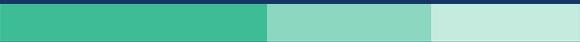


NUCLEAR

BY THE



NUMBERS

Capacity
Factor
93.4%

HIGHEST
GENERATION EVER

Electricity
Generation
19.7%

Carbon-Free
Electricity
54.8%

NUCLEAR

BY THE

NUMBERS



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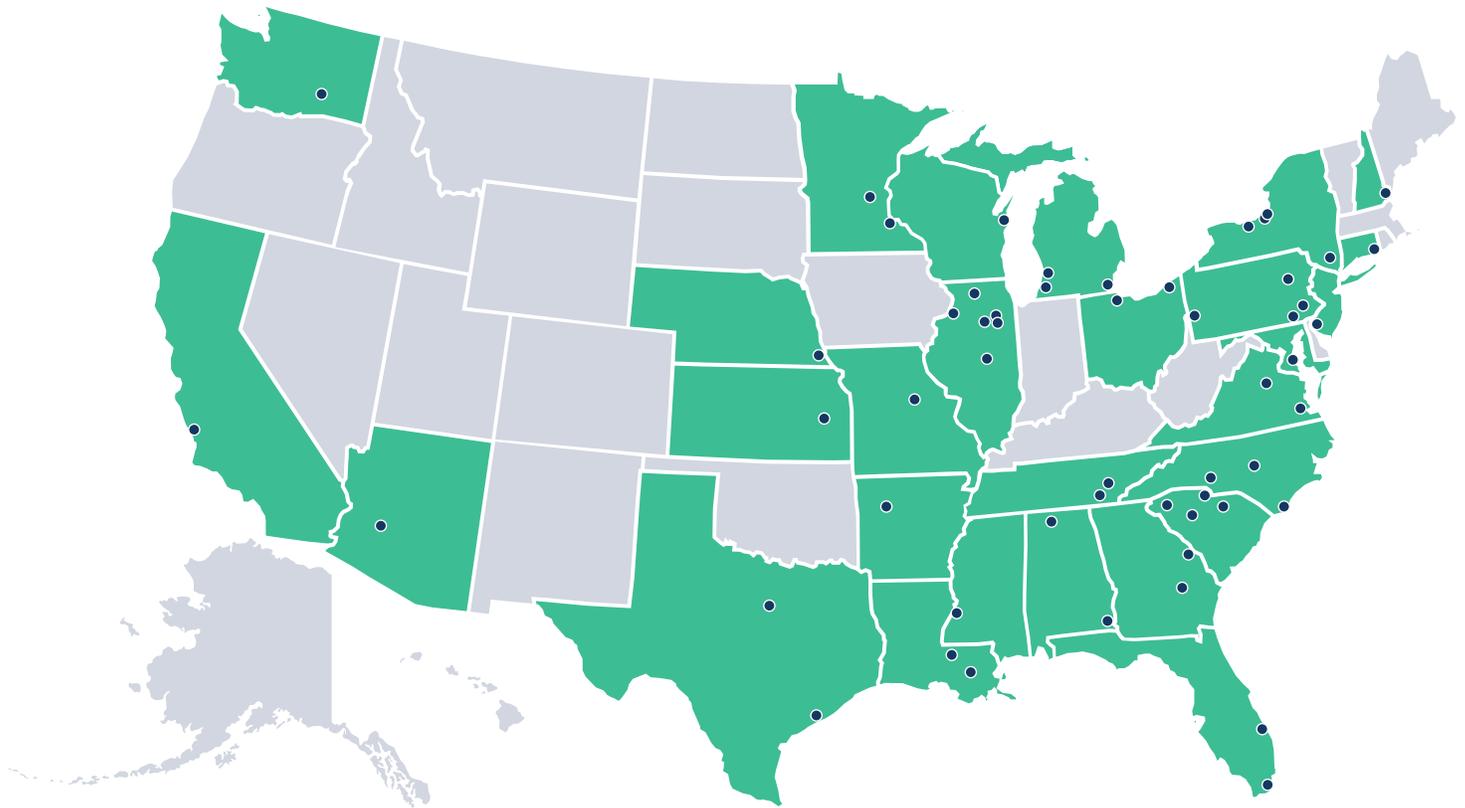
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U.S. Nuclear Power Plants Today

