Korea, Republic of - 2025

PREAMBLE AND SUMMARY

This report provides information on the status and development of nuclear power programmes in the Republic of Korea. This includes factors related to the effective planning, decision making and implementation of the nuclear power programmes that together lead to the safe and economical operation of nuclear power plants (NPPs).

The CNPP summarizes the organizational and industrial aspects of nuclear power programmes and provides information about the relevant legislative, regulatory and international frameworks in the Republic of Korea.

The Republic of Korea has 26 operational nuclear power reactors, which accounted for approximately 31.7% of the total electricity mix in 2024. Two units, Kori-1 and Wolsong-1, have been permanently shut down. Shin Hanul-1 has been operating commercially since 7 December 2022. Shin Hanul-2 started commercial operations on 8 April 2024, with four units currently under construction.

1. COUNTRY ENERGY OVERVIEW

1.1. ENERGY SYSTEM

1.1.1. Energy Policy

In the third Energy Master Plan established in June 2019, which presents energy policy directions up to 2040, the Government of the Republic of Korea commits to advancing the country's energy transition by increasing the share of renewables to 30–35% by 2040. The Government also intended to significantly improve energy efficiency and foster the country's nascent hydrogen industry. In January 2023, the Government of the Republic of Korea announced the 10th Basic Plan for Long-term Electricity Supply and Demand. According to the plan, by 2036, the country will almost quadruple the installed capacity of renewable energy sources, such as solar, wind and hydrogen, to 108.3 GW. The share of renewable energy generation is expected to increase from 8.9% in 2022 to 30.6% in 2036, while that of coal fired power generation is expected to shrink from 32.5% in 2022 to 14.4% in 2036. When compared to the 9th plan, one of the major changes was an increase in the capacity of nuclear power plants (NPPs). The installed capacity target of NPPs in 2030 increased to 28.9GW (which was 20.4GW in the previous plan) and the target for 2036 was set to 31.7GW.

The Republic of Korea has recently strengthened international efforts related to climate change mitigation under the Paris Agreement signed in October 2021. The Government has strengthened its 2030 emissions reduction target by promising to reduce greenhouse gas emissions by 40% of their 2018 level (727.6 Mt CO2-eq.). This is an increase from the earlier goal of 26.3 percent. This commitment also includes limiting carbon emissions to 436.6 Mt CO2-eq by 2030. In March 2023, the Government revised the plan for achieving carbon neutrality by announcing the National Framework Plan for Carbon Neutrality and Green Growth. Although the target for reducing national carbon emissions remained unchanged, there were differences in some sectors. In particular, to enhance the goal of the power generation sector, the emission target was reduced from 149.9 million tons to 145.9 million tons, while also emphasizing the role of nuclear, hydrogen and renewable sources.

1.1.2. Energy Statistics

Table 1 shows the energy reserves of the Republic of Korea as of the end of 2024.

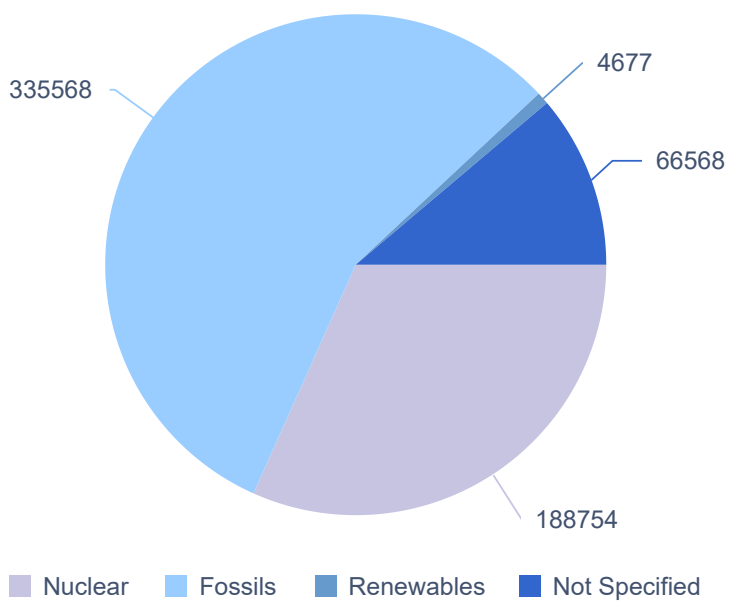
TABLE 1: INSTALLED CAPACITY AND ELECTRICITY PRODUCTION BY SOURCE

Energy Sources [Net]

Energy Sources [Net]	Electricity Supplied		Installed Capacity	
	[GW(e)*h]	Share (%)	[GW(e)]	Share (%)
Total	595567			
Nuclear	188754	31.7		
Fossils	335568	56.3		
---Coal (hard coal, lignite)	167159	28.1		
---Gas	167205	28.1		
---Oil	1204	0.2		
Renewables	4677	0.8		
---Hydro (including tidal and wave)	4677	0.8		
Others	66568	5.6		
---Others	3413	0.6		
---Renewables	63155	10.6		
Total				
Nuclear				
Fossils				
---Coal (hard coal, lignite)				
---Gas				
---Oil				
Renewables				
---Hydro (including tidal and wave)				
Others				
---Others				
---Renewables				

Data as of 2024-12-31 from IAEA Power Reactor Information System

CHART 1: ELECTRICITY PRODUCTION BY SOURCE



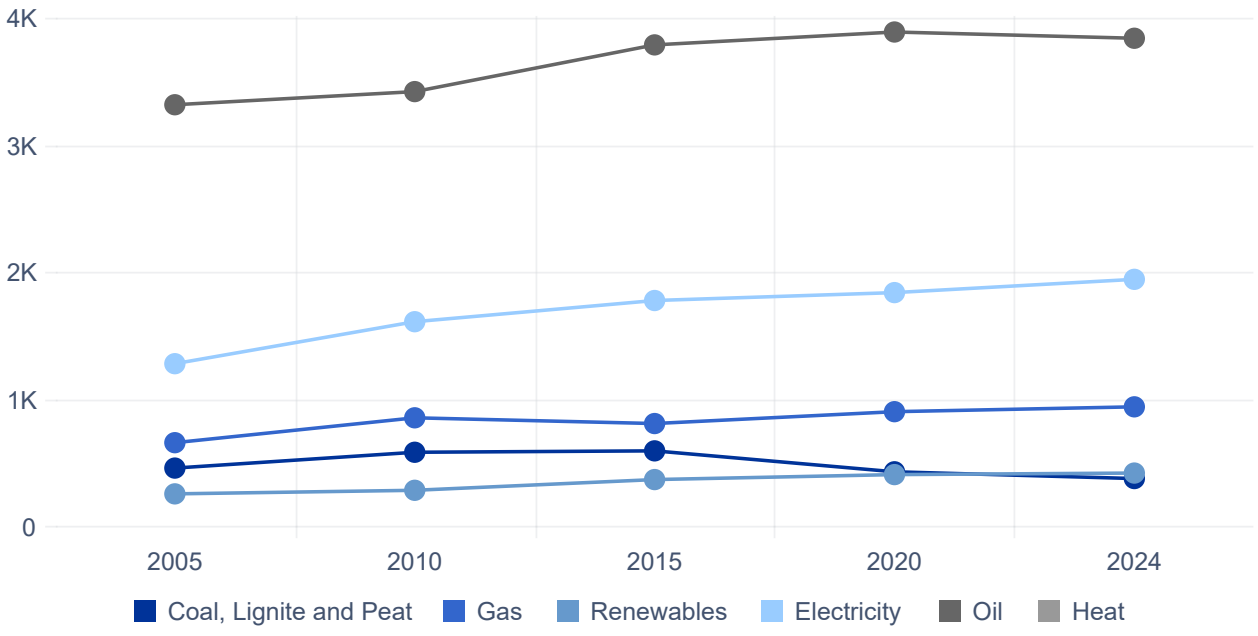
Electricity Supplied [GW(e)*h]

TABLE 2: ENERGY CONSUMPTION

Final Energy consumption [PJ]					
Final Energy consumption [PJ]	2005	2010	2015	2020	2024
Coal, Lignate and Peat	468	592	603	439	386
Petroleum products	3315	3418	3784	3885	3836
Natural gas	667	862	817	910	948
Biomass and wastes	76	110	189	154	164
Electricity	1286	1615	1781	1843	1947
Heat	190	184	189	263	265
Total	6002	6781	7363	7494	7546
Coal, Lignate and Peat					
Petroleum products					
Natural gas					
Biomass and wastes					
Electricity					
Heat					
Total					

Data as of 2024-12-31 from IAEA Referential Data Series 1

CHART 2: ENERGY CONSUMPTION



Final Energy consumption [PJ]

1.2. ELECTRICITY SYSTEM

1.2.1. Electricity System and Decision-Making Process

The ministry responsible for developing the electricity policy in the Republic of Korea is the Ministry of Trade, Industry and Energy (MOTIE). MOTIE works in consultation and close cooperation with the Ministry of Economy and Finance, six generation companies and the Korea Electric Power Corporation (KEPCO). With energy being regarded as a key component of the rapid economic development of the Republic of Korea, the Government has maintained a strong presence in the sector.

Either through direct or indirect government ownership of energy companies, utilities and several energy research institutes, MOTIE has maintained a high degree of control in all aspects of energy policy development and implementation.

The Nuclear Safety and Security Commission (NSSC) has the overall responsibility for ensuring nuclear safety through regulatory activities. The NSSC is also a policy maker for the nuclear sector.

MOTIE continues to establish the biennial Basic Plan of Long-term Electricity Supply and Demand (also referred to as BPE), which reflects environmental and safety factors in addition to a stable power supply and economic efficiency.

The 10th Basic Plan for Long-term Electricity Supply and Demand, established in early 2023, includes the forecast for power demand over the next 15 years from 2022 to 2036 as well as plans for power generation facilities.

The latest power generation blueprint projects the peak electricity demand in 2036 to be 118 GW, which is a 15.1% increase from the forecast of 102.5 GW made in the 9th edition that used the same methodology. This projection was made as the economy is expected to grow at a slower pace than in the past.

The blueprint calls for a further reduction in the expected peak demand by 13% through utilizing technologies of the fourth industrial revolution and by introducing smart energy management system incentive programs.

The target reserve margin for 2036 has been set to 22%. This means there will be an excess of approximately 22% of peak demand, assuming the installed capacity for that year will be close to 142.2 GW.

Power generation facilities with a combined capacity of 1.7 GW should be newly added to existing and already planned facilities with a capacity of 142.2 GW. The standard facility reserve rate will be secured by introducing new facilities in Jeju.

Between 2023 and 2036, the installed capacity of renewables will increase to 108.3 GW from the current 32.8 GW, with growth mainly coming from solar and wind power. The total capacity of LNG power plants will expand to 62.9 GW from 43.5 GW and that of coal-fired power plants will be reduced to 27.1 GW from 40.2 GW.

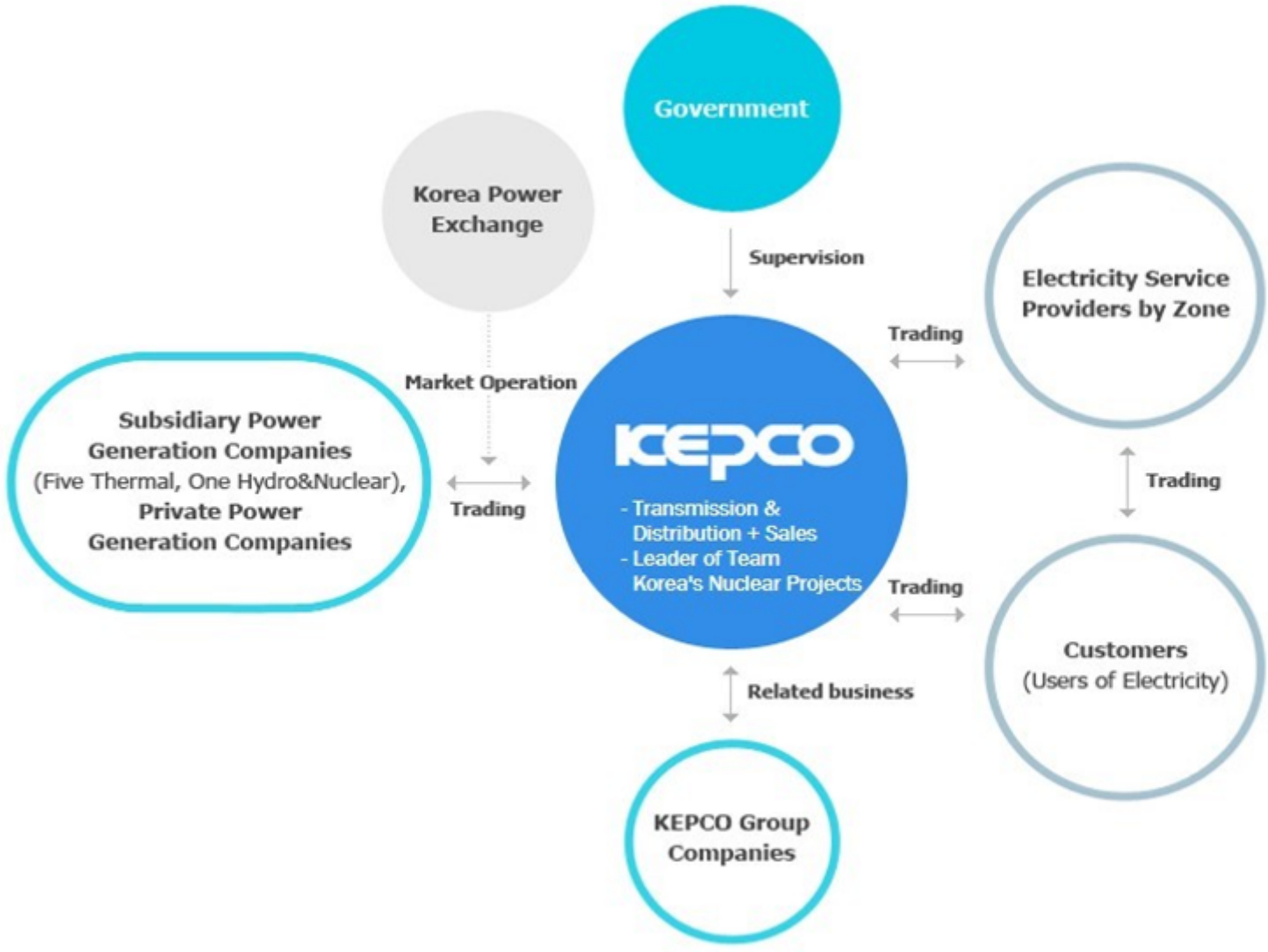
Meanwhile, the installed capacity of nuclear power generation will expand to 31.7 GW from 26.1 GW, as four new reactors will enter operation and two units subject to lifetime extension will be removed from service.

