

European Nuclear Power Industry Overview

European Nuclear Power - Industry Map

The European nuclear power industry is under significant pressure to remain economically viable in tough market conditions. With ageing nuclear plants, low power prices, substantial renewable energy subsidies and nuclear power taxes; keeping plants profitable is the primary challenge faced by operators and one that must be overcome to ensure the continued operation of the European nuclear fleet.

Nuclear Energy Insider's Industry Map provides you with all you need to know on Europe's operating nuclear power plants and where the major challenges lie for them to remain economically viable.



All data courtesy of:

World Nuclear Association Country Profiles - www.world-nuclear.org
and IAEA Power Reactor Information System - <https://www.iaea.org/pris>

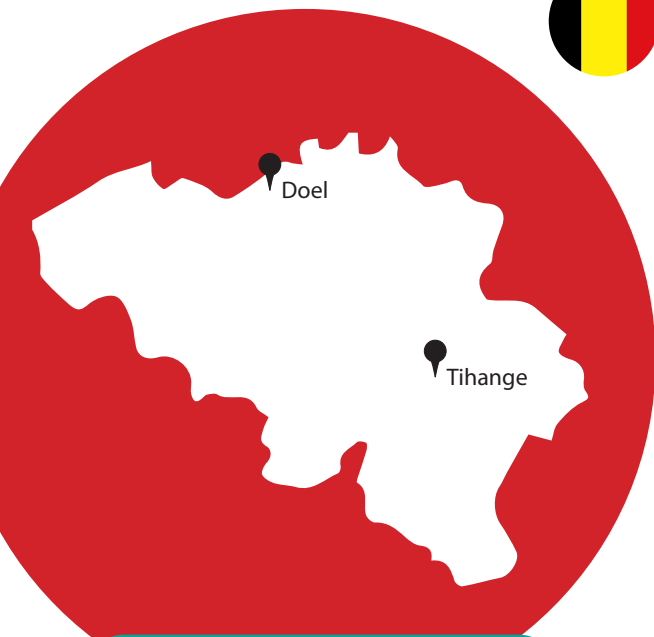


UNITED KINGDOM

Number of Reactors: **15**
 Average Age of Reactors: **32**
 Total Capacity: **8,883 MWe**
 Energy Availability 2014: **70.3%**
 Nuclear Share: **17.2%**

Plant	Type	Present Capacity (MWe net)	First Power	Expected Shutdown
Dungeness B 1&2	AGR	2 x 520	1983 & 1985	2028
Hartlepool 1&2	AGR	595, 585	1983 & 1984	2019 or 2024
Heysham I 1&2	AGR	580, 575	1983 & 1984	2019
Heysham II 1&2	AGR	2 x 610	1988	2023
Hinkley Point B 1&2	AGR	475, 470	1976	2023
Hunterston B 1&2	AGR	475, 485	1976 & 1977	2023
Torness 1&2	AGR	590, 595	1988 & 1989	2023
Sizewell B	PWR	1198	1995	2035

Combined Years of Operation Remaining **70 Years**



BELGIUM

Number of Reactors: **7**
 Average Age of Reactors: **36**
 Total Capacity: **5,943 MWe**
 Energy Availability 2014: **61.6%**
 Nuclear Share: **47.5%**

Reactor	Type	Present Capacity (MWe net)	First Power	Expected Shutdown
Doel 1	PWR	433	1974	2025
Doel 2	PWR	433	1975	2025
Doel 3	PWR	1006	1982	2022
Doel 4	PWR	1047	1985	2025
Tihange 1	PWR	962	1975	2025
Tihange 2	PWR	1008	1982	2023
Tihange 3	PWR	1054	1985	2025

Combined Years of Operation Remaining **58 Years**

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BULGARIA

Number of Reactors: **2**
 Average Age of Reactors: **27**
 Total Capacity: **1,926 MWe**
 Energy Availability 2014: **88.8%**
 Nuclear Share: **33.6%**

Reactor	Type	Model	Present Capacity (MWe net)	First Power	30-Year Life To
Kozloduy 5	VVER-1000	V-320	963	11/87	2017*
Kozloduy 6	VVER-1000	V-320	963	8/91	2021*

*Plans to extend plant life to 50-60 years began in 2012



CZECH REPUBLIC

Number of Reactors: **6**
 Average Age of Reactors: **25**
 Total Capacity: **3,904 MWe**
 Energy Availability 2014: **83.8%**
 Nuclear Share: **35.8%**