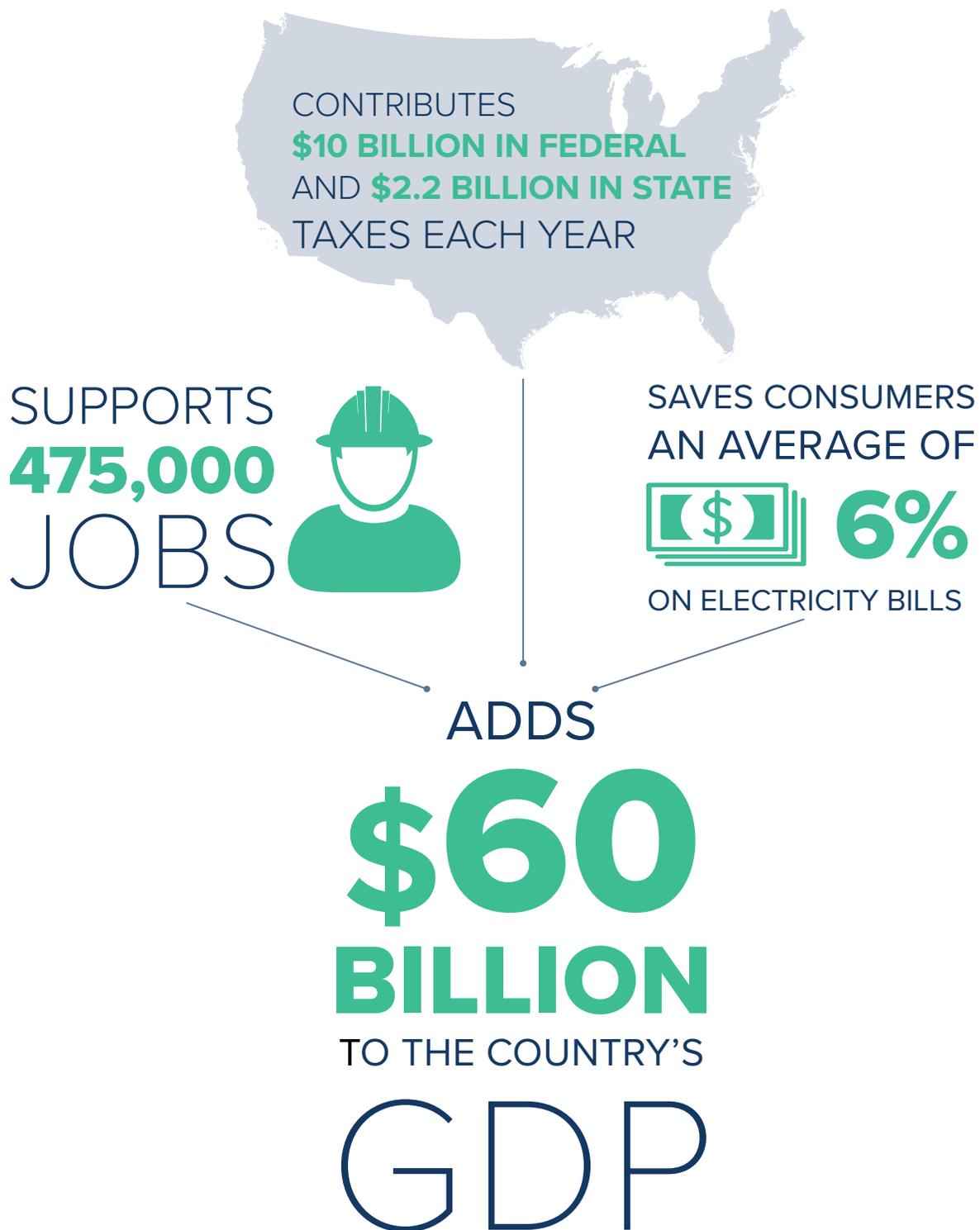
- 94 reactors across 55 sites
- 96,456 megawatts-electric of baseload capacity
- 809.4 billion kilowatt-hours of electricity produced in 2019
- 93.4 percent capacity factor in 2019
- Two nuclear power plants, responsible for over 11.7 billion kilowatt-hours of carbon-free electricity, prematurely retired in 2019



Source: U.S. Energy Information Administration.