Under the new energy roadmap, natural gas and renewable energy sources will have a greater share in the generation mix in terms of installed capacity. Renewable energy will account for 45.3% of the installed capacity in 2036, which is an increase from 22.1% in 2023. The combined capacity of nuclear reactors and coal-fired power plants will represent around a quarter of the mix, which is a decrease from 44.6%.

The Government also aims to generate 30.6% of electricity from renewable energy sources by 2036. The share of natural gas is expected to be 9.3%, while the share of coal and nuclear power will be 34.6% and 14.4%, respectively.

1.2.2. Structure of the Electric Power Sector

Six power generation companies, independent power producers and community energy systems currently produce electric power. KEPCO transports the electric power it purchases from the Korea Power Exchange through the transmission and distribution network and then sells it to general customers.



Source: General structure of the Korea Electric Power Corporation (KEPCO, with additional information available at: www.kepco.co.kr).

FIG. 1. The structure of the electric power sector.

1.2.3. Electricity Statistics

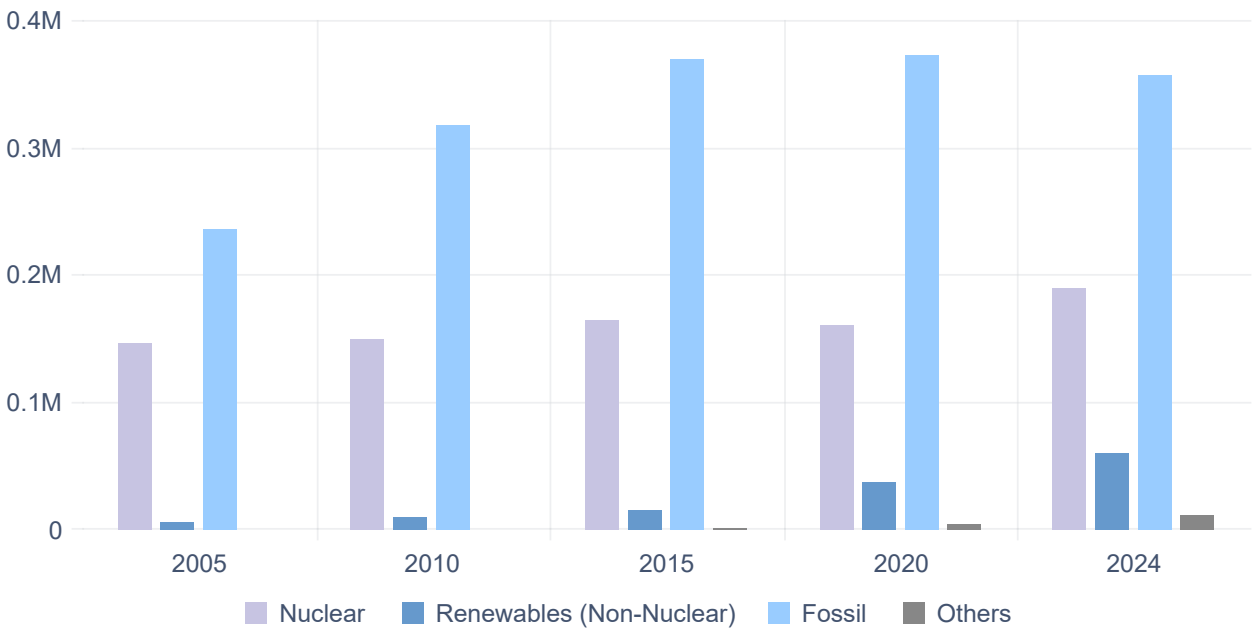
TABLE 3: ELECTRICITY PRODUCTION

Electricity production (GWh)

Electricity production (GWh)	2005	2010	2015	2020	2024
Biomass and waste	294	1107	3150	9242	11517
Coal, lignite and peat	147285	220225	233599	199745	180477
Natural gas	61498	77803	123165	165285	169076
Oil	25992	18935	12518	7294	7085
Geothermal	0	0	0	0	0
Hydro	5189	6472	5796	7148	8977
Nuclear	146779	148596	164762	160184	188754
Solar	15	772	3975	17967	35063
Tidal	0	0	496	457	424
Wind	130	817	1342	3151	3406
Others	0	197	1091	3511	10484
Total	387182	474924	549894	573984	615263
Biomass and waste					
Coal, lignite and peat					
Natural gas					
Oil					
Geothermal					
Hydro					
Nuclear					
Solar					
Tidal					
Wind					
Others					
Total					

Data as of 2024-12-31 from IAEA Referential Data Series 1

CHART 3: ELECTRICITY PRODUCTION



Electricity production (GWh)

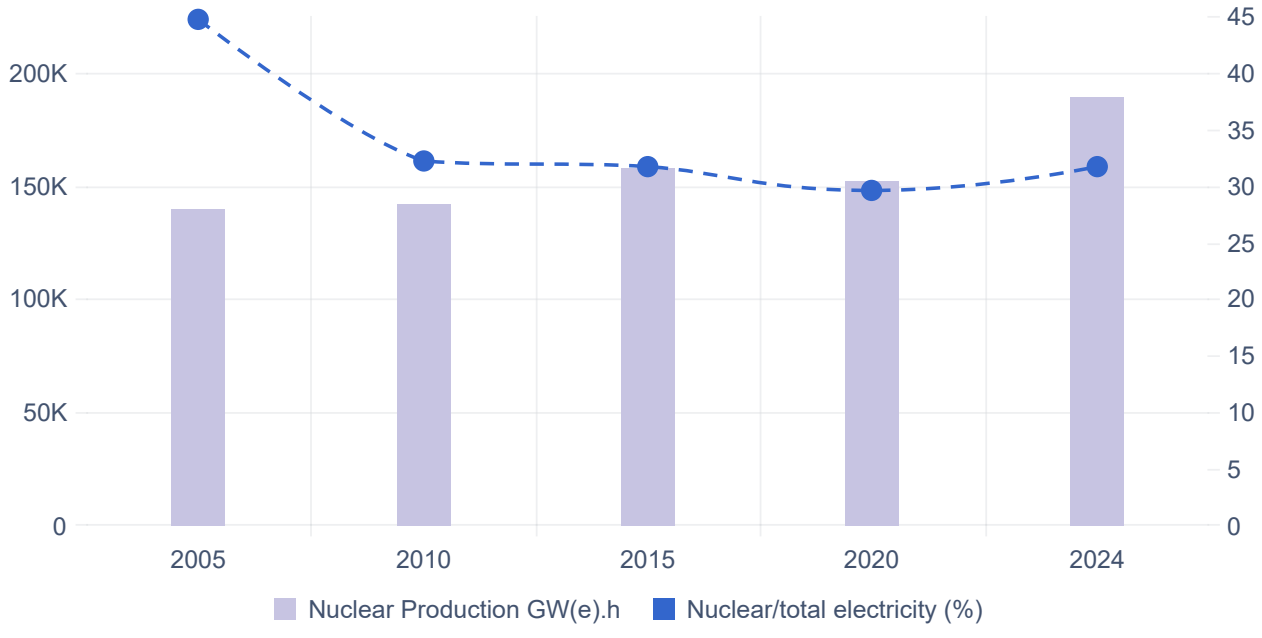
TABLE 4: NUCLEAR SHARE OF TOTAL ELECTRICITY PRODUCTION

	2005	2010	2015	2020	2024
Nuclear/total electricity (%)	44.7	32.2	31.7	29.6	31.7

Nuclear/total electricity (%)

Data as of 2024-12-31 from IAEA Power Reactor Information System

CHART 4: NUCLEAR SHARE TREND



1.3. NUCLEAR ENERGY SUPPORTING SDGs

TABLE. COMMITMENT AND STRATEGIC APPROACH

UN Sustainable Development Goals	How a Nuclear Power Programme Supports Goals
7. Affordable and clear energy	As a representative zero-carbon power source, nuclear energy emits very little CO2 during electricity generation. It can produce electricity consistently with high efficiency, making it a reliable alternative to fossil fuels. It also complements the intermittency of renewables (such as solar and wind) by serving as a baseload power source, thereby enhancing the environmental sustainability and reliability of the overall energy mix.
8. Industry, innovation and infrastructure	The construction and operation of NPPs accompanies long-term and large-scale of employment creation, contributing to the construction of regional infrastructure and the development of related industries (e.g., component manufacturing and maintenance). It supports the growth of industrial ecosystems and strengthens the long-term expansion of social infrastructure.
11. Sustainable cities and communities	Nuclear energy enables stable and large-scale electricity supply, which plays a crucial role in the electricity supply for the major infrastructure of a city. It can also be utilized in addressing energy poverty in cities by supporting large-scale and highly efficient energy for creating sustainable housing.
12. Responsible	Nuclear power maximizes efficiency in the utilization of resources and enhances the sustainability of the

consumption and production	general production system as it can generate large-scale electricity using a small amount of fuel.
13. Climate action	Nuclear power generation emits little to no greenhouse gases such as CO2 during electricity production, making it a highly effective means of reducing emissions, which are the main cause of climate change. As of 2024, the republic of Korea has made a significant contribution to the reduction of national greenhouse gas emissions by achieving 190,000 MWh of nuclear power generation. This is equivalent to a reduction of 90 million tons of greenhouse gases annually, underscoring the essential role of nuclear power in addressing climate change.

2. NUCLEAR POWER SITUATION

2.1. OVERVIEW

2.1.1. Historical Developments

The pursuit of peaceful nuclear activities in the Republic of Korea was initiated in 1957, when it became an International Atomic Energy Agency (IAEA) Member State. The following year, the Republic of Korea passed the Atomic Energy Law. In 1959, the Office of Atomic Energy was established for the peaceful uses of atomic energy.

The Republic of Korea has carried out a very ambitious nuclear power programme since the 1970s, in parallel with industrialization policies. The country has domestically maintained a strong commitment to nuclear power development as an integral part of its national energy policy, with an aim to reduce external vulnerability and global fossil fuel shortages.

The localization process of nuclear power technology in the Republic of Korea has included the design, manufacturing, construction, operation and maintenance, fuel fabrication and the building up of a safety regulatory infrastructure in a relatively short period, over several decades. As a part of this trend, a high degree of technological self-reliance in various fields of the nuclear industry has been achieved through the construction of Hanbit Units 3 and 4. At present, NPP technology and related fuel cycle technologies have reached technological maturity and realization in the markets.

The Republic of Korea currently has 26 operational reactors with a net capacity of approximately 25.60 GW(e), providing 31.7% of the country’s electricity as of 2024—marking the highest share since 2009 and positioning nuclear as the country’s leading power source. Shin Hanul-2 has been in commercial operation since April 8, 2024. Four reactors, Shin Hanul Units 3 and 4 and Saeul Units 3 and 4, are under construction with a combined net capacity of approximately 5.6 GW(e). In addition, the Government has announced plans to build two more large-scale reactors and one small modular reactor (SMR) by 2038.

