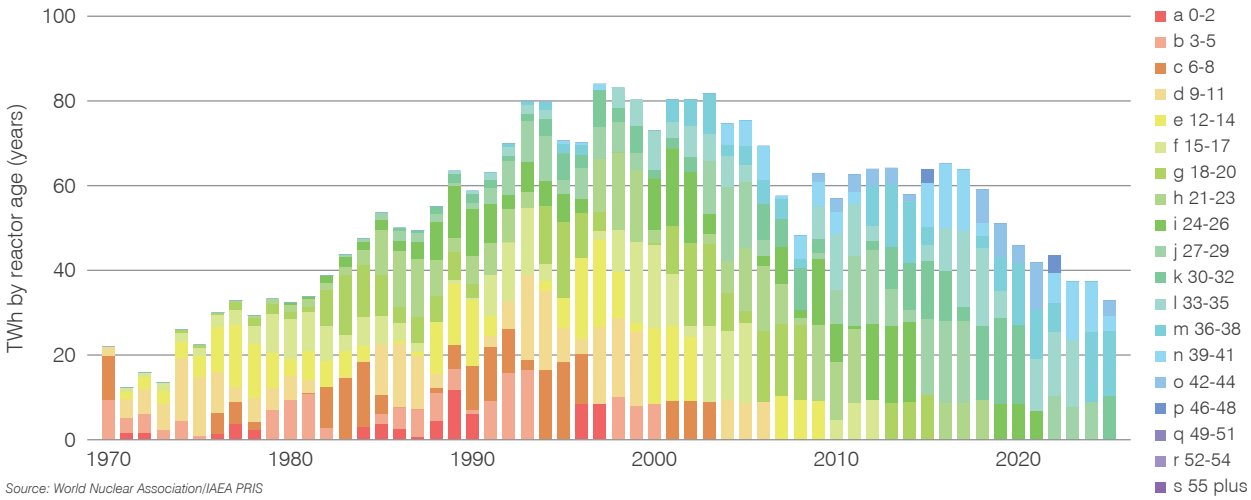
The UK has nine operable reactors at five sites, with a net capacity of about 5900 MWe: eight advanced gas-cooled reactors (AGRs) and the Sizewell B pressurized water reactor. Two EPRs are under construction at Hinkley Point C, with start-up of the first unit expected around 2030.

Gradual cracking of the graphite bricks in the AGR moderators limits their operating lifetimes. All eight AGRs (two reactors each at Hartlepool, Heysham I, Heysham II and Torness) are due to close in March 2030. EDF has said it aims to run Heysham II and Torness beyond 2030 if inspections allow.

Table Uk.1 Nuclear capacity status (as of 1 October 2026)

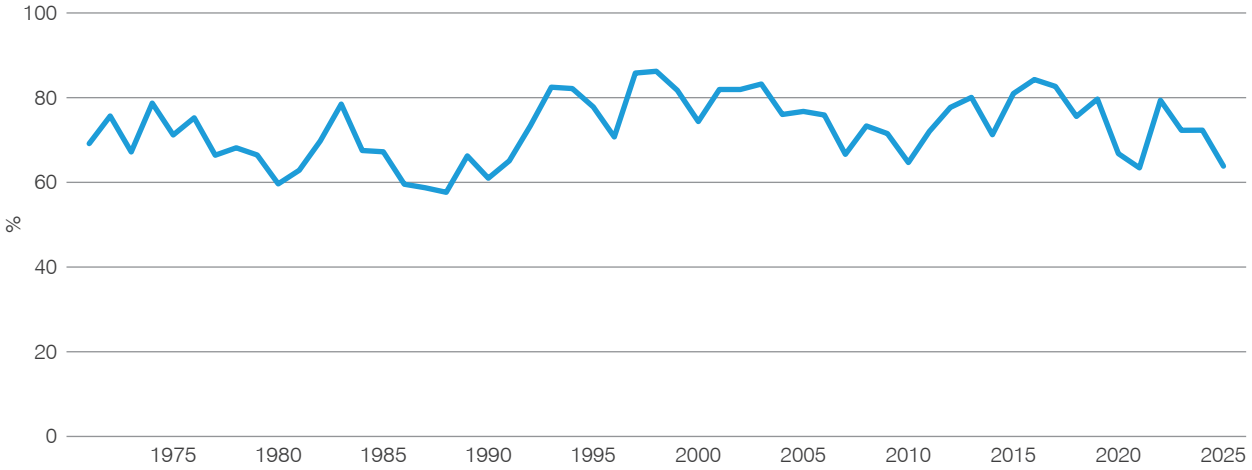
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
9	5883	6534	2	3440	2879

