

EXECUTIVE SUMMARY

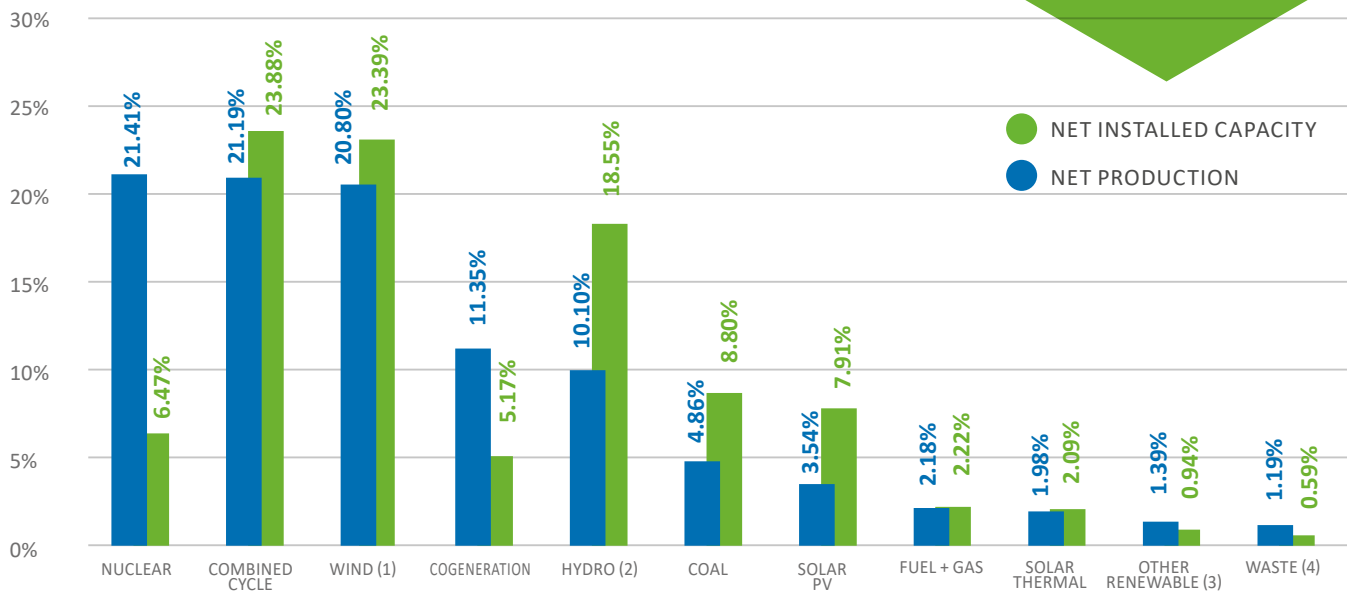
NUCLEAR POWER IN SPAIN

The net electrical power produced by all seven Spanish nuclear power stations during 2019 was 55,824GWh, which amounted to 21.41% of the country's total net electrical production. Gross output stood at 58,395GWh. For another year running, nuclear power was the source that generated the most electricity in the Spanish electricity system.

Nuclear production accounted for 36.15% of all emissions-free electricity generated in Spain in 2019 and was the source that most CO₂ emissions prevented.

The installed net power of all Spanish nuclear power plants as of December 31, 2019 was 7,117 MW, 6.47% of the total net capacity installed in the country. On the other hand, gross power totaled 7,398.7 MW.

**NUCLEAR POWER
PRODUCED MORE
THAN 36% OF
ALL CO₂ - FREE
ELECTRICITY
IN 2019**



(1) Including wind-hydro / (2) Including pumping turbination / (3) Including biogas, biomass, marine hydro and geothermal power / (4) Including renewable and non-renewable waste. Source: Foro Nuclear with data from REE

OPERATING LICENSES

In Spain, the lifespan of nuclear power plants is not set for a fixed amount of time. Operating licenses are renewed after the Nuclear Safety Council studies each case and the relevant Ministry grants them.

On March 22, 2019, Centrales Nucleares Almaraz-Trillo, A.I.E. presented its application for the renovation of the operation authorizations in force for unit I of the Almaraz nuclear power plant until November 1, 2027 and of unit II until October 31, 2028. Similarly, on March 27, 2019 the Asociación Nuclear Ascó-Vandellós II, A. I. E. presented the corresponding application for renovation of the operation authorization of the Vandellós II nuclear power plant until July 26, 2030.