2.1.2. Current Organizational structure

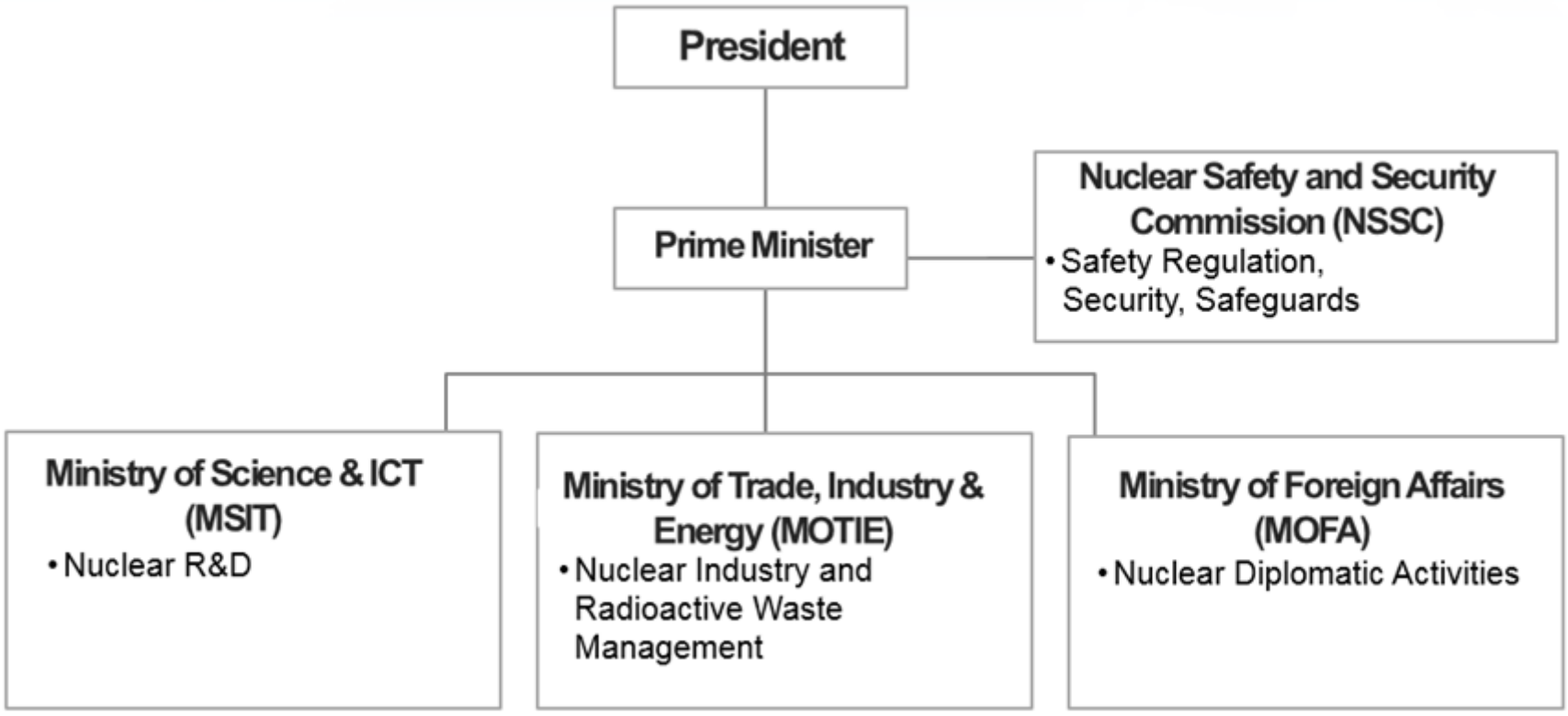
Nuclear-related activities are planned and carried out by various organizations, such as the Ministry of Science and ICT (MSIT), MOTIE, the Ministry of Foreign Affairs (MOFA) and the Nuclear Safety and Security Commission (NSSC).

The MSIT has the overall responsibility for nuclear research and development (R&D) as well as nuclear international cooperation affairs.

MOTIE is responsible for the construction, operation and decommissioning of NPPs as well as the nuclear fuel supply and the management of radioactive waste, including spent fuel.

MOFA is responsible for nuclear diplomatic activities, including the conclusion of bilateral and multilateral agreements and treaties.

The NSSC is a regulatory authority responsible for nuclear safety, security and non-proliferation.



Source: MSIT

FIG. 2. The main functions of nuclear-related organizations in the Republic of Korea.

2.1.3. Development Strategy

The Republic of Korea has established a long-term nuclear energy development strategy to support energy security, reduce carbon emissions and maintain nuclear industry competitiveness. According to the 11th Basic Plan for Long-term Electricity Supply and Demand, finalized by the Ministry of Trade, Industry and Energy (MOTIE) in February 2025, six APR1400 units and one small modular reactor (SMR) comprising four modules are planned for construction by 2038. Specifically, Shin Hanul Units 3 and 4 are scheduled to begin construction in 2026 and 2027, with expected commercial operation in 2032 and 2033, respectively. An SMR project (SMR-1) is scheduled to begin construction in 2029, with two modules expected to begin commercial operation in 2034 and the remaining two in 2035. Two additional APR1400 units are planned to begin construction in 2031 and 2032, with operation starting in 2037 and 2038. The continued operation of ten existing reactors through license renewal is also planned until 2030.

In parallel with reactor deployment, efforts are underway to develop next-generation nuclear technologies. The innovative SMR (i-SMR) project, launched by Korea Hydro & Nuclear Power (KHNP) in 2020, became a national R&D project in 2023 after a feasibility study was completed in 2022. The goal is to obtain Standard Design Approval by 2028 and begin operation in the early 2030s. The 6th Comprehensive Nuclear Energy Promotion Plan (2022–2026), announced by the Ministry of Science and ICT (MSIT), outlines national R&D priorities across five areas: nuclear safety, environmental management, radiation technology, SMRs and future nuclear innovation. The Government plans to invest at least USD 220 million in SMR development over six years. Institutional support is provided through the Special Act on Fostering National Strategic Technology, which promotes R&D, industrial development and human resource training. Public-private cooperation models are also being pursued for the development and demonstration of advanced reactor systems, including sodium-cooled fast reactors (SFRs), molten salt reactors (MSRs) and high-temperature gas-cooled reactors (HTGRs).

2.2. CONSTRUCTION

2.2.1. Project Management

In 1985, the Government of the Republic of Korea made the landmark decision to implement a national self-reliance policy and allocated related roles and responsibilities among domestic nuclear organizations to streamline and nationalize the nuclear power industry (Fig. 3).

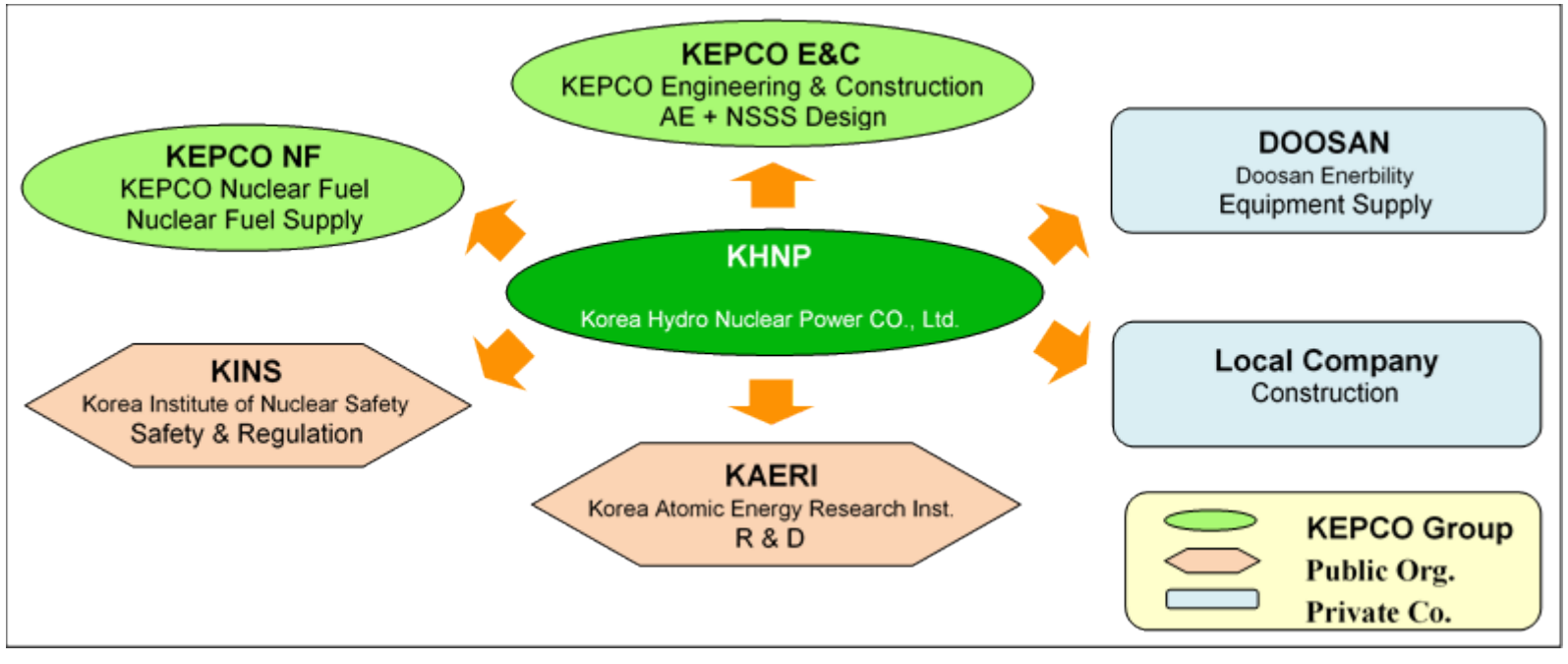


FIG. 3. The structure of the nuclear power industry in the Republic of Korea.

Note: Overall project management — Korea Hydro & Nuclear Power Company (KHNP); Architectural engineering and nuclear steam supply system (NSSS) design — Korea Electric Power Corporation Engineering & Construction Company (KEPCO E&C); Nuclear fuel design and fabrication — KEPCO Nuclear Fuel (KEPCO NF); Research and development — Korea Atomic Energy

Research Institute (KAERI); NSSS, turbine and generator manufacturing — Doosan Enerbility (DOOSAN); Safety regulations — Korea Institute of Nuclear Safety (KINS).

The technological self-reliance strategy has been applied since the construction of Hanbit Units 3 and 4, which were constructed by domestic technical staff based on domestic NPP technology and became the model for the first NPPs built to the Republic of Korea's standards. Based on the enhanced domestic technology in the heavy chemical industry and the technology acquired from participating as subcontractors in international companies, the roles were reversed: Where domestic companies served as the main contractors with international companies as subcontractors that supported the key technology, thus achieving a higher degree of self-reliance in NPP construction.

2.2.2. Project Funding

KHNP works to secure a reasonable sales price for electricity and to reduce the cost of production in order to maximize retained earnings, which can be used for future capital expenditure. To acquire additional funding, KHNP mainly issues corporate bonds with diversified maturities to attract national and international investors.

KHNP is also managing financial risks in order to reduce and eliminate related risk to acceptable levels in compliance with policies and procedures.

2.2.3. Sites

TABLE 5A: STATUS OF REACTORS UNDER CONSTRUCTION

Reactor Unit	Type	Net Capacity [MW(e)]	Status	Date	Operator	Supplier
SAEUL-3	PWR	1340	Under Construction		KHNP	DHICKOPC
SAEUL-4	PWR	1340	Under Construction		KHNP	DHICKOPC
Number of reactors: 2						

Data as of 2024-12-31 from IAEA Power Reactor Information System

2.2.4. Organizations and Institutions

Since the Government decided to pursue technological self-reliance in 1985, the structure of domestic projects in the Republic of Korea has remained relatively stable, as outlined in Fig. 3. KHNP is in charge of overall project management at all stages of NPP construction, from the preparatory phase to commercial operation as an owner. KHNP designated KEPCO E&C to lead the architectural engineering of plants and nuclear steam supply system (NSSS) design. Doosan Enerbility is responsible for supplying the NSSS and the turbine/generator, and KEPCO NF provides nuclear fuel. KAERI contributes to the overall nuclear R&D. Construction is carried out by several domestic companies, such as Hyundai and Samsung.

2.3. OPERATION

2.3.1. Status and Performance of Nuclear Power Plants

Currently, a total gross capacity of 26.05 GW(e) is being produced across 26 operating NPPs, comprising 23 pressurized water reactors (PWRs) and three CANDU pressurized heavy water reactors (PHWRs). There are two units being constructed. Table 5B shows the status of the NPPs as of December 2024.