Figure Uk.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Uk.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

A goal of up to 24 GWe of nuclear capacity was set by the previous government in 2022. The current Labour government, in office since July 2024, has not formally recommitted to it.

Hinkley Point C, in Somerset, is under construction under a contract for difference, with EDF now scheduling the first of the two EPRs to start up in 2030.

Sizewell C, in Suffolk, which will also consist of two EPRs, reached a final investment decision on 22 July 2025 and uses a regulated asset base model.

Rolls-Royce SMR was selected as preferred bidder in June 2025 to deliver the UK's first SMR, and in November 2025 the government named Wylfa, on Ynys Môn (Anglesey), as the site for up to three 498 MWe units, forming the Gwyndod Power Station. Great British Energy - Nuclear (GBE-N) - the UK's state nuclear delivery body - assesses the site as able to host up to eight. First grid connection is targeted for the mid-2030s.

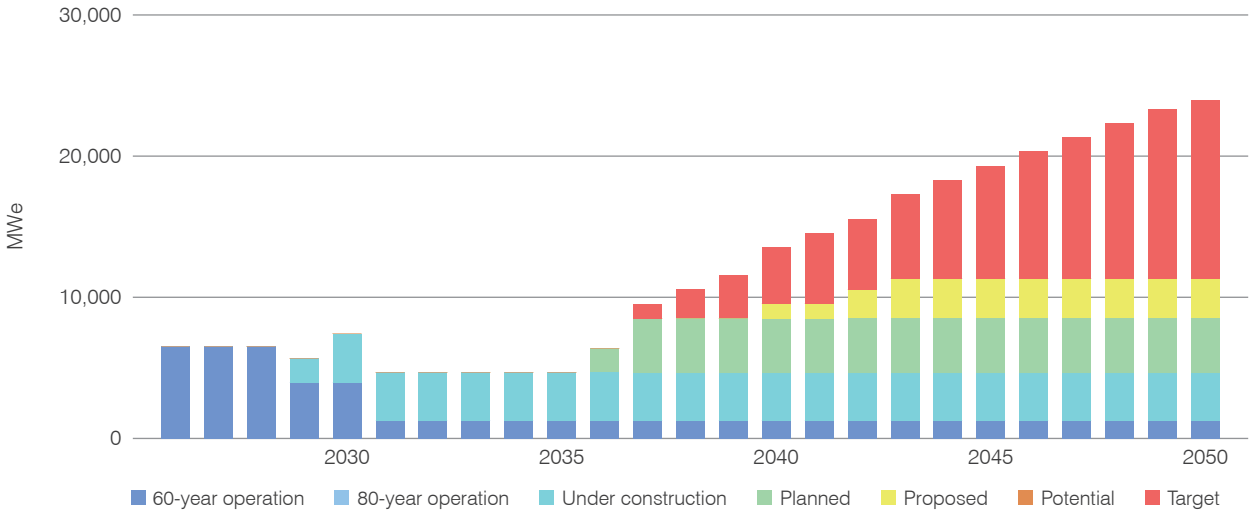
Centrica and X-energy plan up to 6 GWe of Xe-100 high temperature gas-cooled reactors in the UK, with Hartlepool the preferred first site for a 12-unit, 960 MWe plant. The Xe-100 entered the UK's Generic Design Assessment process in September 2026.

Table Uk.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
1250	-	3440	3838	2796	-	24,000	12,676	24,000

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Uk.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

The UK has a funded new build programme: Hinkley Point C is under construction; Sizewell C has reached FID; and contracts for pre-construction development work are in place for up to three SMR units at Wylfa.