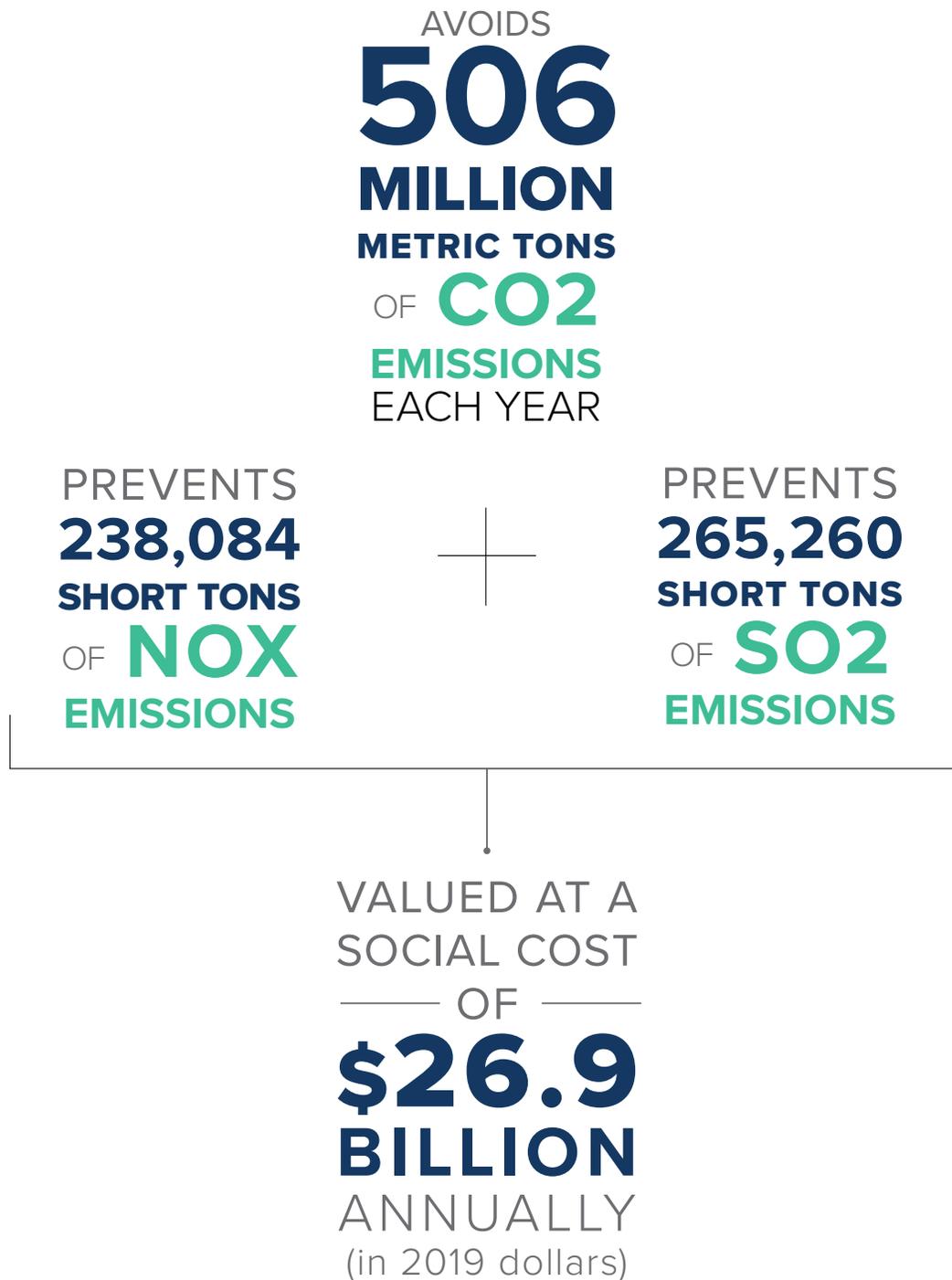
Updated: August 2020

Nuclear Energy Creates and Sustains Jobs



Source: *The Nuclear Industry's Contribution to the U.S. Economy*, The Brattle Group, July 2015.