TABLE 5B: STATUS OF REACTORS IN OPERATION

Reactor Unit	Type	Net Capacity [MW(e)]	Status	Operator	Supplier	First Grid Date	Commercial Date	Suspension Date
HANBIT-1	PWR	965	Operational	KHNP	WH	1986-03-05	1986-08-25	
HANBIT-2	PWR	952	Operational	KHNP	WH	1986-11-11	1987-06-10	
HANBIT-3	PWR	983	Operational	KHNP	DHICKAEC	1994-10-30	1995-03-31	
HANBIT-4	PWR	961	Operational	KHNP	DHICKAEC	1995-07-18	1996-01-01	
HANBIT-5	PWR	974	Operational	KHNP	DHICKOPC	2001-12-19	2002-05-21	
HANBIT-6	PWR	978	Operational	KHNP	DHICKOPC	2002-09-16	2002-12-24	
HANUL-1	PWR	953	Operational	KHNP	FRAM	1988-04-07	1988-09-10	
HANUL-2	PWR	957	Operational	KHNP	FRAM	1989-04-14	1989-09-30	
HANUL-3	PWR	991	Operational	KHNP	DHICKOPC	1998-01-06	1998-08-11	
HANUL-4	PWR	994	Operational	KHNP	DHICKOPC	1998-12-28	1999-12-31	
HANUL-5	PWR	989	Operational	KHNP	DHICKOPC	2003-12-18	2004-07-29	
HANUL-6	PWR	987	Operational	KHNP	DHICKOPC	2005-01-07	2005-04-22	
KORI-2	PWR	640	Operational	KHNP	WH	1983-04-22	1983-07-25	
KORI-3	PWR	996	Operational	KHNP	WH	1985-01-22	1985-09-30	
KORI-4	PWR	1001	Operational	KHNP	WH	1985-12-31	1986-04-29	
SAEUL-1	PWR	1392	Operational	KHNP	DHICKOPC	2016-01-15	2016-12-20	
SAEUL-2	PWR	1392	Operational	KHNP	DHICKOPC	2019-04-22	2019-08-29	
SHIN-HANUL-1	PWR	1429	Operational	KHNP	DHICKOPC	2022-06-09	2022-12-07	
SHIN-HANUL-2	PWR	1416	Operational	KHNP	DHICKOPC	2023-12-21	2024-04-05	
SHIN-KORI-1	PWR	986	Operational	KHNP	DHICKOPC	2010-08-04	2011-02-28	
SHIN-KORI-2	PWR	982	Operational	KHNP	DHICKOPC	2012-01-28	2012-07-20	
SHIN-WOLSONG-1	PWR	980	Operational	KHNP	DHICKOPC	2012-01-27	2012-07-31	
SHIN-WOLSONG-2	PWR	976	Operational	KHNP	DHICKOPC	2015-02-26	2015-07-24	
WOLSONG-2	PHWR	571	Operational	KHNP	AECL/DHI	1997-04-01	1997-07-01	
WOLSONG-3	PHWR	595	Operational	KHNP	AECL/DHI	1998-03-25	1998-07-01	
WOLSONG-4	PHWR	569	Operational	KHNP	AECL/DHI	1999-05-21	1999-10-01	

Number of reactors: 26

Data as of 2024-12-31 from IAEA Power Reactor Information System

2.3.2. Plant Life Management, Plant Upgrades and License Renewals

Beginning in September 2002, the Korea Hydro & Nuclear Power Company (KHNP) conducted power uprating projects for Kori Units 3 and 4 to upgrade their reactor thermal power and eventually increase the electrical output. Kori Units 3 and 4 reached their newly rated thermal power (2900 MW(t), a 4.5% stretch power uprate) in December and February 2009, respectively, and increased their electrical output by 34.1 MW(e) from 999 MW(e) (original output) to 1033.1 MW(e) (uprated output).

To effectively manage the major structures, systems and components (SSCs) and to reduce the maintenance costs associated with the operation of NPPs, long-term asset management strategies based on equipment reliability processes (INPO AP-913) were developed at KHNP as part of its plant life management efforts.

The definition of the continued operation of NPPs is stated in the Nuclear Safety Act and its Enforcement Decree. According to this legal statement, it is possible to extend a plant’s operation beyond its design lifetime. The period of continued operation for NPPs is ten years according to the current legal framework of the Republic of Korea. It is mandatory for the utility to conduct a periodic safety review (PSR) of its operating NPPs every ten years and to submit PSR reports for regulatory review. An enhanced PSR report, including a lifetime evaluation report (LER) and radiological environment report, should be submitted by the utility to the NSSC in the continued operation application five to ten years before the end of the design lifetime. In December 2022, the timeline for submitting the PSR report was revised from “two to five years” to “five to ten years” before the end of the design lifetime according to the amendment of the nuclear law enforcement ordinance. The amendment will be applied to Hanbit-3,4 and the units for which a lifetime will have expired by 2030. The LER of the continued operation includes ageing management programmes and time limited ageing analyses, which identify the SSCs within the scope of continued operation.

KHNP submitted a safety evaluation report for the continued operation of Kori-2 in April 2022 and Kori-3,4 in September 2022, respectively, as well as those for Hanbit-1,2 and Hanul-1,2 in June and October 2023 respectively.

The safety evaluation reports for the continued operation of Wolsong-2,3 and 4 were submitted in April 2024. The submitted reports are currently being examined by the NSSC.

2.3.3. Organizations and Institutions

Figure 3 (in 2.2.1. Project Managment) shows the main organizations involved in NPP operation. KEPCO Plant Service and Engineering (KEPCO KPS) provides maintenance services for all of the operating NPPs, while five individual companies provide maintenance services for some of the NPPs.

2.4. DECOMMISSIONING

2.4.1. Permanent Shutdown

KHNP permanently shut down Kori NPP-1, the Republic of Korea’s first NPP, in June 2017 and Wolsong NPP-1 in December 2019.

TABLE 5C: STATUS OF REACTORS IN PERMANENT SHUTDOWN

Reactor Unit	Type	Net Capacity [MW(e)]	Status	Operator	Supplier	First Grid Date	Commercial Date	Shutdown Date
KORI-1	PWR	576	Permanent Shutdown	KHNP	WH	1977-06-26	1978-04-29	2017-06-18
WOLSONG-1	PHWR	661	Permanent Shutdown	KHNP	AECL	1982-12-31	1983-04-22	2019-12-24
Number of reactors: 2								

Data as of 2024-12-31 from IAEA Power Reactor Information System

2.4.2. Decommissioning Plan and Process

KHNP submitted a final decommissioning plan for Kori NPP-1 in May 2021 and Wolsong NPP-1 in June 2024 to the regulatory body. The submitted final decommissioning plans are currently being examined by the NSSC.

TABLE 6: STATUS OF DECOMMISSIONING PROCESS OF NUCLEAR POWER PLANTS

Reactor Unit	Shutdown Date	Shutdown Reason	Decommissioning Strategy	Current Decommissioning Phase	Decom. Licensee
KORI-1	2017-06-18	Political decision, End of design life	ID		KHNP
WOLSONG-1	2019-12-24	Comprehesive decision(Political, economic, safety, ect.)	ID	Drawing up final plan, Transition Shutdown-Decom	KHNP [2034]
Number of reactors: 2					

Data as of 2024-12-31 from IAEA Power Reactor Information System
Please refer to RDS2 Publication Table 17 for more information on status of Decommissioned reactors

2.4.3. Organizations and Institutions

According to the Nuclear Safety Act (NSA), KHNP, the sole NPP operator in the Republic of Korea, has the responsibility for decommissioning NPPs. KHNP permanently shut down Kori NPP-1 in June 2017 and Wolsong NPP-1 in December 2019. The following government agencies oversee the entire nuclear decommissioning process.

- MOTIE establishes and implements a roadmap for the national energy policy.
- The NSSC establishes relevant regulations and supervises the decommissioning of NPPs.
- KINS, entrusted by the NSSC, provides technical support for regulatory duties related to decommissioning.
- KAERI performs R&D related to the decommissioning of NPPs.
- The Korea Radioactive Waste Agency (KORAD) carries out the disposal of the radioactive waste generated during decommissioning.
- Local agencies are involved as public health and safety regulators.

2.5. PLANNED DEPLOYMENT OF NUCLEAR POWER

2.5.1. Planned Nuclear Power Projects

According to the 11th Basic Plan of Long-term Electricity Supply and Demand, which was finalized by MOTIE in February 2025, six APR1400 units and one SMR consisting of four modules will be constructed by 2038. The continued operation (i.e., license renewal) of nuclear power plants (ten units up to 2030) was also reflected in this plan.

TABLE 7: CONSIDERED AND PLANNED NUCLEAR POWER PLANTS

Reactor Unit	Type	Net Capacity [MW(e)]	Status	Expected Construction Start Year	Expected Grid Year	Construction Licence Submission Date

Not Applicable
Data as of 2024-12-31 from IAEA Power Reactor Information System
Please refer to RDS2 Publication Table 12 for more information on status of Planned reactors

2.5.2. Considered Technologies

APR1400 is a Generation III light water reactor (LWR) with a capacity of 1400 MW(e). Unlike OPR1000, which has a two-train active safety system, APR1400 has a four-train active safety system, with the aim of achieving higher safety levels than OPR1000. The standard design of APR1400 was domestically certified in May 2002, and Shin Kori Units 3 and 4 were the first plants to implement the APR1400 design. Shin Kori Units 3 and 4 have been in commercial operation without any issues since December 2016 and July 2019, respectively. UAE’s Barakah NPP Units 1, 2, 3 and 4, which applied the same reactor type, have also been in commercial operation since April 2021, March 2022, February 2023 and September 2024, respectively.

The APR1400 design was certified according to European Utility Requirements (EUR) in November 2017. The EU-APR standard design is the APR1400 design that meets European safety standards. Also, in August 2019, the APR1400 standard design received certification from the United States Nuclear Regulatory Commission (USNRC), making it the first case of a non-US NPP acquisition. As a result, the brand value of the Republic of Korea’s NPPs increased, and KHNP diversified the NPP export market by acquiring both NRC design certification and EUR certification.

The APR1000 standard design, i.e., a reactor model for exports to Europe, acquired a final EUR certificate of compliance with the up-to-date European Utility Requirement in March 2023. The APR1000 is a reactor design localized for European conditions and conforms with the latest European requirements based on recent international standards and references from the IAEA and Western European Nuclear Regulators' Association (WENRA). The acquisition of the final EUR certificate enhanced the possibility of winning orders for nuclear projects in European countries. It has also shown that Korean nuclear technology suits Europe’s high expectations in all aspects of safety, economics and constructability.

In 2020, KHNP started the i-SMR project with the goal of making it the “Best SMR of the Global SMR market in the 2030s”. After a feasibility study for eight months by the National Review Agency in May 2022, it became a national R&D project with the full support of the Government starting in 2023. The Republic of Korea will establish new regulatory standards and guidelines suitable for SMRs to enhance their safety and economic aspects. The completed development of the i-SMR with the world’s highest levels of safety, flexibility and economics will help in obtaining Standard Design Approval by 2028 and operating the first i-SMR by the early 2030s. The i-SMR will be the optimal solution for accelerating the realization of net-zero.

2.6. FUEL CYCLE AND WASTE MANAGEMENT

2.6.1. Fuel Cycle Activities

Demand for nuclear fuel cycle services has increased slightly with the commencement of additional NPP operations in the Republic of Korea. KHNP, the sole consumer of nuclear fuel in the Republic of Korea, has guidelines for nuclear fuel procurement strategies with a stable and economically feasible supply chain. KHNP analyzes long-term fuel demands annually and establishes diverse fuel supply plans with a combination of service contracts and spot market purchases through an international open bidding process. According to the procurement plan in 2025, KHNP purchases uranium concentrates from suppliers in Canada, France, Switzerland, the United Kingdom, Australia, Kazakhstan and Uzbekistan; conversion services from suppliers in the United States of America, Switzerland, France and Japan; and enrichment services from France, Switzerland and the United Kingdom. Fuel fabrication services are fully localized by KEPCO NF.

2.6.2. Waste Management

The spent fuel is stored in the spent fuel storage facilities of their respective NPPs. In March 2025, the Government decided on a national policy for spent fuel management, including the construction of a centralized intermediate storage facility and permanent disposal facility for spent fuel. According to the policy, the intermediate storage facility for spent fuel will be constructed in 2050 and the permanent disposal facility for spent fuel will be constructed in 2060.

2.7. EMERGENCY PREPAREDNESS

2.7.1. Laws

Radiological emergency preparedness is based on the Framework Act on Civil Defense and the Framework Act on the Management of Disasters and Safety, which stipulate the system of national response against disasters, and the Act on Physical Protection and Radiological Emergency (APPRE), which stipulates the system for managing radiological emergencies. In particular, APPRE, legislated in May 2003 and enforced in February 2004, stipulates the overall radiological emergency management affairs, including the prevention of, preparedness for, and response to radiological emergencies, radiological emergency medical treatments, and international cooperation. Pursuant to APPRE, the NSSC formulates the National Radiological Emergency Plan every five years and establishes the Enforcement Plan for National Radiological Emergency Preparedness, which is a specific execution plan. The local governments having jurisdiction over the relevant Emergency Planning Zone establish and implement the Regional Radiological Emergency Preparedness Plan every year in accordance with the National Radiological Emergency Plan and the Enforcement Plan for National Radiological Emergency Preparedness.

The licensees that operate nuclear installations including power reactors, research reactors, fuel cycle facilities, radioactive waste storage, treatment, disposal facilities and facilities using nuclear materials established their radiological emergency plan under the APPRE and Regulations on the Radiological Emergency Preparedness of the Licensees (NSSC Notice 2022-9).

The NSSC reviews and approves the radiological emergency preparedness plan prepared by the nuclear licensee. Under the Regulation on Inspection for Radiological Emergency Preparedness of Nuclear Licensees (NSSC Notice 2017-53), the NSSC carries out periodic inspection on the licensee’s duties, facilities and equipment to respond to radiological disasters, emergency training and radiological emergency exercises and drills. In addition to periodic inspections, it may conduct special inspections on the licensee when it is deemed necessary to check the performance of the radiological emergency plan approved under the Decree

of APPRE. This occurs if major details of the plan have been revised or when it is feared that a radiological emergency will take place due to incidents or failures.

In order to assess the emergency response capabilities of the licensee, government and local authorities in the case of a radiological emergency, radiological emergency preparedness exercises are carried out regularly. The NSSC evaluates the adequacy of emergency categorization and responses, recommendations and the implementation of public protective action, the provision of emergency preparedness facilities and equipment as well as their availability during the radiological emergency exercises conducted by the licensee and the local government.

As the need arose to strengthen the integrated radiological emergency response system at the government level, the Framework Act on Disaster and Safety Management was revised in June 2020. Accordingly, when the National Emergency Management Committee (NEMC) is chaired by the Prime Minister, the head of a central administrative agency designated by the Prime Minister shall be the vice head with the Chairperson of the NSSC. The NSSC amended the APPRE in December 2021 to reflect the following contents in order to more effectively carry out public protective actions, such as large-scale evacuations and sheltering in the event of a radiological disaster.