Country Category	Expander
Policy Framework Readiness	High The UK has a delivery body (GBE-N) for new nuclear, a financing model for the Sizewell C project, a development contract for the Wylfa SMR programme, an advanced nuclear framework, a fuel strategy and substantial committed public investment.
Institutional & Infrastructure Readiness	High The UK has an experienced regulator and plant operators, the state-owned nuclear delivery vehicle GBE-N, an active new build workforce, extensive engineering and fuel cycle capability, national laboratories, and established waste and decommissioning institutions.
Programme & Project Development Readiness	Moderate-High Two EPRs are under construction, Sizewell C has reached FID with substantial site works underway, and site development work at Wylfa has begun.
Target Achievability	Low-Moderate The path to significantly more nuclear capacity is now credible, but a substantial proportion of the prior administration's target of up to 24 GWe remains uncommitted. (Assessed on the basis of the previous government's target.)

United States of America

Current operations

The USA has 94 operable reactors, most of which were built between 1967 and 1990. Before construction commenced in 2013 on Vogtle 3&4, which came online in 2023 and 2024, the last time a reactor commenced construction was in 1977.

Almost all reactors have had their 40-year licences extended to 60 years. The Nuclear Regulatory Commission (NRC) is considering subsequent licence renewals to 80 years. As of October 2026, subsequent renewals for 25 reactors had been approved.

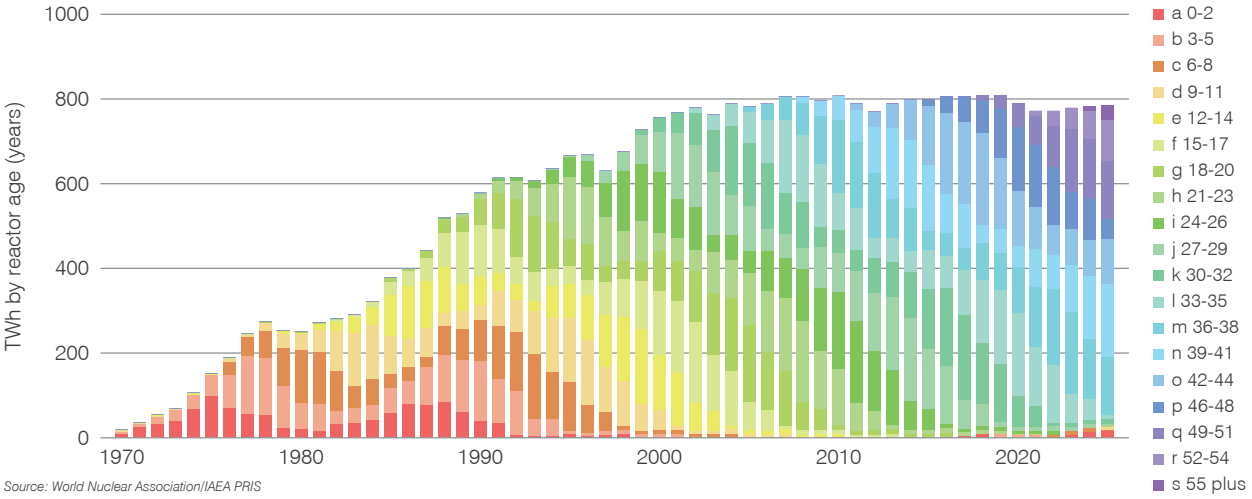
Palisades, which shut down in 2022, is expected to be restarted in 2027. It would be the first restart of a plant that had entered decommissioning.

Constellation's restart of the 880 MWe Crane Clean Energy Center (formerly Three Mile Island 1), backed by Microsoft's 20-year power purchase agreement, is targeted for 2027-2028. In October 2025 NextEra and Google signed a 25-year agreement to restart Duane Arnold, targeted for early 2029.