Nuclear Energy = Clean Air

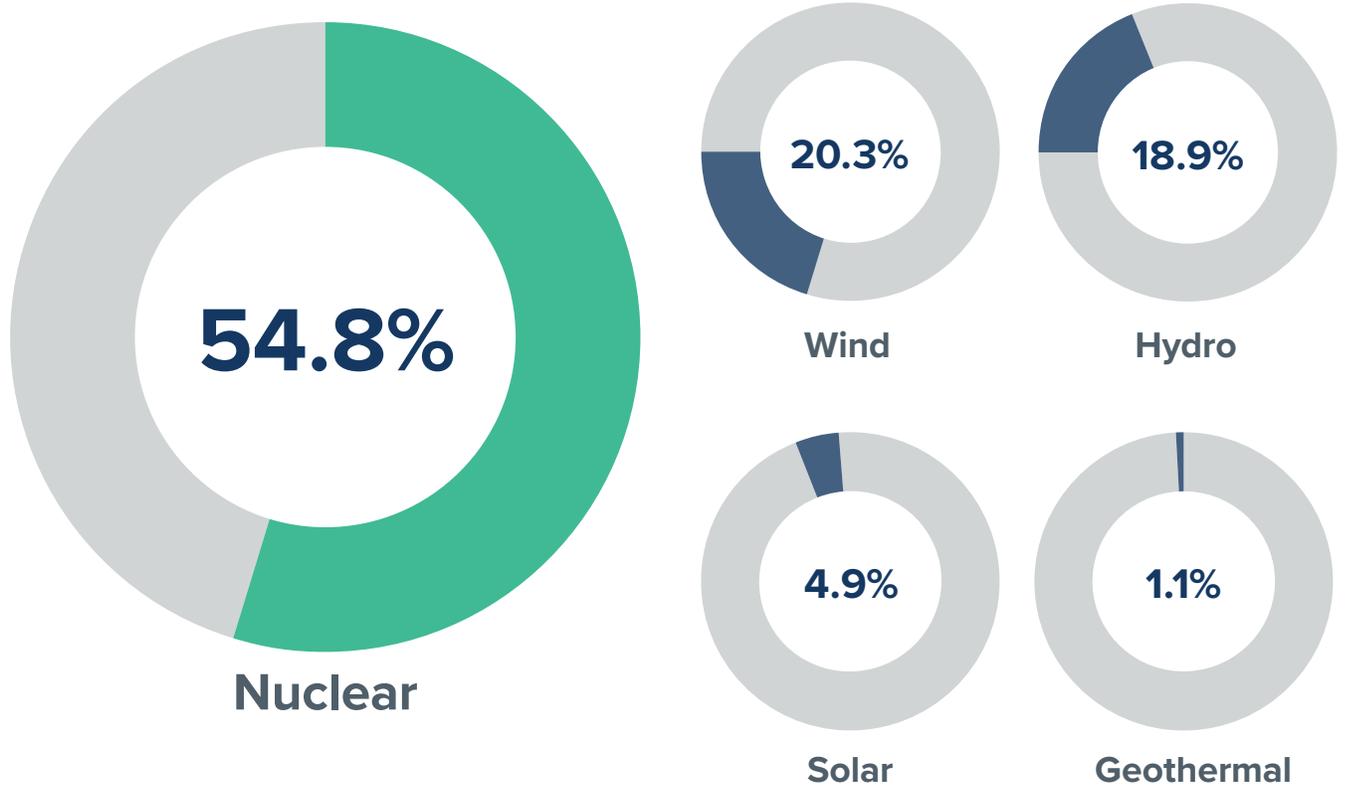


Sources: Emissions avoided are calculated using regional and national fossil fuel emissions rates from the U.S. Environmental Protection Agency and latest plant generation data from the U.S. Energy Information Administration. *The Nuclear Industry's Contribution to the U.S. Economy*, The Brattle Group, July 2015.

Updated: July 2020

2019 U.S. Carbon-Free Electricity Fuel Shares

Nuclear power is responsible for more carbon-free electricity than all other sources combined.



Source: U.S. Energy Information Administration.

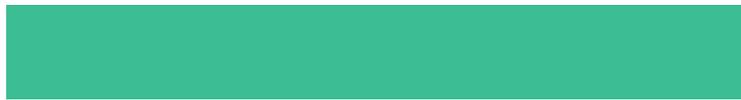
Updated: March 2020

2019 Carbon Emissions Avoided by the U.S. Power Industry Million Metric Tons

Carbon emissions avoided by the U.S. nuclear industry in 2019 are equivalent to taking nearly 110 million cars off the road.