- Within the national radiological emergency preparedness system, the Public Protective Support Center was created with the Ministry of Interior and Safety at the center to oversee and support the protection of residents.
- The Ministry of Interior and Safety jointly conducts the review of the Local Radiological Emergency Plan and evaluates the local governments' radiological emergency exercises, which used to be conducted solely by the NSSC.

The Ministry of the Interior and Safety (MOIS) used to provide cooperation and support, but now it has been incorporated into the national radiological emergency structure and provides concrete and practical support activities for public protective action.

2.7.2. The implementation of emergency preparedness measures

Radiological emergency response regime

The radiological emergency response scheme is composed of the National Emergency Management Committee (NEMC), which is chaired by the Chairperson of the NSSC, the Off-site Emergency Management Center (OEMC), the Local Emergency Management Center (LEMC), the Radiological Emergency Technical Advisory Center of KINS, the Radiological Emergency Medical Service Center of the Korea Institute of Radiological and Medical Sciences (KIRAMS) and the emergency operations facility (EOF) of the nuclear licensee (Fig. 4).

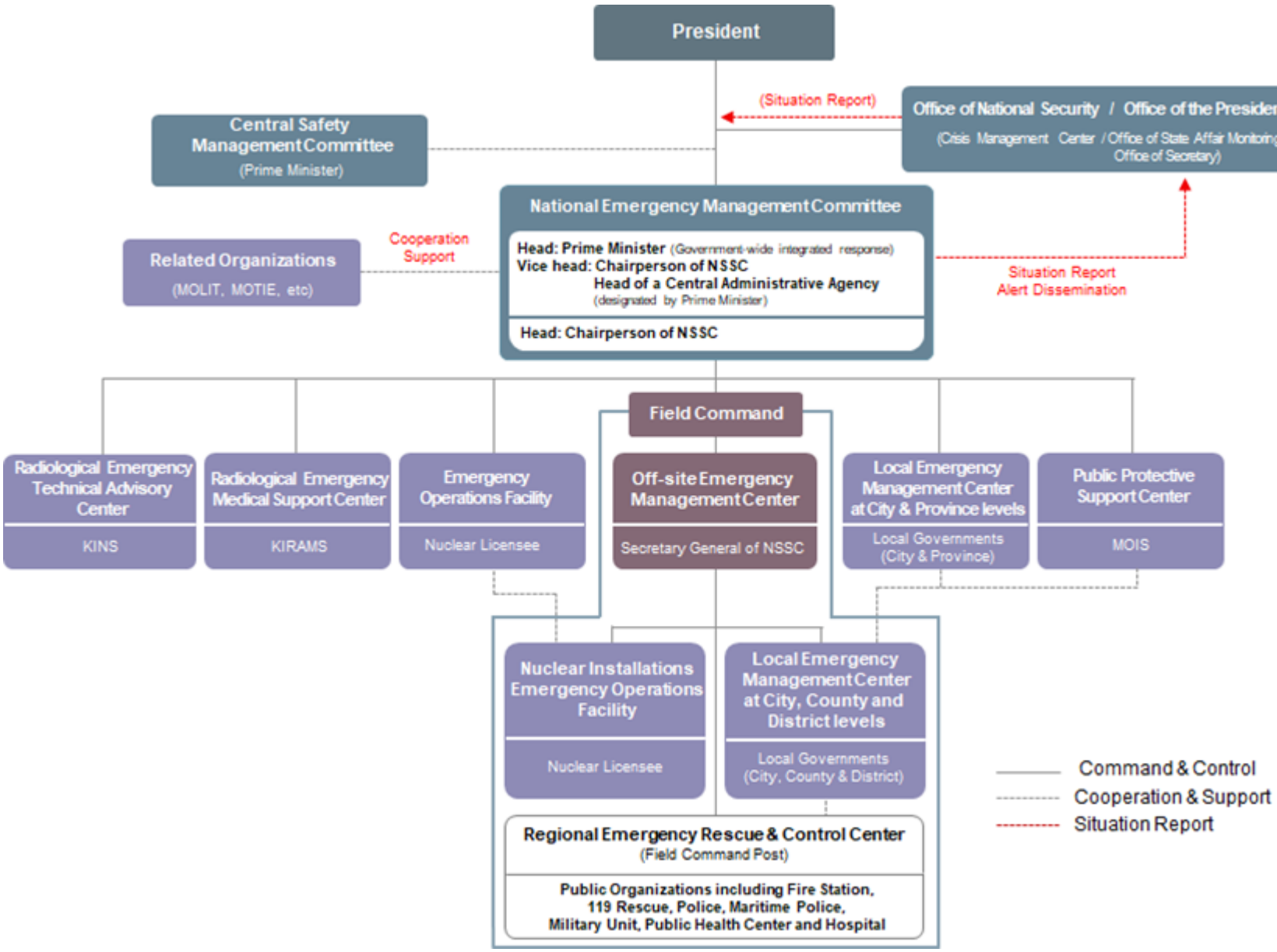


FIG. 4. The national radiological emergency preparedness regime.

The NSSC is responsible for controlling and coordinating countermeasures against radiological disasters. When a radiological emergency occurs (i.e., on-site emergencies and above), the NSSC operates the National Emergency Management Committee, in which 19 central government departments and two specialized institutes participate as members of committee meetings to initiate a practical pan-governmental response system.

The NSSC establishes and operates the OEMC, which is chaired by the secretary general of the NSSC and consists of experts from central and local governments, local military units and police, firefighting and educational institutes, nuclear safety expert organizations, radiological medical service institutes and personnel dispatched by the licensees. The OEMC has the responsibility

to perform the coordination and management of radiological emergency responses such as accident analyses, radiation (radioactivity) detection and decision making on public protective actions such as sheltering, evacuation, food restrictions, the distribution of thyroid protection medicine as well as control of the taking out or consumption of agricultural, livestock and fishery products. The OEMC is composed of seven working divisions, and the Off-site Emergency Management Center Advisory Committee (OEMCAC) has been installed as an advisory organization to facilitate the decision-making process of the OEMC. Meanwhile, the Joint Information Center is also operated to ensure that the information is delivered in a clear and consistent manner. In addition, the Joint Radiation Monitoring Center, which is responsible for offsite radiation monitoring, and the Joint Radiation Emergency Medical Center, which is responsible for emergency medical care, will also be established as sub-organizations of the OEMC.

The LEMC, established by the local governments concerned, implements the OEMC's decisions on protective measures for residents. It also takes charge of the coordination and control of emergency relief activities by utilizing local fire stations, police stations and military units.

When an accident occurs, the KHNP, i.e., the licensee of nuclear installations, is responsible for organizing an emergency operation facility and for taking measures to mitigate the consequences of the accident, restore installations and protect on-site personnel.

KINS organizes the Radiological Emergency Technical Advisory Center (RETAC), which is in charge of providing technical advice on radiological emergency responses, analyzing and assessing of accidents, dispatching technical advisory teams to the affected sites, initiating the emergency operation of 244 nationwide environmental radioactivity monitoring stations and assessing environmental radiological impacts. KINS has an agreement with the Armed Force CBR (Chemical/Biological/Radiological) Defense Command for a prompt response in the initial phase of a radiological emergency. It has also developed the Atomic Computerized Technical Advisory System for a Radiological Emergency (AtomCARE). Currently the system effectively provides technical support for the protection of the public and the environment during radiological emergencies. AtomCARE enables the rapid analysis and assessment of the radiological impacts of emergencies and the comprehensive management of information to protect the public.

KIRAMS established the National Radiation Emergency Medical Center to be operated in case of a radiological disaster and to take on the overall management of radiation emergency medical activities, including advice on medical relief, technical support and medical treatment for those with radiation damage or those who are likely to suffer radiation damage. The National Radiation Emergency Medical Center dispatches a field medical support team to establish and operate the Joint Radiation Emergency Medical Center and supports the installation and operation of field radiation emergency medical clinics.

Protective measures

The NSSC has divided the Emergency Planning Zone (EPZ), which was previously set as an 8-10 km radius for the power reactors, into a Precautionary Action Zone (PAZ) (3-5km) and Urgent Protective Action Planning Zone (UPZ) (20-30 km). The local government designates and manages the essential resources by region such as the reception centers and iodine thyroid blocking agents considering the estimated population in the EPZ. In case of a radiological emergency, the evacuation procedure is implemented by LEMC in accordance with the decision of the OEMC.

Considering the special aspects of radiological accidents, the nuclear installation operator shall also install the Emergency Broadcasting System (EBS) within the PAZ. The local government is responsible for alerting the population living within the PAZ by using the EBS and other alert systems for the public.

The NSSC added new provisions regarding stockpiling and managing the iodine thyroid blocking agent to the APPRE in 2021 to strengthen the protective measures for residents. This created the legal basis for the local government to have jurisdiction in the EPZ concerning the stockpiling, managing and pre-distributing of the iodine thyroid blocking agent after considering the promptness of resident protection, efficiency of managing the agent as well as misuse and side effects. KHNP has made agreements with designated hospitals near NPP sites for prompt medical services in case of a radiological emergency. It also established the Radiation Health Research Institute, which conducts research on radiation and health physics and provides emergency medical services and medical examinations for nuclear workers.

2.7.3. Training and exercises

Radiological Emergency Preparedness Training

According to the APPRE of 2003, radiological emergency training is comprehensively managed at the national level. In that sense, the NSSC has conducted the regulatory inspection of radiological emergency training programs in radiological emergency educational institutes. To support the implementation of comprehensive and systematic radiological emergency training, the Regulation on Training for Radiological Emergency Preparedness (NSSC Notice) specifies the designation and notification of radiological emergency staff, the establishment of training programs, conditions for training facilities, methods of training and other necessary details.

The operator of a nuclear installation shall periodically conduct repeated training and exercises for emergency personnel to qualify them by providing a thorough knowledge of emergency duties. The International Nuclear Safety School of KINS, Nuclear Training Center of KAERI and Human Resource Development Institute of KHNP operate training courses on emergency preparedness for personnel involved in emergency responses.

KIRAMS conducts trainings on radiological emergency medicine for personnel designated by the head(s) of KIRAMS and 31 primary and secondary radiological emergency medical institutions.

Emergency Preparedness Exercises

The central government, local governments, nuclear operators and relevant organizations organize the following exercises and drills to verify and assess emergency preparedness and response capabilities.

- (Unified exercises) The emergency organizations of nuclear operators (i.e., power reactors), off-site emergency organizations, and central and local governments participate in the unified exercise held under the supervision of the NSSC on a national level once a year according to the emergency preparedness training plan schedule.
- (Integrated emergency exercises) The emergency organizations of the licensee (i.e., power reactors, research reactors) and off-site emergency management organizations participate in the joint emergency exercises organized by the local government at each nuclear installation site once every two years.
- (On-site emergency exercises) All emergency units at a nuclear power station with two units participate in an on-site emergency exercise that is held once a year. (Small operators conduct the exercise once every two years.)
- (Drills) The nuclear operator conducts limited-scope exercises by the emergency organization once a quarter. (Small operators conduct them twice a year.)

- (Initial exercise) New nuclear installations conduct on-site emergency exercises to verify their emergency response capabilities before the rated thermal output reaches 5%. The integrated emergency exercises are carried out for those nuclear power installations constructed on a new site.

The exercise inspection team composed of experts from the NSSC Regional Office, KINS and KIRAMS carries out technical assessments on the emergency exercises for plant emergencies and above. For the issues identified, the team requests corrective actions and examines and manages the follow-up actions of the nuclear operator.

The local governments implement intensive exercises on one of the public protective actions such as traffic control, the distribution of information to residents, sheltering-in-place, evacuations, the distribution of a thyroid blocking agent and the operation of reception centers. KINS conducts an intensive exercise on environment radiation monitoring once a year pursuant to the National Radiological Emergency Plan. The radiation emergency medical service providers of KIRAMS and radiological emergency medical institutions not only participate in unified drills organized at the national level and joint exercises organized by local governments, but also intensive exercises on radiological emergency medicine organized by KIRAMS.

2.8. RESEARCH AND DEVELOPMENT

2.8.1. Development of Novel Technology and Applications

In 1997, the Government of the Republic of Korea established the Comprehensive Nuclear Energy Promotion Plan (CNEPP), which includes the national policy on nuclear energy utilization, promotion and related sectoral tasks, which are based on the Nuclear Energy Promotion Act. As part of the CNEPP, a national nuclear R&D plan has been formulated every five years (since 1997) to account for major changes in R&D and to summarize other technological progress.

At the end of 2021, the MSIT announced the 6th CNEPP (2022-2026) to strengthen policy support for advanced safety technologies and innovative nuclear/radiation technologies. The four basic directions of the 6th CNEPP are as follows: (i) Reinforce the safety of operating NPPs and minimize the environmental burden of radioactive waste; (ii) expand NPP exports and pioneer new emerging markets for NPP decommissioning and SMRs; (iii) develop innovative outcomes through the convergence of nuclear and radiation technologies; and (iv) strengthen public participation and communication, and continue efforts to enhance the nation’s status through international cooperation.

In line with the 6th CNEPP, the national nuclear R&D plan from 2022 to 2026 was established in early 2022 with the vision of new nuclear technology contributing to the growth and development of future generations. The plan implements enhanced R&D investments, promotes R&D targeting a new emerging nuclear power market, pioneers future markets through open innovations, discovers cutting-edge technologies and secures the foundation for nuclear technology. The plan focuses on five research fields: (i) nuclear safety; (ii) nuclear environment management; (iii) radiation; (iv) SMRs; and (v) future innovation.