Reactor	Type	Model	Present Capacity (MWe net)	First Power	Licence To
Dukovany 1	VVER-440	V-213	468	1985	2025
Dukovany 2	VVER-440	V-213	471	1986	2026
Dukovany 3	VVER-440	V-213	468	1986	2026
Dukovany 4	VVER-440	V-213	471	1987	2027
Temelin 1	VVER-1000	V-320	1023	2000	2020
Temelin 2	VVER-1000	V-320	1003	2003	2022

Combined Years of Operation Remaining **50 Years**



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FINLAND

Number of Reactors: **4**
 Average Age of Reactors: **37**
 Total Capacity: **2,741 MWe**
 Energy Availability 2014: **93.7%**
 Nuclear Share: **34.6%**

Reactor	Type	Model	Present Capacity (MWe net)	First Power	Licence To
Loviisa 1	VVER-440	V-213	488	1977	2027
Loviisa 2	VVER-440	V-213	488	1980	2030
Olkiluoto 1	BWR	-	885	1978	2039
Olkiluoto 2	BWR	-	880	1980	2042
Combined Years of Operation Remaining					74 Years



FRANCE

Number of Reactors: **58**
 Average Age of Reactors: **30**
 Total Capacity: **63,130 MWe**
 Energy Availability 2014: **83.8%**
 Nuclear Share: **35.8%**

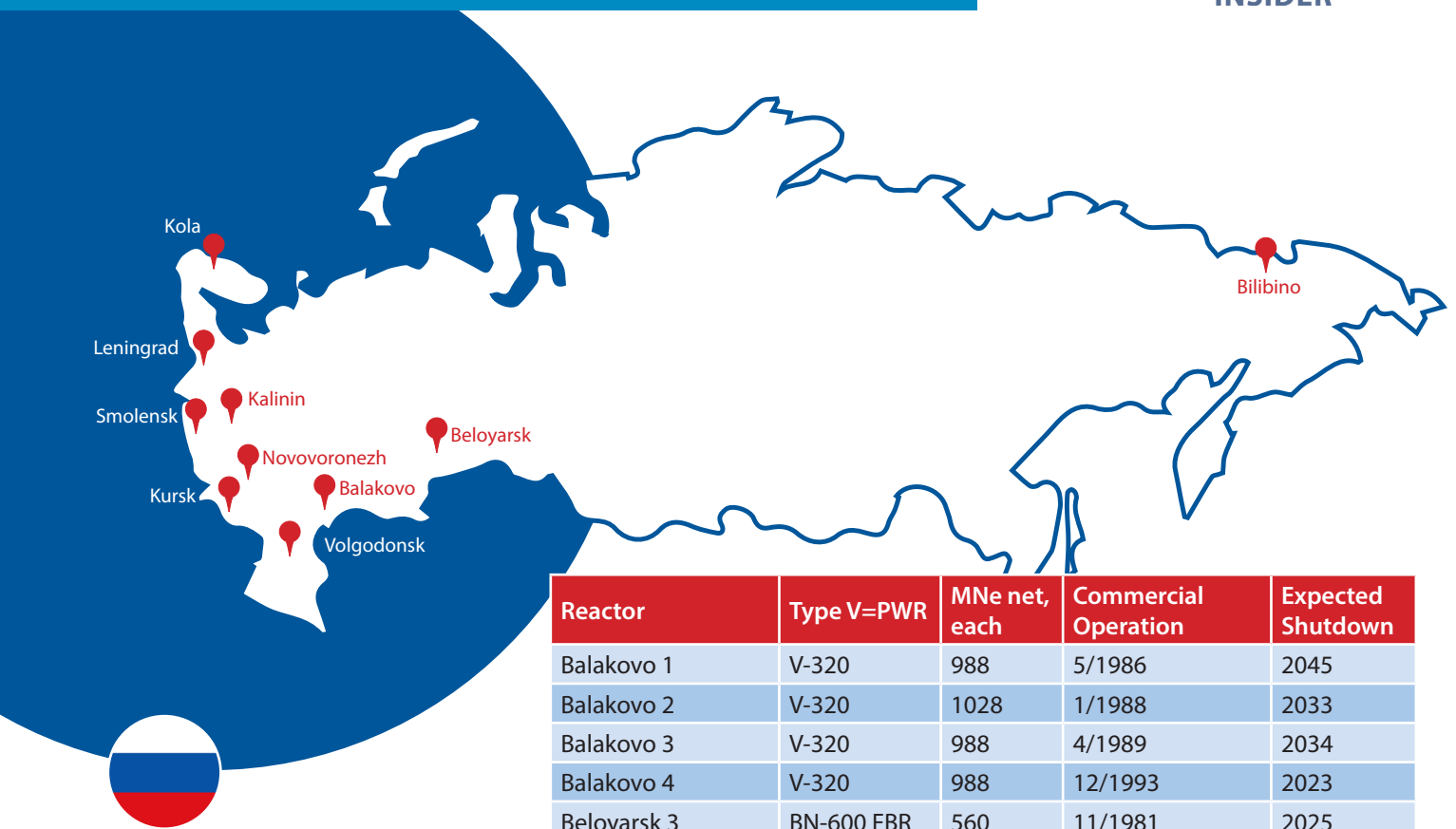
Class	Reactor	MWe net	Commercial Operation	
900MWe	Blayais 1-4	910	12/81, 2/83, 11/83, 10/83	
	Bugey 2-3	910	3/79, 3/79	
	Bugey 4-5	880	7/79-1/80	
	Chinon B 1-4	905	2/84, 8/84, 3/87, 4/88	
	Cruas 1-4	915	4/84, 4/85, 9/84, 2/85	
	Dampierre 1-4	890	9/80, 2/81, 5/81, 11/81	
	Fessenheim 1-2	880	12/77, 3/78	
	Gravelines B 1-4	910	11/80, 12/80, 6/81, 10/81	
	Gravelines C 5-6	910	1/85, 10/85	
	Saint-Laurent B 1-2	915	8/83, 8/83	
	Tricastin 1-4	915	12/80, 12/80, 5/81, 11/81	
	1300MWe	Belleville 1 & 2	1310	6/88, 1/89
		Cattenom 1-4	1300	4/87, 2/88, 2/91, 1/92
		Flamanville 1-2	1330	12/86, 3/87
Golfech 1-2		1310	2/91, 3/94	
Nogent s/Seine 1-2		1310	2/88, 5/89	
Paluel 1-4		1330	12/85, 12/85, 2/86, 6/86	
Penly 1-2		1330	12/90, 11/92	
Saint-Alban 1-2		1335	5/86, 3/87	
N4 - 1450MWe	Chooz B 1-2	1500	12/96, 1999	
	Civaux 1-2	1495	1999, 2000	