NPP	DATE OF CURRENT LICENSE	PERIOD OF VALIDITY	NEXT RENEWAL
Almaraz I	June 8, 2010	10 years	June 2020
Almaraz II	June 8, 2010	10 years	June 2020
Ascó I	October 2, 2011	10 years	October 2021
Ascó II	October 2, 2011	10 years	October 2021
Cofrentes	March 20, 2011	10 years	March 2021
Trillo	November 17, 2014	10 years	November 2024
Vandellós II	July 26, 2010	10 years	July 2020

Source: Foro Nuclear

SPENT FUEL MANAGEMENT

Spanish nuclear power plants store irradiated fuel in their spent fuel pools and, once the pools are full, in Individualized Temporary Dry Storage Facilities (ATIs). Trillo, Ascó, Almaraz and José Cabrera (which is currently undergoing dismantling) each have an ATI that is already in service. Santa María de Garoña (in the pre-dismantling stage) has finished building its own ATI, but it is still not in operation, whereas Cofrentes plans to put in service its own storage facility in 2020.

As of December 31, 2019, the number of irradiated fuel elements that were stored temporarily at Spanish nuclear power plants stood at 16,324, of which 14,475 were kept in the pools and 1,849 in the ATIs.

IN THE WORLD THERE ARE 52 NUCLEAR REACTORS IN CONSTRUCTION AND NEAR 450 IN OPERATION

NUCLEAR POWER AROUND THE WORLD

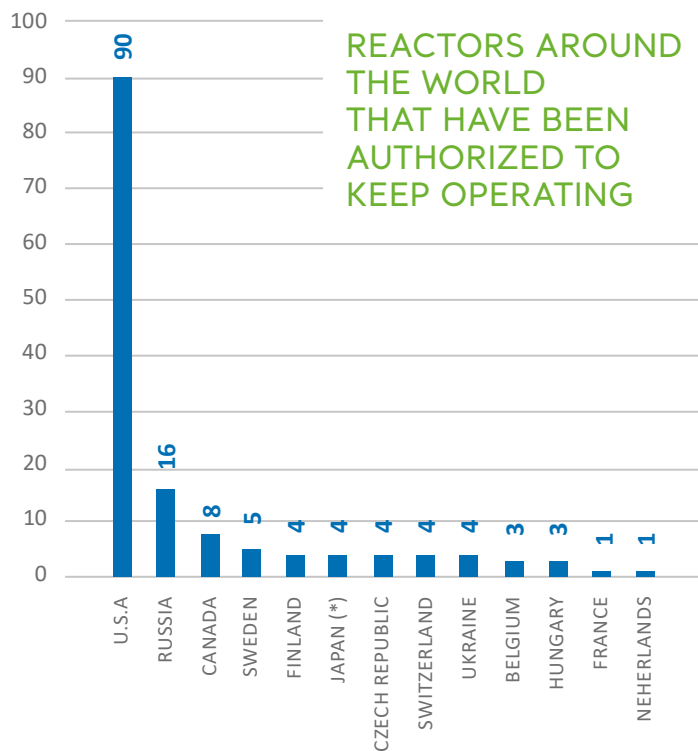
As of December 31, 2019, **there were 447 reactors in a position to operate in 31 countries.** 2,701.01 TWh of electricity from nuclear sources were produced in 2019, which amounts approximately to 11% of the all electricity consumed worldwide. **Another 52 new reactors were under construction in 20 countries.**

During 2018, 6 reactors were connected to the grid and construction of 3 began. Within the European Union, 14 of the 28 member states had 124 reactors in operation, which outputted 26% of all electricity consumed in the E.U. Another five units were currently under construction: 2 in Slovakia and 1 in Finland, France and the U.K. each.

CONTINUITY OF OPERATION OF NUCLEAR POWER PLANTS

The continued, safe operation of nuclear power plants is an energy production strategy that many countries have adopted.

Thus, as of December 31, 2019 there were 147 nuclear reactors in the world that had been authorized by the different regulatory bodies to operate beyond 40 years. For the first time, two reactors in the United States have received authorization to operate for 80 years.



(*) These 4 Japanese reactors have been shut down since March 2011

Data valid as of December 31, 2019

Source: Foro Nuclear with data from PRIS-OIEA, NEA, NRC, Rostechnadzor, CNSC, SSM, SJUB, STUK, NRA/Jaif, ENSI, SNRIU, FANC, HAEA, ASN and ANVS

THE SPANISH NUCLEAR INDUSTRY

A large number of Spanish companies have focused their activity on the nuclear sector, leading to the creation a competitive, experienced industry that serves both the Spanish market and a growing international market.

The internationalization of nuclear activities has gained traction in recent years: Spanish nuclear sector companies are currently involved in projects in 40+ countries.

The Spanish nuclear industry is present throughout the entire nuclear fuel cycle chain of value and is prepared to tackle the continuity of operation of Spanish nuclear power plants.

WHAT IS FORO NUCLEAR?

The Spanish Nuclear Industry Forum is the association that represents the interests of the nuclear industry in Spain. It brings more than 50 companies and organizations under the same roof, including electric utilities, nuclear power plants, engineering firms, service companies and system and large component suppliers, as well as industry associations, foundations and universities. It promotes its international presence and supports maintaining and continuing the operation of Spanish nuclear power plants.

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