Table Us.1 Nuclear capacity status (as of 1 October 2026)

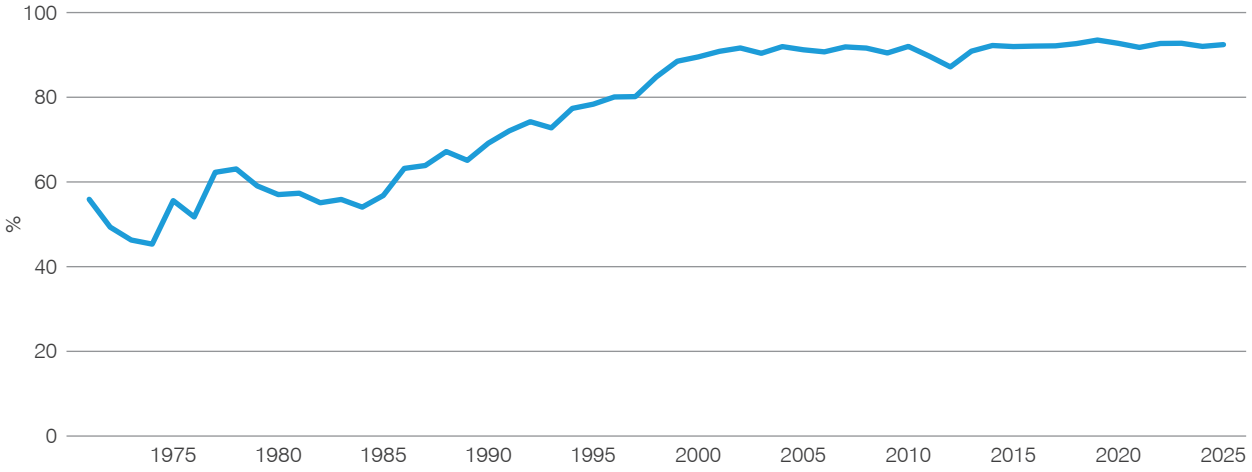
Operable reactors	Operable reactors net capacity (MWe)	Operable reactors gross capacity (MWe)	Reactors under construction	Reactors under construction gross capacity (MWe)	Cumulative carbon dioxide emissions avoided 1970-2025 (cf. coal) ($MtCO_2$)
94	96,952	102,475	-	-	30,274

Figure Us.1 Output by operating lifetime of reactors



Source: World Nuclear Association/IAEA PRIS

Figure Us.2 Average capacity factor



Source: World Nuclear Association

Nuclear policy and outlook

In May 2025 President Trump signed executive orders aiming to raise US nuclear capacity to 400 GWe by 2050, with 5 GWe of uprates and 10 large reactors under construction by 2030. They also target fuel cycle expansion, faster NRC licensing and, through a Department of Energy (DOE) pilot programme, criticality of at least three test reactors by 4 July 2026. Four reached it by the deadline: Antares, Valar Atomics, Deployable Energy and Aalo Atomics.

In October 2025 a strategic framework agreement was announced between the US Government and Westinghouse's owners, Brookfield and Cameco.. The agreement provides for the US Government to arrange financing and facilitate the permitting and approvals for new Westinghouse reactors, with an aggregate investment value of at least $80 billion, including near-term financing of long lead time items.

In June 2026 the DOE announced conditional commitments for up to $17.5 billion in loans for long-lead procurement for up to five two-unit AP1000 projects. In September 2026 the USA and South Korea agreed a non-binding framework of up to $120 billion, for six AP1000s and two APR-1400s on federal sites, with up to $10 billion to be advanced by the end of the year for long-lead items, subject to commercial-reasonableness review.

The NRC accepted the first two parts of a phased combined licence application from Fermi America for four AP1000s in Carson County, Texas in September 2025. Fermi America aims for first operation in 2032. In December 2025 Brookfield and Santee Cooper signed a memorandum of understanding on completing the two abandoned V.C. Summer AP1000 units.

In March 2026 the NRC issued TerraPower a construction permit for a Natrium reactor plant at Kemmerer 1, on a former coal plant site in Wyoming – the first construction permit for a commercial non-light-water reactor in more than 50 years. TerraPower targets completion in 2030 and operation in 2031.

Kairos Power is developing its Fluoride Salt-Cooled High-Temperature Reactor (KP-FHR) in Oak Ridge, Tennessee. Construction of its 35 MWt Hermes 1 test reactor commenced in mid-2005 and in April 2026, Kairos broke ground on its two-reactor (2x 35 MWt) Hermes 2 demonstration plant. The electrical capacity of Hermes 2 was originally planned as approximately 20 MWe but has been uprated to 50 MWe following a three-way agreement in August 2025 between Kairos Power, Google and TVA for Hermes 2 to supply the TVA power grid to help power Google's regional data centres.