Nuclear

505.8



Wind

196.8



Hydro

183.0



Solar

47.4



Geothermal

10.5

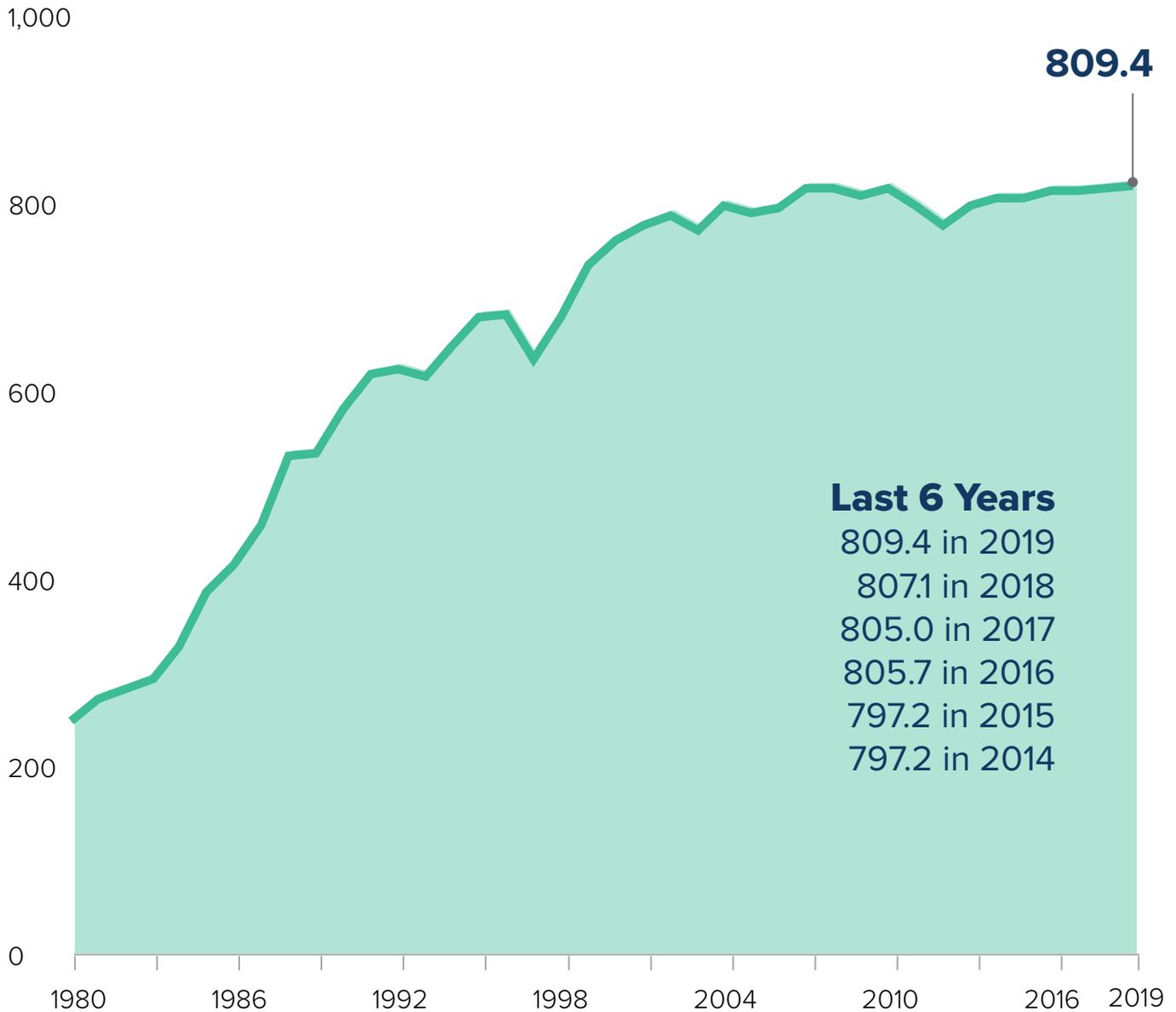


Source: Emissions avoided are calculated using regional and national fossil fuel emissions rates from the U.S. Environmental Protection Agency and latest plant generation data from the U.S. Energy Information Administration.

Updated: July 2020

U.S. Nuclear Electricity Generation Billion Kilowatt-Hours

U.S. nuclear power plants achieved their highest electricity generation ever in 2019.