When the new Government of the Republic of Korea was inaugurated in May 2022, the president's top priority was to abolish the previous government's nuclear phase-out policy and strengthen the nuclear industry ecosystem. These major nuclear policy changes included extending the lifetimes of the currently operating NPPs and aiming to increase the number of NPPs by 2030.

The Government aims to boost R&D and industry by focusing on “National Strategic Technologies”. The next-generation nuclear system is one such strategic technology. The key technologies identified within this system are small modular reactors (SMRs), advanced nuclear systems (GenIV systems), and waste management. Thus, the Government will support the demonstration of

advanced SMRs and the development of diverse nuclear reactor applications. The "Special Act on Fostering National Strategic Technology" was passed by the National Assembly to provide an institutional foundation for promoting SMR R&D, industry development and human resource training.

Over the next six years, the Government plans to invest at least $220 million in developing the "innovative SMR (i-SMR)". This project aims to compete in the future SMR market by incorporating innovative technologies. The i-SMR is a joint effort by Korea's industrial, academic and research sectors, with the goal of obtaining standard design approval by 2028. Starting in 2024, the Korea Nuclear Safety and Security Commission will begin establishing safety regulations for SMRs, enabling the Government to pursue innovative SMR development.

Future developments in next-generation reactor technology will be promoted through public-private partnerships. Recognizing the rising demand for the SMR market, which can flexibly meet a variety of needs, the Government sees the necessity for a private sector-led reactor development ecosystem. As such, in early 2024, the Government announced a strategy to encourage public-private partnerships for next-generation reactors. This would enable the private sector to develop its own SMR models based on government-secured technologies and respond quickly to market needs. These partnerships are expected to create a new value chain in the nuclear industry. Specifically, the Government plans to propose a technology development model where the Government of the Republic of Korea and private companies cooperate to expedite the demonstration of SFRs, MSRs and HTGRs. The Government is optimistic about the market introduction of nuclear technology via industry.

2.8.2. Organizations and Institutions

The MSIT is responsible for forming and implementing policies on nuclear R&D, human resource development (HRD) and international cooperation. This includes nuclear energy promotion and radiation technology development.

Agencies related to nuclear R&D under the MSIT are KAERI and the Korea Institute of Radiological and Medical Sciences (KIRAMS). KAERI carries out a wide range of nuclear R&D activities in areas such as nuclear reactors, nuclear fuel cycles, radioactive waste management, nuclear safety, radiation and radioisotope applications as well as basic and applied research. KIRAMS focuses its research efforts on the medical utilization of radiation and radioisotopes for radiation treatments, nuclear medicine, radiological science, medical engineering and bioengineering technology.

2.9. HUMAN RESOURCES DEVELOPMENT

The 6th CNEPP (2022-2026) of the Republic of Korea indicates that in nuclear HRD, key activities will include (i) strengthening HRD training activities reflecting future nuclear workforce supply and demand and (ii) creating an ecosystem where nuclear knowledge is continuously developed and inherited.

Currently, around 36,000 people are employed in the nuclear industry in the Republic of Korea. To train nuclear workers, the Republic of Korea has been developing an education and training system since it adopted nuclear technology in the late 1950s. Annually, approximately 500-600 students graduate from universities with degrees in nuclear engineering and many more students who majored in engineering and natural sciences enter the Korean nuclear industry as well. Sixteen universities in Korea offer nuclear engineering programs, and the heads of departments at these universities are members of the Korean Nuclear Engineering Department Heads Organization (K-NEDHO). K-NEDHO collects opinions on fostering nuclear human resources and operates as a communication channel with the Government.

Hanyang University established the first nuclear engineering department in the Republic of Korea in 1958, and Seoul National University followed in 1959. Nuclear engineering is available as an independent major at Kyunghee University, Chosun University, Seoul National University, Sejong University, Hanyang University, the Ulsan National Institute of Science and Technology (UNIST) and the Korea Advanced Institute of Science and Technology (KAIST).

1. Nuclear engineering as a track (a combination of mechanical or energy engineering with nuclear engineering) is available at Kyungpook National University, Chungang University, Jeju National University, Pusan National University, Dongguk University and Jeonbuk National University.
2. Graduate-level courses only are offered at the KEPCO International Nuclear Graduate School (KINGS), Pohang University of Science and Technology (POSTECH) and UST (University of Science & Technology) KAERI School.

The NSSC implements a human resources development project to develop and provide personnel with awareness and expertise in safety to regulatory bodies, as well as all nuclear-related agencies. The project helps universities related to nuclear energy and radiation establish a course on nuclear safety. Also, to develop and provide nuclear safety experts to industries, academia, research and government organizations, it has supported graduate-level courses that converge various disciplines since 2024.

Many domestic nuclear organizations such as KAERI, KINS, KINAC, KORAD and KHNP also support in-house training centers for education and training and have provided nuclear education and training courses for their staff members as well as other nuclear professionals.

In July 2024, Korea Hydro & Nuclear Power (KHNP) was named the preferred bidder for a new NPP project in the Czech Republic. With an estimated value of approximately USD 17 billion (KRW 23 trillion), the project is poised to become a major milestone in the Republic of Korea’s nuclear exports, subject to final agreement and confirmation.

Accordingly, the Ministry of Science and ICT(MSIT) has initiated a project to cultivate next-generation nuclear experts and is preparing a global training programme for future nuclear professionals.

2.10. STAKEHOLDER INVOLVEMENT

2.10.1. On-line

Social media platforms are frequently used for direct, two-way communication. Energy-related information, including nuclear issues, is delivered in various formats, such as through news outlets, infographics, webtoons and video clips. For example, for the purpose of active public communication and transparent information sharing regarding NPP safety, the following approaches have been pursued: The establishment of an NPP information reliability center, the operation of public voice bulletin boards, and system building for a social network service (SNS) alarm service with major NPP news. Many other programmes are ongoing.

Since 2011, KHNP’s official SNS accounts have actively engaged with the public through multiple outlets such as YouTube, Facebook, Instagram and blog posts, including active communication with the younger generations.

2.10.2. Offline

Publicity actions on nuclear power safety are continuously emphasized throughout available corporate information and exhibition centers at NPPs and at the KHNP headquarters. Additionally, the official communication channel operates sensitive environmental detection facilities and local committees to maintain active trust building among local communities and across different NPP sites.

In accordance with Article 13 of the Act on Nuclear Safety Information Disclosure and Communication, the NSSC establishes and operates the Nuclear Safety Council to communicate with local governments and residents in areas near nuclear facilities. The council serves as a communication channel for exchanging information and consulting on issues related to nuclear safety, radioactive waste safety and concerns raised by local residents regarding nuclear safety.

2.11. INTERNATIONAL COOPERATIONS AND INITIATIVES

The Republic of Korea has signed nuclear cooperative agreements with 29 countries, as well as held joint standing committees with the United States of America, France, the Russian Federation, China, the United Arab Emirates and Saudi Arabia on a regular basis, i.e., annually or biennially. The two main purposes of bilateral cooperation are to advance nuclear technology by securing specific technologies and establish a foundation for overseas promotion by expanding technical exchanges on a long-term basis. The main cooperative areas are nuclear R&D, safety, safeguards and emergency preparedness. Table 9 shows the current status of the joint standing committees with six countries.

On a multilateral level, the Republic of Korea actively participates in international cooperation with the IAEA, the Nuclear Energy Agency of the Organisation for Economic Co-operation and Development (OECD/NEA) and other international cooperative frameworks, including the Generation IV International Forum (GIF) and the International Framework for Nuclear Energy Cooperation (IFNEC).

The Republic of Korea has been a donor state for the IAEA’s technical cooperation programme since 2010. As a longstanding contributor to the Regional Cooperative Agreement (RCA), the Republic of Korea plays a pivotal role in the field of nuclear medicine and radiotherapy. It has been operating three IAEA Collaborating Centers (the Advanced Radiation Technology Institute (ARTI) of Korea Atomic Energy Research Institute (KAERI), Korea Institute of Nuclear Safety (KINS) and KEPCO International Nuclear Graduate School (KINGS)), and one IAEA Anchor Center (Korea Institute of Radiological & Medical Sciences (KIRAMS)). In particular, the Republic of Korea financially contributed to IAEA’s key programmes for peaceful uses of nuclear energy such as Rays of Hope, ZODIAC, SMR Platform, INPRO and the Lise Meitner Programme (LMP) in 2024. The Republic of Korea also serves as a reliable member in numerous IAEA advisory groups and technical working groups. In September 2024, the Republic of Korea was elected as the President of the IAEA General Conference. Ambassador Ham Sang Wook, Permanent Representative to the International Organizations in Vienna, presided over the 68th General Conference of the IAEA.

The Republic of Korea has been an active member in OECD/NEA activities since 1993. The range of participation varies from contributing to joint research activities to joining international discussions within the framework of the OECD/NEA. As of early 2025, the Republic of Korea is participating in 22 of the 31 NEA joint research projects. Among the nine Standing Technical Committees of the OECD/NEA, Korean experts have served as vice chairs for three of them: Dr. Gi Yong Choi on the Committee on the Safety of Nuclear Installations (CSNI), Dr. Dong Geun Cho on the Radiological Waste Management Committee (RWMC) and Dr. Dae Sik Yook on the Committee of Decommissioning and Legacy Management (CDLM). Furthermore, the Republic of Korea has dispatched three Korean experts to the OECD/NEA to further strengthen cooperation between the Republic of Korea and the NEA. As a result of these efforts, the “Roadmap to New Nuclear Ministerial Conference 2025” is planned to be co-hosted by the Ministry of Trade, Industry and Energy of Korea (MOTIE) and the OECD/NEA in Paris.

The Republic of Korea has been a member of the Generation IV International Forum (GIF) since its inception, having joined as a founding member following the Forum's inaugural meeting in 2000. Since 2006, the Republic of Korea has formally participated in the two system arrangements for the Sodium-cooled Fast Reactor (SFR) and the Very High Temperature Reactor (VHTR). the Republic of Korea has also actively participated in the negotiation of the 2025 Framework Agreement, which aims to renew and enhance international cooperation under GIF, and is currently preparing to sign the Agreement. Dr. Jin-Young Cho of KAERI has been serving as the Vice-Chair for Education & Networking since 2025.

Since 2010, the Republic of Korea has also contributed to the activities of the International Framework for Nuclear Energy Cooperation (IFNEC), engaging in multilateral efforts to promote the peaceful use of nuclear energy. The Republic of Korea has shared its experience in the development of nuclear technology systems and their applications with diverse members at every subgroup meeting within the framework, including the Infrastructure Development Working Group (IDWG), the Reliable Nuclear Fuel Services Working Group (RNFSWG) and the Nuclear Supplier and Customer Countries Engagement Group (NSCCEG).

3. NATIONAL LAWS AND REGULATIONS

3.1. REGULATORY FRAMEWORK

3.1.1. Regulatory Authority(s)

To ensure the independence of nuclear safety regulations, the Act on the Establishment and Operation of the Nuclear Safety and Security Commission (NSSC) was enacted and promulgated in 2011. As a result, the NSSC was established as an independent regulatory authority under the Prime Minister's Office to oversee matters related nuclear safety regulation.

The NSSC is mandated to maintain its independence, as stipulated in Article 2 of the NSSC Act, and is legally separated from government ministries and agencies responsible for facilities and activities subject to safety regulation. In particular, Article 3 of the NSSC Act ensures the independence of the NSSC's regulatory decisions by stipulating that deliberations and resolutions related to safety regulation such as licensing, re-licensing, authorization, approval, registration and revocation, the establishment of the Comprehensive Plan for Nuclear Safety and corrective orders under the Nuclear Safety Act are exempt from the direction or supervision of the Prime Minister. This provision guarantees the independence of the regulatory decisions.

In addition, for effective nuclear safety regulations in technical areas, KINS, KINAC, and the Korea Foundation of Nuclear Safety (KoFONS) provide the NSSC with expertise and technical support on the topics of nuclear safety, security and non-proliferation.

3.1.2. Licensing Process

The licensing process for NPPs consists of two steps: the construction permit and the operating license, pursuant to the NSA. When necessary, a licensee may apply for standard design approval and early site approval (Fig. 5).