In September 2026 the NRC issued TVA a construction permit for a BWRX-300 at Clinch River, Tennessee, the first US permit for that design. The first part of another construction permit application, for a BWRX-300 in Texas, was submitted by Blue Energy in September 2026.

Holtec submitted the first part of a construction permit application for two SMR-300s at Palisades in December 2025. The company intends to commence full-scale construction once the existing unit at the site has been restarted.

Dow and X-energy submitted a construction permit application in March 2025 for four 80 MWe Xe-100s at Long Mott, Texas, and Energy Northwest has a joint development agreement with X-energy for up to 12 Xe-100s.

Technology companies are now contracting for existing and new nuclear capacity. Amazon's expanded agreement with Talen provides up to 1920 MWe from Susquehanna through 2042, reaching full volume by 2032. As well as the Hermes 2 power purchase agreement noted above, Kairos Power signed an earlier agreement in October 2004 with Google for up to 500 MWe of capacity by 2035. In January 2026 Meta announced agreements covering up to 6.6 GWe by 2035: 20-year agreements with Vistra for 2176 MWe from Perry and Davis-Besse, plus output from uprates; support for two TerraPower Natrium units totalling 690 MWe by 2032, with rights to further units; and a 1.2 GWe Oklo campus in Pike County, Ohio. This adds to Meta's 20-year agreement with Constellation of June 2025. Oklo also holds a master power agreement with Switch that aims for 12 GWe by 2044.

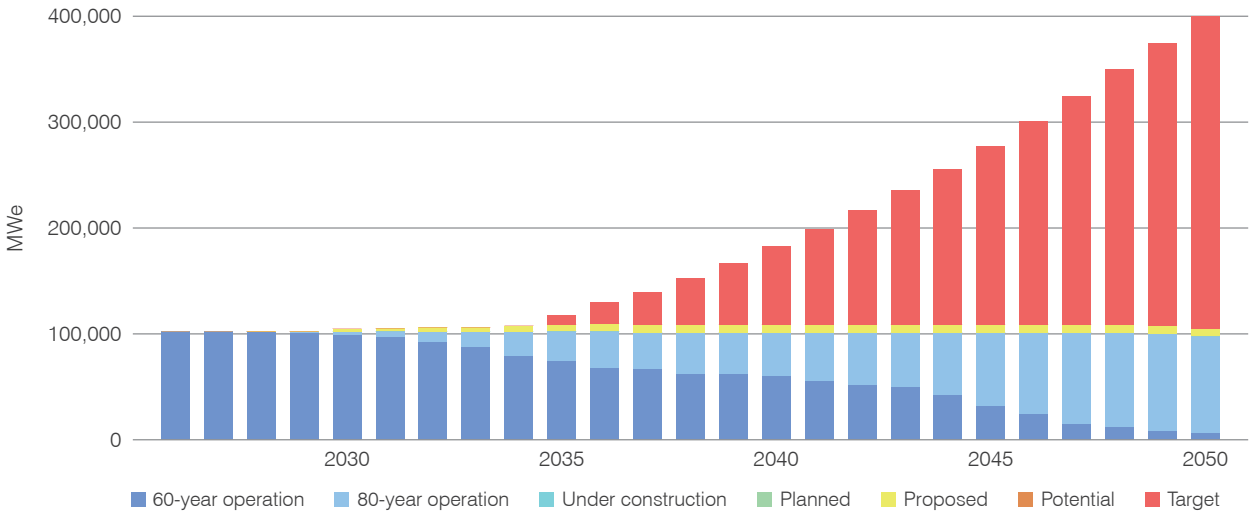
Oklo's agreement with Switch is based on its Aurora Powerhouse sodium-cooled fast reactor of up to 75 MWe. Development activities on a demonstration unit of 15 MWe, as well as a fuel fabrication facility, are underway at Idaho National Laboratory, with operation targeted for 2028.