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RUSSIA

Number of Reactors: **35**
 Average Age of Reactors: **30**
 Total Capacity: **26,053 MWe**
 Energy Availability 2014: **81%**
 Nuclear Share: **18.6%**

Reactor	Type V=PWR	MNe net, each	Commercial Operation	Expected Shutdown
Balakovo 1	V-320	988	5/1986	2045
Balakovo 2	V-320	1028	1/1988	2033
Balakovo 3	V-320	988	4/1989	2034
Balakovo 4	V-320	988	12/1993	2023
Beloyarsk 3	BN-600 FBR	560	11/1981	2025
Beloyarsk 4	BN-800 FBR	789	(2016)	-
Bilibino 1-4	LWGR EGP-6	11	4/1974-1/1977	2019-22
Kalinin 1	V-338	950	6/1985	2025
Kalinin 2	V-338	950	3/1987	2032
Kalinin 3	V-320	988	11/2005	2034
Kalinin 4	V-320	950	9/2012	2042
Kola 1-2	V-230	432, 411	12/1973, 2/1975	2019, 2020
Kola 3-4	V-230	411	12/1982, 12/1984	2026, 2039
Kursk 1&2	RBMK	1020, 971	10/1977, 8/1979	2022, 2024
Kursk 3	RBMK	971	3/1984	2029
Kursk 4	RBMK	925	2/1986	2030
Leningrad 1	RBMK	925	11/1974	2019
Leningrad 2	RBMK	971	2/1976	2021
Leningrad 3	RBMK	971	6/1980	2025
Leningrad 4	RBMK	925	8/1981	2026
Novovoronezh 3&4	V-179	385	6/1972, 3/1973	2016, 2017
Novovoronezh 5	V-187	950	2/1981	2035
Smolensk 1	RBMK	925	9/1983	2028
Smolensk 2	RBMK	925	7/1985	2030
Smolensk 3	RBMK	925	1/1990	2024
Rostov 1	320	990	3/2001	2020
Rostov 2	320	990	10/2010	2040
Rostov 3	320	1011	9/2015	2045