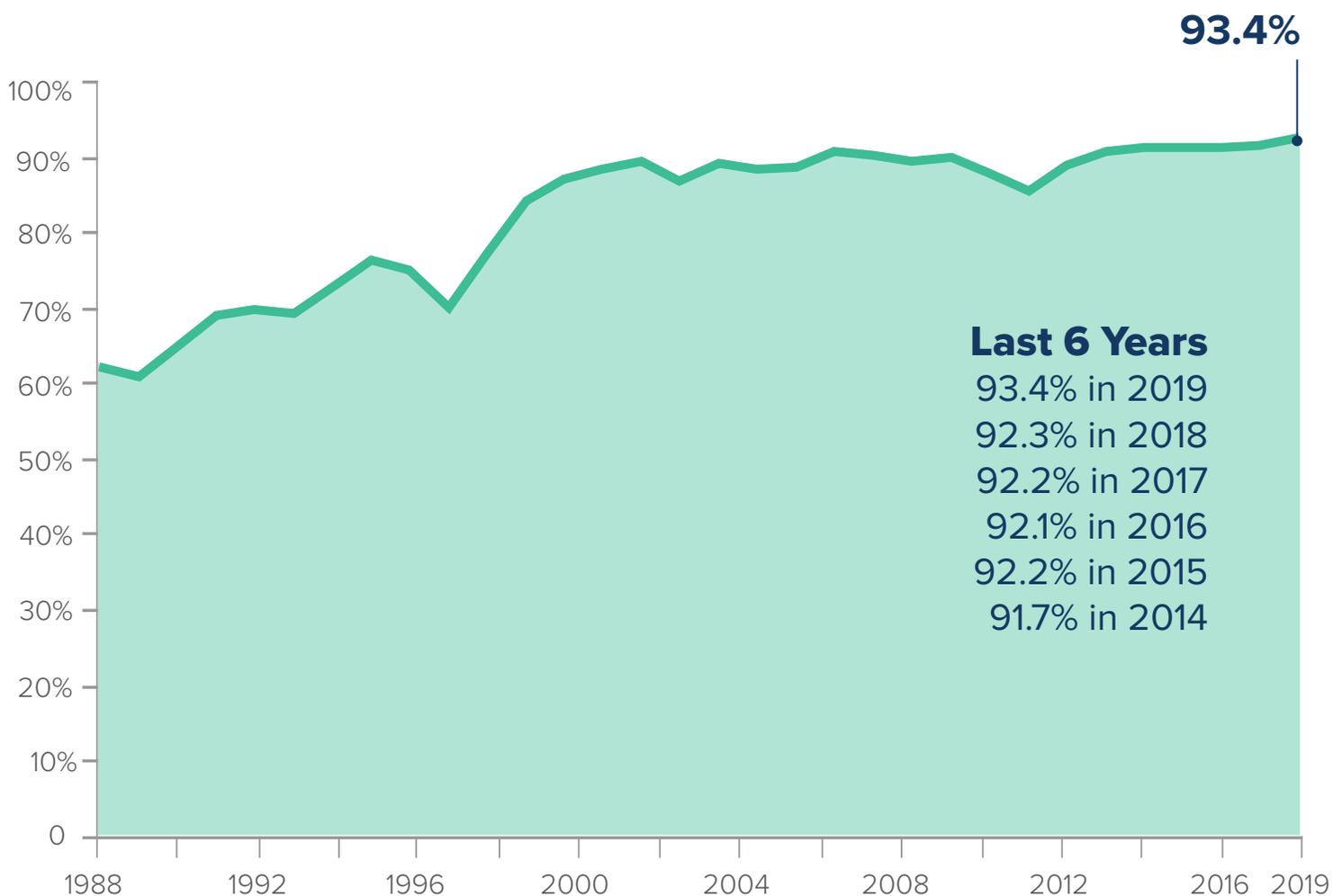


Source: U.S. Energy Information Administration.

Updated: March 2020

U.S. Nuclear Industrywide Capacity Factors

U.S. nuclear power plants achieved the highest capacity factor ever in 2019 and an average capacity factor of 90 percent over the last 20 years.