Table Us.2 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
6178	91,417	-	-	7540	-	400,000	294,865	400,000

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Us.3 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

The USA has a deep nuclear base, and commercial demand is now underwriting restarts, uprates and new reactors. No large reactor has started. However, almost 300 GWe of the 400 GWe objective has no attributable project.

Country Category	Expander
Policy Framework Readiness	Moderate-High The government provides significant backing for new nuclear power projects through direct grants, loan guarantees and tax credits. Government funding has also been made available to establish domestic high assay low-enriched uranium (HALEU) fuel cycle services. In addition, legislation to streamline NRC licensing has been introduced.
Institutional & Infrastructure Readiness	Moderate-High The USA retains a deep operating, regulatory, research, engineering and industrial base, although supply chain and advanced fuel capacity need expansion.
Programme & Project Development Readiness	Moderate Restarts are advancing and hyperscaler contracts underpin existing, restarting and new capacity. Advanced reactors are in permit review, but no large reactor has recently started construction.
Target Achievability	Low The direction is strong, but almost 300 GWe of the 400 GWe objective has no attributable project, and the required 2030-50 deployment rate is exceptionally demanding.

Uzbekistan

Nuclear policy and outlook

During a May 2024 state visit to Uzbekistan by Russian President Vladimir Putin, a contract was signed for Rosatom to construct a six-unit small modular reactor plant in the Jizzakh region, based on the 55 MWe RITM-200N. In September 2025 an agreement was signed confirming that the Jizzakh project would now consist of two VVER-1000 units and two RITM-200N units, together with key terms for future fuel supply contracts. Excavation for the first RITM-200N reactor building began in October 2025 and a nuclear site licence was granted in March 2026.

In June 2026 the Committee for Industrial, Radiation and Nuclear Safety issued a construction licence for the first RITM-200N unit, which is scheduled to reach criticality in late 2029. The two VVER-1000 units are planned to follow in about 2033 and 2035.

Table Uz.1 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
0	0	0	2110	-	-	-	-	2110

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Uz.1 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Uzbekistan has strong political backing and its first SMR is about to start construction, but the country has no experience of licensing or operating power reactors.

Country Category	Newcomer
Policy Framework Readiness	High Government commitment has moved through legislation, contract, site, public consultation and an enlarged first plant configuration.
Institutional & Infrastructure Readiness	Moderate-High Uzbekistan has a dedicated programme agency, independent regulatory body, but no commercial power reactor operating experience.
Programme & Project Development Readiness	High Construction of the first RITM-200N unit was approved in June 2026 and site work has commenced.
Target Achievability	Moderate-High The complete 2110 GWe project is now agreed and preliminary construction has begun, although the 2029-35 deadlines are demanding. In addition, although a financial framework in place, full project financing is still in progress.

Vietnam

Nuclear policy and outlook

In November 2024 the National Assembly voted to resume the Ninh Thuận nuclear power project, cancelled in 2016. It comprises two plants, Ninh Thuận I in Phuoc Dinh and Ninh Thuận II in Vinh Hai, each of at least 2000 MWe.

The April 2025 revision of the National Power Development Plan VIII (PDP8) anticipates 4000-6400 MWe of nuclear capacity coming online at Ninh Thuận I&II in 2030-2035. The revised PDP8 also presents the government's 'vision to 2050', in which nuclear power reaches 10,500-14,000 by 2050.

A March 2026 atomic energy strategy targets completion of both plants by 2035 and a 6-8% nuclear share of generation by 2050.

For Ninh Thuận I, Vietnamese engineering company PECC2 and Rosatom agreed in September 2025 to update the feasibility study. A March 2026 intergovernmental agreement with Russia covers two VVER-1200 units, with Leningrad II as the reference plant; it was ratified in August 2026, and site clearance and population resettlement are underway.

Japan withdrew from the Ninh Thuận II project in January 2026, citing the tight timeline. In April 2026 KEPCO, Korea Eximbank and K-Sure agreed with PetroVietnam to explore Korean financing. A partner is due to be selected in the third quarter of 2026 for commissioning by 2035.

Eight potential sites of 4-6 GWe each have been identified across five central provinces. Beyond Phuoc Dinh and Vinh Hai in Ninh Thuận province, locations under review are in Quang Ngai, Binh Dinh, Phu Yen, and Ha Tinh provinces.