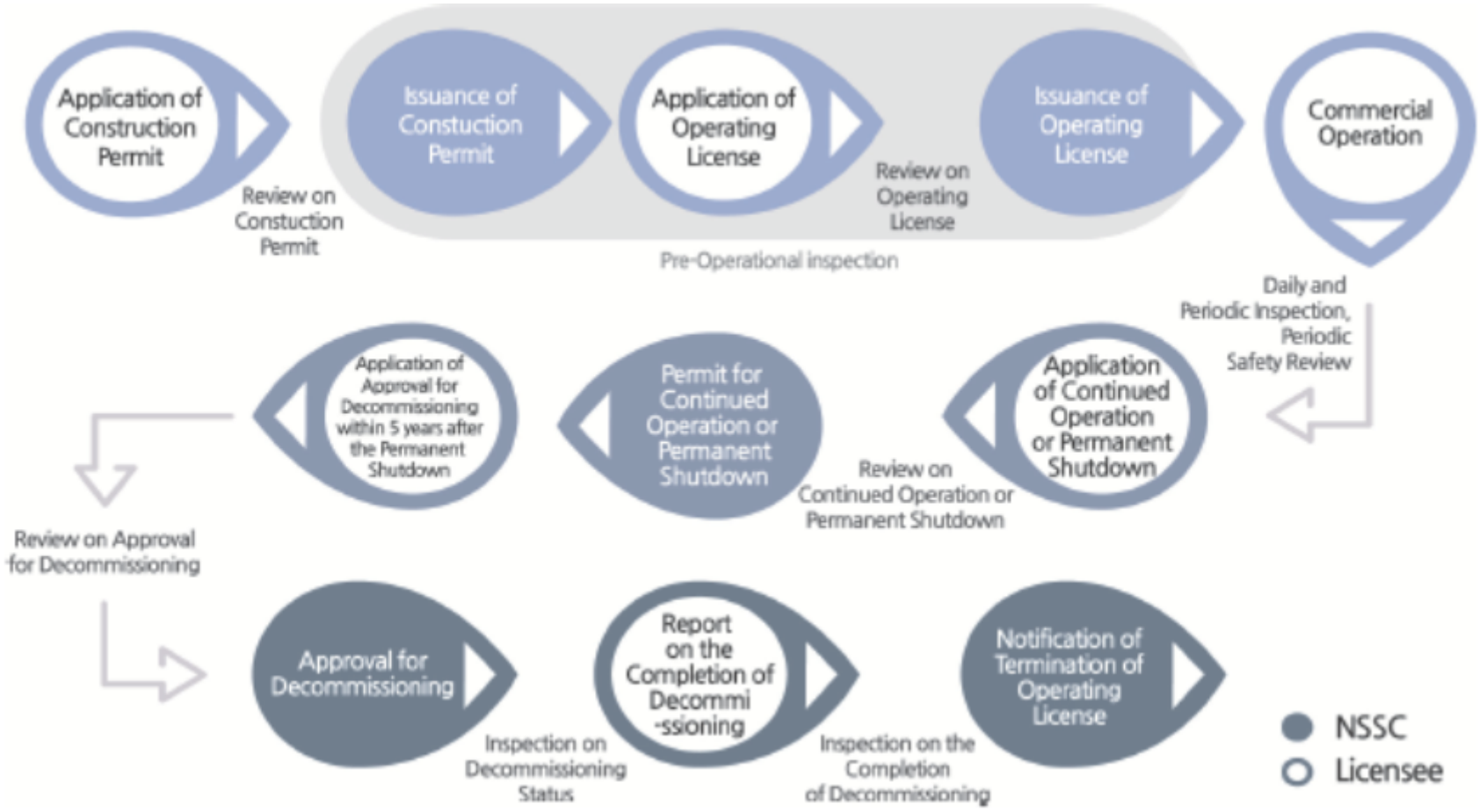


FIG. 5. Licensing process for nuclear power plants.

3.2. MAIN NATIONAL LAWS AND REGULATIONS IN NUCLEAR POWER

National laws related to the development, utilization and safety regulations of nuclear energy are the Atomic Energy Promotion Act and the NSA as well as the Electricity Business Act, the Basic Law of Environmental Policy and others (see Table 3.2).

TABLE 3.2: LAWS CONCERNING NUCLEAR REGULATION

Title	Major contents	Competent authorities	Note
Act on the Establishment and Operation of the NSSC	Provides the particulars on the establishment and operation of the NSSC	NSSC	
Nuclear Safety Act	Provides rules on safety management in the	NSSC	

	research, development, production, use, etc. of nuclear energy		
Act on Physical Protection and Radiological Emergency	Establishes an effective physical protection system for nuclear material and nuclear facilities and provides a legal and institutional basis for preventing radiological disasters and preparing countermeasures against radiological emergencies	NSSC	
Nuclear Liability Act	Provides the procedures and extent of compensation for any damages suffered by individuals from a nuclear accident	NSSC	
Act on Indemnity Agreements for Nuclear Liability	Provides the particulars on a contract between the Government and the operator to make up for any compensation not covered by insurance	NSSC	
Act on Nuclear Safety Information Disclosure and Communication	Provides the particulars on the disclosure and communication of information related to nuclear safety	NSSC	
Act on Protective Action Guidelines against Radiation in the Natural Environment	Provides the particulars on the safety control of radiation to which citizens may be exposed in their daily lives	NSSC	
Korea Institute of Nuclear Safety Act	Provides details on the establishment and operation of KINS	NSSC	
Nuclear Energy Promotion Act	Governs matters related to research on and the development, production and utilization of nuclear energy	Ministry of Science and ICT	Regulates matters related to the promotion of nuclear energy
Electric Utility Act	Provides the basic framework for electric utility operations	Ministry of Trade, Industry and Energy	Regulation of nuclear reactor facilities is delegated via the Nuclear Safety Act
Electric Source Development Promotion Act	Covers special cases relevant to the development of electricity sources	Ministry of Trade, Industry and Energy	Provides special cases for the procedure of selecting nuclear installation sites

Radioactive Waste Management Act	Regulates the efficient management of radioactive waste	Ministry of Trade, Industry and Energy	Specifies the basic requirements for the safe and efficient management of radioactive waste
Framework Act on Firefighting Services	Covers general matters on fire prevention, safety and control	National Fire Agency	Provides the requirements for managing inflammables
Framework Act on Civil Defense	Covers general matters regarding the civil defense system	Ministry of Interior and Safety	Nuclear disasters are covered in the provisions of the Basic Civil Defense Plan established by this Act
Framework Act on the Management of Disasters and Safety	Prescribes basic principles and the framework of national disaster management	Ministry of Interior and Safety	For radiological disasters, the management framework prescribed in the Act on Physical Protection and Radiological Emergency prevails over others

Note: NSSC — Nuclear Safety and Security Commission.; KINS — Korea Institute of Nuclear Safety

All provisions on nuclear safety regulation and radiation protection are prescribed in the NSA. The NSA is therefore the main law concerning safety regulations of nuclear installations.

The legal framework for Nuclear Safety, as shown in Fig. 6, consists of five levels: Act (the NSA), Presidential Decree (Enforcement Decree of the NSA), Ordinance of the Prime Minister (Enforcement Regulations of the NSA), NSSC Regulations (Regulations on Technical Standards for Nuclear Reactor Facilities and Regulations on Technical Standards for Radiation Safety Control) and NSSC Notices.

The NSA stipulates basic and general matters related to nuclear safety regulations, the NSSC, the Comprehensive Plan for Nuclear Safety, construction permits and operating licenses of nuclear installations. Presidential Decrees (the Enforcement Decree of the NSA) are provided for matters commissioned by the NSA, procedures to implement the NSA and administrative matters. The Enforcement Regulations of the NSA stipulate matters delegated from the Enforcement Decree of the NSA. The Regulation on Technical Standards provides details about matters delegated by the NSA and its enforcement decree as well as the technical standards by which to implement them. The NSSC Notice describes matters delegated from the NSA, its enforcement decree, enforcement regulations, technical standards and specific regulatory requirements and standards required for implementing the

laws. In addition, industrial standards applicable to the nuclear industry were endorsed by the regulatory body and applied to the design and operation of nuclear installations.

KINS has developed and utilized regulatory guidelines for specific details required to apply technical standards and requirements as described in laws for the purpose of performing safety regulation work, including reviews of licensing and inspections of nuclear installations. The regulatory standards and guidelines provide detailed descriptions of allowable methods, conditions and specifications to meet the technical standards.

Act	• Nuclear Safety Act, Act on Physical Protection and Radiological Emergency, and Nuclear Liability, etc.	Acts (NSSC)
Enforcement Decree (Presidential Decree)	• Particulars entrusted by the Act • Enforcement Decree of th Nuclear Safety Act and Enforcement Decrees of Other Related Acts	
Enforcement Regulations (Ordiance of the Prime Minister)	• Particulars entrusted by the Act or the Decree and necessary for their enforcement (including detailed procedures and format of documents) • Enforcement Regulations of the Nuclear Safety Act and Enforcement Regulations of Other Related Acts	
Technical Standards (Administrative Regulation)	• Brief technical standards as delegated by the Act and/or Decree • Regulations on technical standards for Nuclear Reactor Facilities, etc,. Regulations on Technical Standards for Radiological Safety Management, etc.	
NSSC Notice (Administrative Regulation)	• Details on technical standards, procedures of formats as delegated by the Act, Decree and/or Regulation • Notice on Technical Standards for the Location of Nuclear Installations	
Regulatory Standards	• Futher particulars or interpertation of technical standards	Guidelines (KINS)
Regulatory Guidelines	• Acceptable methods, conditions, specifications, etc.	
Guidelines for Safety Review and Inspection	• Standard Review Plan, Inspection Manuals, etc	
Industrial Code and Standards	• KEPIC, ASME, IEEE, ASTM, etc.	

FIG. 6. Legal framework for nuclear safety regulations.

APPENDIX 1. INTERNATIONAL, MULTILATERAL AND BILATERAL AGREEMENTS

Agreements with the IAEA

Agreement : Agreement between the Government of the Republic of Korea and the International Atomic Energy Agency for the Application Safeguards in connection with the Treaty on the Non-Proliferation of Nuclear Weapons
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; November 1975

Agreement : Exchange of Notes between the Government of the Republic of Korea and the International Atomic Energy Agency concerning Technical Assistance
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; May 1961

Agreement : Exchange of Notes for the Services (Application of Radioisotope in Agriculture) of Technical Assistance Experts between the Republic of Korea and the International Atomic Energy Agency
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; October 1962.

Agreement : Exchange of Notes for the Services (Experimental Nuclear Physics) of Technical Assistance Experts between the Republic of Korea and the International Atomic Energy Agency
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; December 1962

Agreement : Exchange of Notes for the Services (Radio-Chemistry) of Technical Assistance Experts between the Government of the Republic of Korea and the International Atomic Energy Agency
Countries : Korea, Republic of

Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; April 1963

Agreement : Protocol Additional to the Agreement between the Government of the Republic of Korea and the International Atomic Energy Agency for the Application of Safeguards in connection with the Treaty on the Non-Proliferation of Nuclear Weapons
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; February 2004

Agreement : Revised Supplementary Agreement concerning the Provision of Technical Assistance by the International Atomic Energy Agency to the Government of the Republic of Korea
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of effect; January 1980

Agreement : Supplementary Agreement on Provision of Technical Assistance by the International Atomic Energy Agency to the Government of the Republic of Korea
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; April 1967

International Treaties

Agreement : Agreement Extending the Framework Agreement for International Collaboration on Research and Development of Generation IV Nuclear Energy Systems
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; February 2015

Agreement : Agreement on Cooperation Among the Original Members of Korean Peninsula Energy Development Organization

Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; September 1997

Agreement : Agreement on the Establishment of the ITER International Fusion Energy Organization for the Joint Implementation of the ITER Project
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; October 2007

Agreement : Agreement on the Establishment of the Korean Peninsula Energy Development Organization (KEDO)
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; March 1995

Agreement : Agreement on the Privileges and Immunities of the International Atomic Energy Agency
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; January 1962

Agreement : Agreement on the Privileges and Immunities of the ITER International Fusion Energy Organization for the Joint Implementation of the ITER Project
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; October 2007

Agreement : Agreement to Extend the Regional Cooperative Agreement for Research Development and Training Related to Nuclear Science and Technology (1987)
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; December 1992.

Agreement : Agreement to Extend the Regional Cooperative Agreement for Research, Development and Training Related to Nuclear Science and Technology (1972)
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; July 1978

Agreement : Amendment of Article VI of the Statute of the International Atomic Energy Agency
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; June 1973

Agreement : Amendment of Article VI. A.3 of the Statute of the International Atomic Energy Agency
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; January 1963

Agreement : Amendment to Convention on the Physical Protection of Nuclear (Convention on the Physical Protection of Nuclear Material and Nuclear Facilities Amendment),
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; May 2016

Agreement : Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; July 1990

Agreement : Convention on Early Notification of a Nuclear Accident
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :

Notes : Date of Effect; July 1990

Agreement : Convention on Nuclear Safety
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; October 1996

Agreement : Fifth Agreement to Extend the 1987 Regional Cooperative Agreement for Research, Development, and Training Related to Nuclear Science and Technology
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; June 2012.