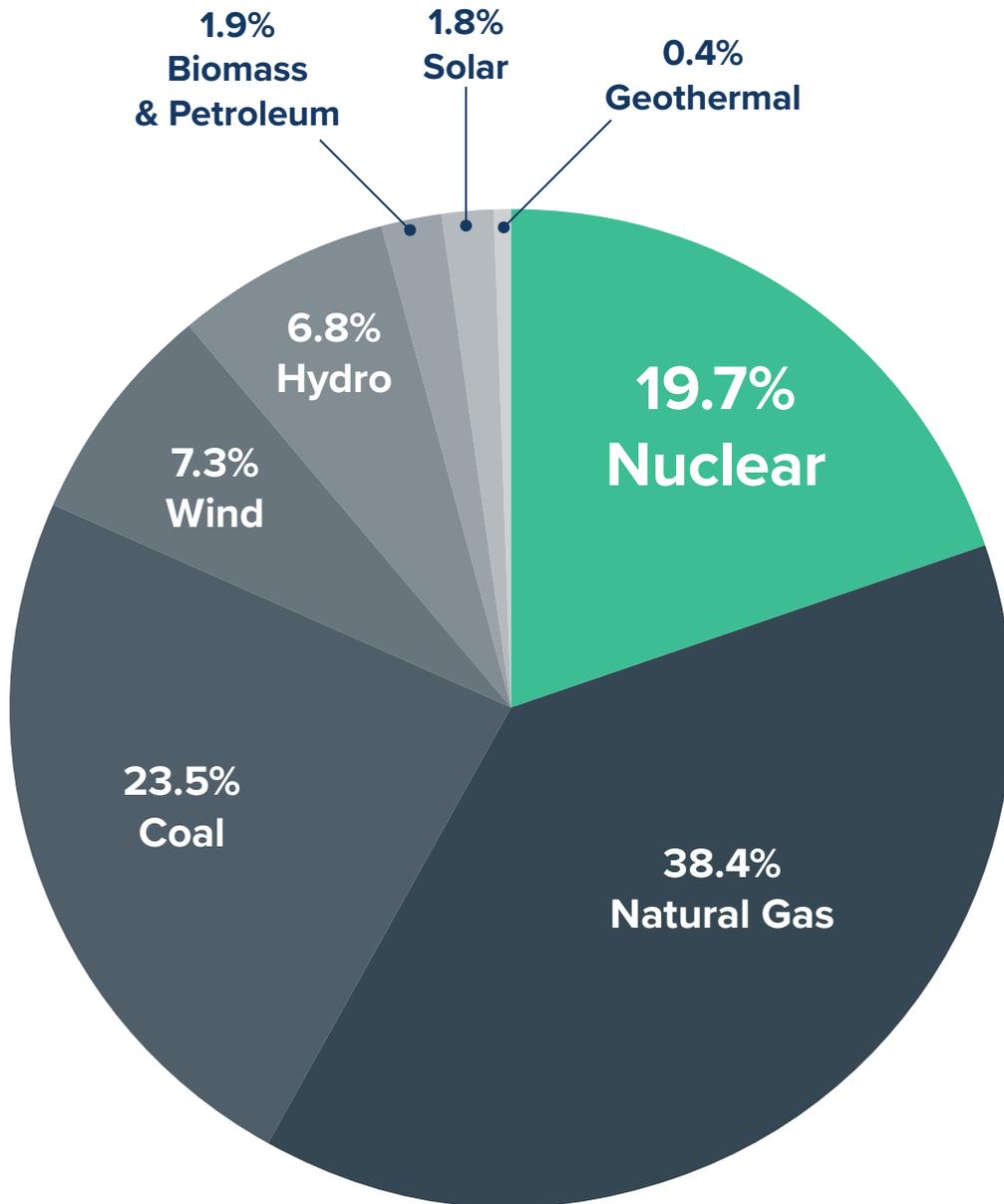
Note: U.S. Energy Information Administration reports 93.5 percent capacity factor for 2019. NEI's calculation (93.4 percent) accurately accounts for Pilgrim Nuclear Power Station's closure in May 2019 and Three Mile Island Nuclear Station's closure in September 2019.