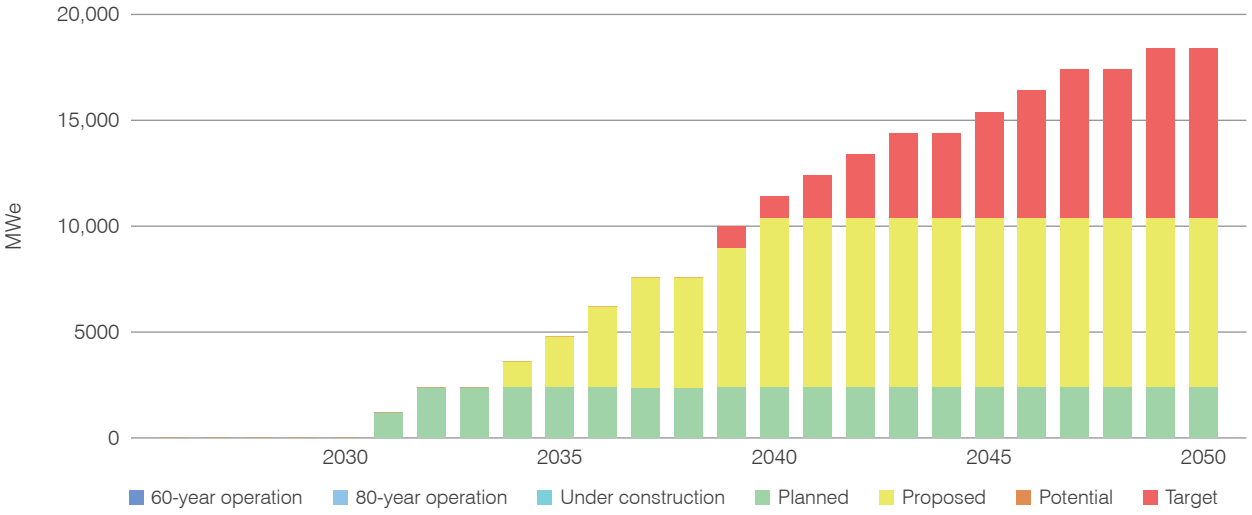
The national atomic energy strategy approved in March 2026 includes a target to implement at least one project using SMR technology by 2035.

Table Vi.1 Contributions to total capacity projection in 2050 (gross)

60 year operation (MWe)	80 year operation (MWe)	Currently under construction capacity (MWe)	Planned capacity (MWe)	Proposed capacity (MWe)	Potential capacity (MWe)	Government capacity target (MWe)	Additional capacity* required to meet government target (MWe)	Total capacity (MWe)
-	-	-	-	6400	-	14,000	7600	14,000

*Capacity additional to operable, under construction, planned, proposed and potential capacities required to meet the government target.

Figure Vi.1 WNOR projection of future capacity



Source: World Nuclear Association

Readiness Assessment

Vietnam has strong policy commitment and solid institutional groundwork. Ninh Thuận I is advancing under the August 2026 agreement with Russia, but Ninh Thuận II lags behind after Japan's withdrawal, so reaching the 2035 target is unrealistic.

Country Category	Restarter
Policy Framework Readiness	Moderate Nuclear is incorporated into the revised PDP8, new Atomic Energy Law, special implementation mechanisms and a quantified multi-unit programme.
Institutional & Infrastructure Readiness	Moderate-High Vietnam has extensive earlier nuclear preparation, established regulator and research infrastructure, and designated project owners. Regulatory capacity, independence and workforce still require substantial strengthening before construction.
Programme & Project Development Readiness	Low-Moderate Ninh Thuận I has a defined owner, site and technology, and an intergovernmental construction agreement with Russia approved by the National Assembly in August 2026; site clearance and contract preparation are active. Ninh Thuận II remains materially less mature, with no partner yet confirmed following Japan's withdrawal, although talks with KEPCO are advancing.
Target Achievability	Moderate Full operation of 4000-6,400 MWe by 2035 is inconsistent with the remaining licensing, financing and construction programme. First nuclear generation in the mid-to-late 2030s is considerably more credible.

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