Agreement : Fourth Agreement to Extend the 1987 Regional Cooperative Agreement for Research, Development, and Training Related to Nuclear Science and Technology
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; July 2007

Agreement : Framework Agreement for International Collaboration on Research and Development of Generation IV Nuclear Energy Systems
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; November 2005

Agreement : International Convention for the Suppression of Acts of Nuclear Terrorism
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; June 2014

Agreement : Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management
Countries : Korea, Republic of
Signature Date :

Ratification Date :
In-Force Date :
Notes : Date of Effect; December 2002

Agreement : Protocol Amending the Agreement on the Establishment of the Korean Peninsula Energy Development Organization
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; September 1997

Agreement : Regional Cooperative Agreement for Research Development and Training Related to Nuclear Science and Technology
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; December 2017

Agreement : Regional Cooperative Agreement for Research, Development and Training Related to Nuclear Science and Technology
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; October 1974

Agreement : Regional Cooperative Agreement for Research, Development and Training Related to Nuclear Science and Technology (RCA, 1987)
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; December 1987

Agreement : Second Agreement to Extend the 1987 Regional Cooperative Agreement for Research, Development and Training Related to Nuclear Science and Technology
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; June 1997

Agreement : Second Agreement to Extend the Regional Cooperative Agreement for Research, Development and Training Related to Nuclear Science and Technology (1972)
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; December 1982

Agreement : Statute of the International Atomic Energy Agency
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of effect; August 1957

Other Relevant International Treaties

Agreement : Agreement concerning Cooperation in Peaceful Uses of Nuclear Energy and the Transfer of Nuclear Material
Countries : Australia, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; May 1979

Agreement : Agreement concerning the Collaboration in the field of the Pacific Utilization of Nuclear Energy
Countries : Belgium, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; March 1981

Agreement : Agreement for Cooperation between the Government of the Republic of Korea and the European Atomic Energy Community Represented by the Commission of the European Communities in the field of Fusion Energy Research
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; December 2006

Agreement : Agreement for Cooperation concerning Civil Uses of Atomic Energy

Countries : Korea, Republic of, United States of America
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; March 1973

Agreement : Agreement for Cooperation concerning Civil Uses of Atomic Energy
Countries : Korea, Republic of, United States of America
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; February 1956

Agreement : Agreement for Cooperation Concerning Peaceful Uses of Nuclear Energy
Countries : Korea, Republic of, United States of America
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; November 2015

Agreement : Agreement for Cooperation in Research into the Peaceful Uses of Nuclear Energy
Countries : Korea, Republic of, Viet Nam
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; January 1997

Agreement : Agreement for Cooperation in the Development and Application of Atomic Energy for Peaceful Purposes
Countries : Canada, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; January 1976

Agreement : Agreement for Cooperation in the Peaceful Uses of Atomic Energy
Countries : Indonesia, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; December 2006

Agreement : Agreement for Cooperation in the Peaceful Uses of Nuclear Energy
Countries : Kazakhstan, Korea, Republic of

Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; August 2010

Agreement : Agreement for Cooperation in the Peaceful Uses of Nuclear Energy
Countries : Korea, Republic of, United Kingdom
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; November 1991

Agreement : Agreement for Cooperation in the Peaceful Uses of Nuclear Energy
Countries : Korea, Republic of, Mexico
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; July 2013

Agreement : Agreement for Cooperation in the Peaceful Uses of Nuclear Energy
Countries : Korea, Republic of, Türkiye
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; June 1999

Agreement : Agreement for Cooperation in the Peaceful Uses of Nuclear Energy
Countries : Korea, Republic of, United Arab Emirates
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; January 2010

Agreement : Agreement for Cooperation in the Peaceful Uses of Nuclear Energy
Countries : Chile, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; September 2006

Agreement : Agreement for Cooperation in the Peaceful Uses of Nuclear Energy
Countries : Korea, Republic of, Saudi Arabia
Signature Date :

Ratification Date :
In-Force Date :
Notes : Date of Effect; August 2012

Agreement : Agreement for Cooperation in the Peaceful Uses of Nuclear Energy
Countries : Korea, Republic of, Ukraine
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; June 2008

Agreement : Agreement for Cooperation in the Peaceful Uses of Nuclear Energy
Countries : Hungary, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; January 2014

Agreement : Agreement for Cooperation in the Peaceful Uses of Nuclear Energy
Countries : Korea, Republic of, South Africa
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; February 2011

Agreement : Agreement for Cooperation in the Peaceful Uses of Nuclear Energy
Countries : Brazil, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; July 2005

Agreement : Agreement for Cooperation in the Peaceful Uses of Nuclear Energy
Countries : Argentina, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; September 1997

Agreement : Agreement for Cooperation in the Peaceful Uses of Nuclear Energy
Countries : China, Korea, Republic of
Signature Date :
Ratification Date :

In-Force Date :
Notes : Date of effect; February 1995

Agreement : Agreement for Cooperation in the Peaceful Uses of Nuclear Energy
Countries : Czech Republic, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; June 2001

Agreement : Agreement for Cooperation in the Peaceful Uses of Nuclear Energy
Countries : India, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; October 2011

Agreement : Agreement for Cooperation in the Peaceful Uses of Nuclear Energy
Countries : Finland, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; January 2015

Agreement : Agreement for Cooperation in the Peaceful Uses of Nuclear Energy
Countries : Japan, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; January 2012

Agreement : Agreement for Cooperation in the Peaceful Uses of Nuclear Energy
Countries : Egypt, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; June 2002

Agreement : Agreement for Cooperation in the Peaceful Uses of Nuclear Energy
Countries : Jordan, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :

Notes : Date of Effect; May 2009

Agreement : Agreement for Cooperation in the Peaceful Uses of Nuclear Energy
Countries : Germany, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; April 1986

Agreement : Agreement for Cooperation in the Peaceful Uses of Nuclear Energy in the fields of Industry, Research and Development
Countries : Korea, Republic of, Romania
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; September 2004

Agreement : Agreement for the Application of Safeguards
Countries : Korea, Republic of, United States of America
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; January 1968 # the International Atomic Energy Agency

Agreement : Agreement for the Application of Safeguards
Countries : France, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; September 1975 # the International Atomic Energy Agency

Agreement : Agreement on Cooperation in the Peaceful Uses of Nuclear Energy
Countries : Indonesia, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; October 2011

Agreement : Agreement on Cooperationin the Peaceful Uses of Atomic Energy
Countries : Kazakhstan, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :

Notes : Date of Effect; September 2004

Agreement : Agreement on the Peaceful Uses of Nuclear Energy
Countries : Korea, Republic of, Russian Federation
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; October 1999

Agreement : Agreement relating to Peaceful Utilization of Atomic Energy
Countries : France, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; April 1981

Agreement : Agreement to Amend the Agreement for the Application of Safeguards
Countries : Korea, Republic of, United States of America
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; March 1973 # the International Atomic Energy Agency

Agreement : Amendment to Agreement for Cooperation concerning Civil Uses of Atomic Energy
Countries : Korea, Republic of, United States of America
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; June 1974

Agreement : Amendment to Agreement for Cooperation concerning Civil Uses of Atomic Energy
Countries : Korea, Republic of, United States of America
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; January 1966

Agreement : Amendment to Agreement for Cooperation concerning Civil Uses of Atomic Energy
Countries : Korea, Republic of, United States of America
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; May 1958

Agreement : Arrangement between the Korean Ministry of Science and Technology and the United States Department of Energy concerning Research And Development in Nuclear Material Control, Accountancy, Verification, Physical Protection, and Advanced Containment and Surveillance Technologies for International Safeguards Applications
Countries : Korea, Republic of, United States of America
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; September 1994

Agreement : Arrangement between the Ministry of Science and Technology (MOST), the Republic of Korea and the United States Nuclear Regulatory Commission (USNRC) for the Exchange of Technical Information and Cooperation in Regulatory and Safety Research Matters
Countries : Korea, Republic of, United States of America
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; June 1995

Agreement : Basic Agreement on Scientific and Technical Cooperation
Countries : Korea, Republic of, Spain
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; March 1976

Agreement : Exchange of Notes concerning a Grant by the Government of the United States of America in the Acquisition of Certain Nuclear Research and Training Equipment and Materials
Countries : Korea, Republic of, United States of America
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; November 1960

Agreement : Exchange of Notes concerning Cooperation in Nuclear Energy
Countries : Japan, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; May 1990

Agreement : Exchange of Notes concerning on Agreement concerning Cooperation in Peaceful Uses of Nuclear Energy and Transfer of Nuclear Material

Countries : Australia, Korea, Republic of
Signature Date : 1979-05-02
Ratification Date :
In-Force Date :
Notes : Date of Effect; November 1997

Agreement : Exchange of Notes concerning Reciprocal Cooperation for the Peaceful Utilization of Atomic Energy
Countries : France, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; October 1974

Agreement : Exchange of Notes constituting an Agreement relating to the Transfer of Tritium Items for the Wolsong Tritium Removal Facility
Countries : Canada, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; January 2001

Agreement : Exchange of Notes for the Amendment of the Agreement for Cooperation in the Development and Application of Atomic Energy for Peaceful Purposes
Countries : Canada, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; July 2002

Agreement : Exchange of Notes for the Extension of the Agreement for Cooperation concerning Civil Uses of Atomic Energy
Countries : Korea, Republic of, United States of America
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; March 2014

Agreement : Exchange of Notes for the Supply of the Radionuclide Batteries to the Republic of Korea
Countries : Germany, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; October 1979

Agreement : Exchange of Notes on Retransfer of Nuclear Material
Countries : Canada, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; June 1989

Agreement : Exchange of Notes on the Republic of Korea's joining the OECD Nuclear Energy Agency between the Government of the Republic of Korea and the Organization for Economic Cooperation and Development
Countries : Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; May 1993

Agreement : Exchange of Notes Relating to the Transfer of Certain Nuclear Technologies in the Course of the Joint Fuel Cycle Study
Countries : Korea, Republic of, United States of America
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; July 2013

Agreement : Lease Agreement for Special Nuclear Material between the Government of the Republic of Korea and the United States Atomic Energy Commission acting for and on behalf of the Government of the United States of America
Countries : Korea, Republic of, United States of America
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; June 1963

Agreement : Lease Agreement for the Special Nuclear Material between the United States Atomic Energy Commission acting for and on behalf of the Government of the United States of America and the Government of the Republic of Korea
Countries : Korea, Republic of, United States of America
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; September 1961.

Agreement : Lease Agreement for the Special Nuclear Material between the United States Atomic Energy Commission acting for and on behalf of the Government of the United States of America and the Government of the Republic of Korea
Countries : Korea, Republic of, United States of America
Signature Date :

Ratification Date :
In-Force Date :
Notes : Date of Effect; June 1960

Agreement : Memorandum of Understanding on the Establishment and Operation of the Korea-Canada Joint Coordinating Committee on Nuclear Energy
Countries : Canada, Korea, Republic of
Signature Date :
Ratification Date :
In-Force Date :
Notes : Date of Effect; April 1983

APPENDIX 2. MAIN ORGANIZATIONS, INSTITUTIONS AND COMPANIES INVOLVED IN NUCLEAR POWER RELATED ACTIVITIES

National Authorities

Organization Name	Address	Contact	Website
National Nuclear Safety and Security Commission (NSSC)	13F, 3, Sowol-ro, Jung-gu, Seoul, 04528, Republic of Korea	tel.: +82-2-397-7300 fax: +82-2-397-7246	
Ministry of Science & ICT (MSIT)	410, Sejong Finance Center II, 194, Gareum-ro, Sejong-si, 30121, Republic of Korea	tel.: +82-44-202-4180 fax: +82-44-202-6025	
Ministry of Trade, Industry and Energy (MOTIE)	402 Hannuri-daero, Sejong-si, 30118, Republic of Korea	tel: +82-1577-0900	

Nuclear Research Institutes

Organization Name	Address	Contact	Website
Korea Institute of Nuclear Safety (KINS)	34 Gwahak-ro (Kusong-dong), Yusong-gu,, Daejeon, 305-338, Republic of Korea	tel.: +82-42-868-0000 fax: +82-42-861-1700	
Korea Atomic Energy Research Institute (KAERI)	1045 Daeduk-daero (Dukjin-dong), Yusong-gu, Daejeon, 305-353, Republic of Korea	tel.: +82-42-868-2000 fax: +82-42-868-2196	
Korea Cancer Centre Hospital (KCCH)	75 Nowon-gil (Gongneung-dong), Nowon-gu, Seoul, 139-706, Republic of Korea	tel.: +82-2-970-2114 fax: +82-2-978-2005	

Other Nuclear Organizations

Organization Name	Address	Contact	Website
Korea Electric Power Corporation (KEPCO)	55 Jeollyeok-ro, Naju-si, Jeollanam-do, 58217, Republic of Korea	tel.: +82-61-345-3114	
Doosan Enerbility	22, Doosan Volvo-ro, Seongsam-gu, Changwon-si, Gyeongnam, 51711, Republic of Korea	tel.: +82-55-278-6114 fax: +82-55-278-8477	
Korea Hydro & Nuclear Power Co. (KHNP)	1655, Bulguk-ro, Munmudaewang-myeon, Gyeongju-si, Gyeonsangbuk-do, Republic of Korea	tel.: +82-54-704-2114	
Korea Association for Radioisotope Association (KARA)			
Korea Nuclear International Cooperation Foundation (KONICOF)			
Korea Atomic Industrial Forum (KAIF)			
Korea Foundation of Nuclear Safety (KoFONS)			
KEPCO Nuclear Fuel Co. (KEPCO NF)	989 Daeduk-daero (Deokjin-dong), Yuseong-gu, Daejeon, 305-353, Republic of Korea	tel.: +82-42-868-1000 fax: +82-42-868-1219	
KEPCO Engineering Construction Co. (KEPCO E&C)	269, Hyeoksin-ro, Gimcheon-si, Gyeongsangbuk-do 39660, Republic of Korea	tel.: +82-54-421-3114	
KEPCO Plant Services and Engineering Co. (KEPCO KPS)	45 Jeon gja-ilro, Bundang-gu, Seongnam-si, Gyeonggi-do, 463-726, Republic of Korea	tel: +82-61-345-0114	
Korean Nuclear Society (KNS)			

REFERENCES

Number	Source	Link

Not Applicable

COORDINATOR INFORMATION

Mr. Dongyun Lee
Division Head, Strategic Cooperation Division, Global Cooperation Center
Korea Nuclear International Cooperation Foundation (KONICOF)
989-111 Daedeokdaero, Yuseong-Gu, Daejeon 34057, Republic of Korea
T : +82 42 867 0169 / F : +82 42 867 0171
E : dylee@konicof.or.kr