Combined Years of Operation Remaining **421 Years**

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SWEDEN

Number of Reactors: **9**
 Average Age of Reactors: **36**
 Total Capacity: **8,849 MWe**
 Energy Availability 2014: **74.7%**
 Nuclear Share: **41.5%**

Reactor	Type	MWe net	Commercial Operation	Expected Shutdown
Oskarshamn 1	BWR	473	1972	2017-19
Oskarshamn 2	BWR	1400	1985	2035 or 2045
Ringhals 1	BWR	878	1976	2020
Ringhals 2	BWR	807	1975	2019
Ringhals 3	BWR	1062	1981	2041
Ringhals 4	BWR	938	1983	2043
Forsmark 1	BWR	984	1980	2040
Forsmark 2	BWR	1120	1981	2041
Forsmark 3	BWR	1187	1985	2045

Combined Years of Operation Remaining **160-170 Years**



UKRAINE

Number of Reactors: **15**
 Average Age of Reactors: **27**
 Total Capacity: **13,107 MWe**
 Energy Availability 2014: **77.5%**
 Nuclear Share: **49.4%**

Reactor	Type V=PWR	MWe net	Commercial Operation	Expected Shutdown
Khmel'nitski 1	V-320	950	8/1988	2018, 2032
Khmel'nitski 2	V-320	950	8/2005	2035, 2050
Rivne/Rovno 1	V-213	381	9/1982	2030
Rivne/Rovno 2	V-213	376	7/1981	2031
Rivne/Rovno 3	V-320	950	5/1987	2017, 2032
Rivne/Rovno 4	V-320	950	late 2005	2035, 2050
South Ukraine 1	V-302	950	8/1983	2023, 2033
South Ukraine 2	V-338	950	4/1985	2015, 2025
South Ukraine 3	V-320	950	12/1989	2019, 2034
Zaporozhe 1	V-320	950	12/1985	2015, 2030
Zaporozhe 2	V-320	950	2/1986	2016, 2031
Zaporozhe 3	V-320	950	3/1987	2017, 2032
Zaporozhe 4	V-320	950	4/1988	2018, 2033
Zaporozhe 5	V-320	950	10/1989	2019, 2034
Zaporozhe 6	V-320	950	9/1996	2026, 2041

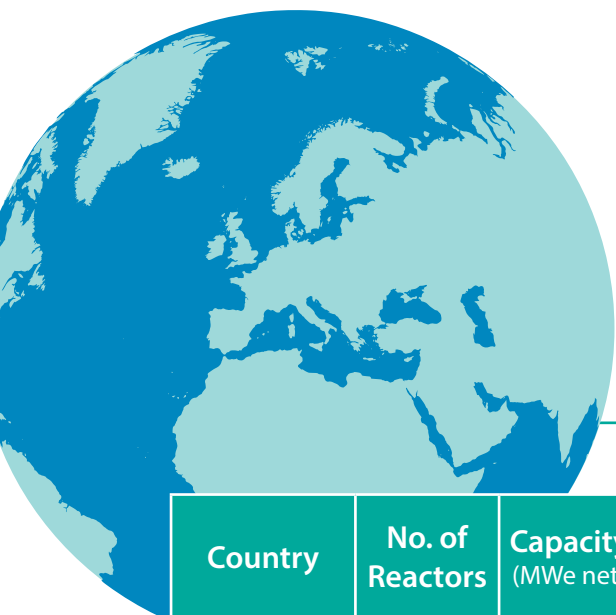
Combined Years of Operation Remaining **96-249 Years**

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REST OF EUROPE

	Country	No. of Reactors	Capacity (MWe net)	Average Age	2014 Energy Availability	Combined Years of Operation Remaining	Planned Capacity
	Switzerland	5	3,333	41	90.8%	42	-
	Slovenia	1	696	35	100%	27	1,100-1,600
	Spain	7	7,070	30	87.9%	33 (licenced until)	-
	Slovakia	4	1,816	24	90.7%	56	2x471 Mwe by 2017/2018 and 2x1200MWe
	Romania	2	1,310	15	94.1%	-	2x720 MWe by 2019/2020
	Hungary	4	1,889	31.5	88.1%	35	2x1200 by 2023/2025

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