Source: U.S. Energy Information Administration.

Updated: March 2020

2019 U.S. Electricity Generation Fuel Shares

Nearly 20 percent of U.S. energy generation comes from nuclear.

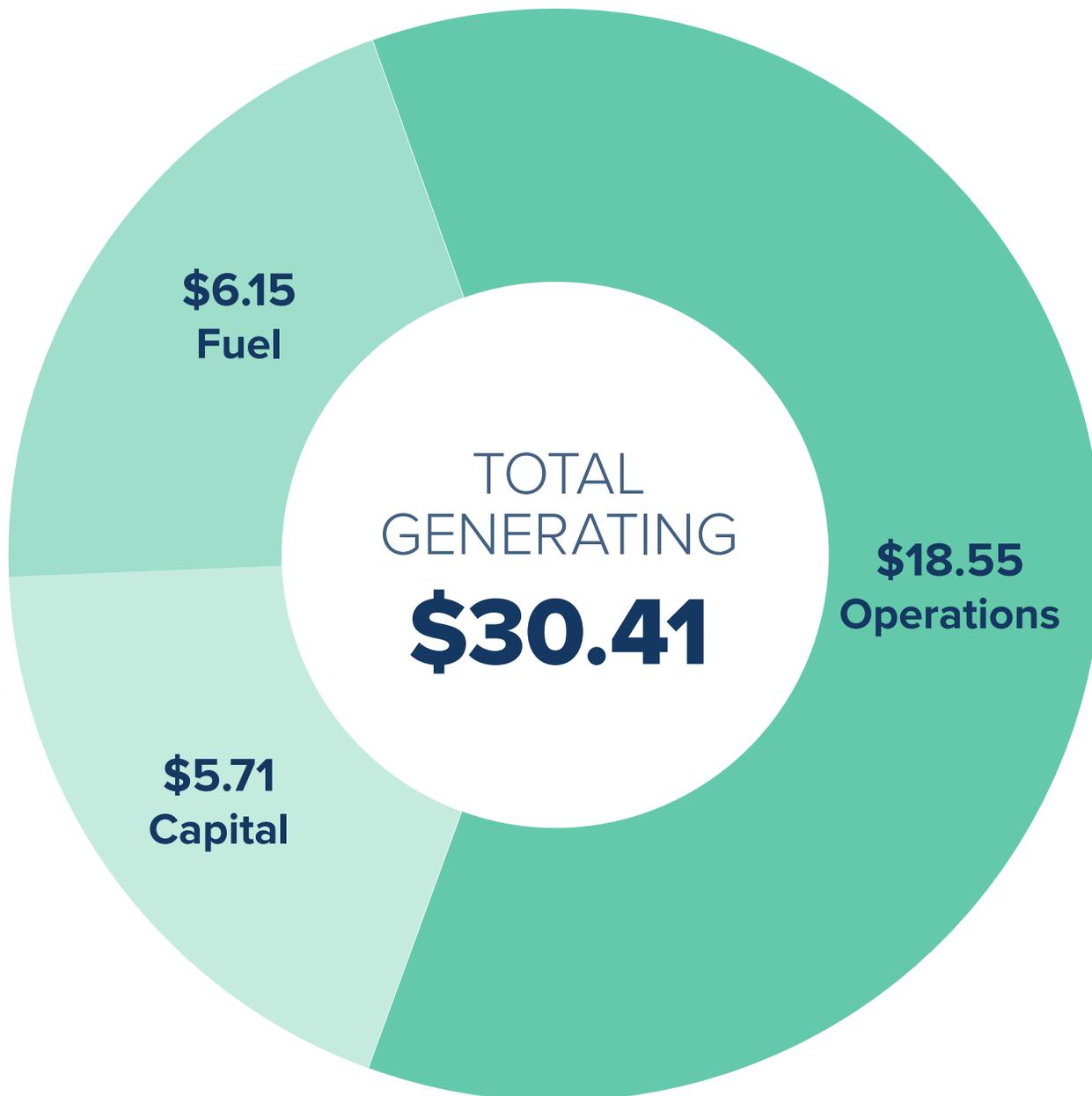


Source: U.S. Energy Information Administration.

Updated: March 2020

Industry Average Total Generating Costs 2019 Dollars per Megawatt-Hour

U.S. nuclear power plants achieved the lowest electricity generating costs since 2002.



Total generating cost is the sum of the fuel, capital expenditure and operations costs. The intent of the cost data, collected by EUCG, is to perform benchmarking comparisons on operation and maintenance and capital costs among nuclear power plant operators. The cost data does not represent the full costs of operations as it does not include market and operational risk management (including but not limited to revenue uncertainty, equipment malfunctions, regulatory changes), property taxes, spent fuel storage costs, or returns on investment that would be key factors in decisions about whether to continue operating a particular station. Also not included in the EUCG data are costs that could be relevant for other considerations such as depreciation or interest costs.

Source: Electric Utility Cost Group.
Updated: July 2020

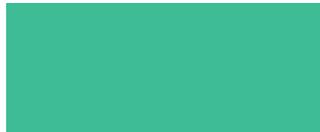
Industry Average Total Generating Costs 2019 Dollars Per Megawatt-Hour

Industry Average

\$30.41

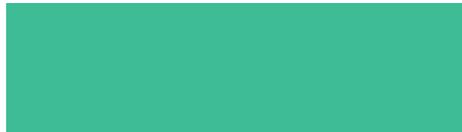
Multiple Unit Sites

\$28.37



Single Unit Sites

\$38.40



Total generating cost is the sum of the fuel, capital expenditure and operations costs. The intent of the cost data, collected by EUCG, is to perform benchmarking comparisons on operation and maintenance and capital costs among nuclear power plant operators. The cost data does not represent the full costs of operations as it does not include market and operational risk management (including but not limited to revenue uncertainty, equipment malfunctions, regulatory changes), property taxes, spent fuel storage costs, or returns on investment that would be key factors in decisions about whether to continue operating a particular station. Also not included in the EUCG data are costs that could be relevant for other considerations such as depreciation or interest costs.

Source: Electric Utility Cost Group.

Updated: July 2020

U.S. Nuclear Industry Total Generating Cost Trends 2019 Dollars Per Megawatt-Hour

- U.S. nuclear industry has achieved the ambitious goal of 30 percent reduction in total generating costs through the industrywide Delivering the Nuclear Promise initiative.
- Average total generating cost have decreased from \$44.57 per megawatt-hour in 2012 peak to \$30.41 per megawatt-hour in 2019, a reduction of nearly 32 percent.

YEAR	FUEL	CAPITAL	OPERATIONS	TOTAL GENERATING
2002	\$6.18	\$4.23	\$20.08	\$30.50
2004	\$5.70	\$6.10	\$20.02	\$31.82
2007	\$5.54	\$6.61	\$20.59	\$32.73
2010	\$7.29	\$10.09	\$22.46	\$39.83
2011	\$7.64	\$11.02	\$23.81	\$42.47
2012	\$7.97	\$12.19	\$24.41	\$44.57
2015	\$7.37	\$8.60	\$22.49	\$38.45
2016	\$7.16	\$7.18	\$21.76	\$36.11
2017	\$6.71	\$6.92	\$21.39	\$35.03
2018	\$6.47	\$6.32	\$20.12	\$32.91
2019	\$6.15	\$5.71	\$18.55	\$30.41
2018-2019	-4.9%	-9.6%	-7.8%	-7.6%
2012-2019	-22.7%	-53.1%	-24.0%	-31.8%

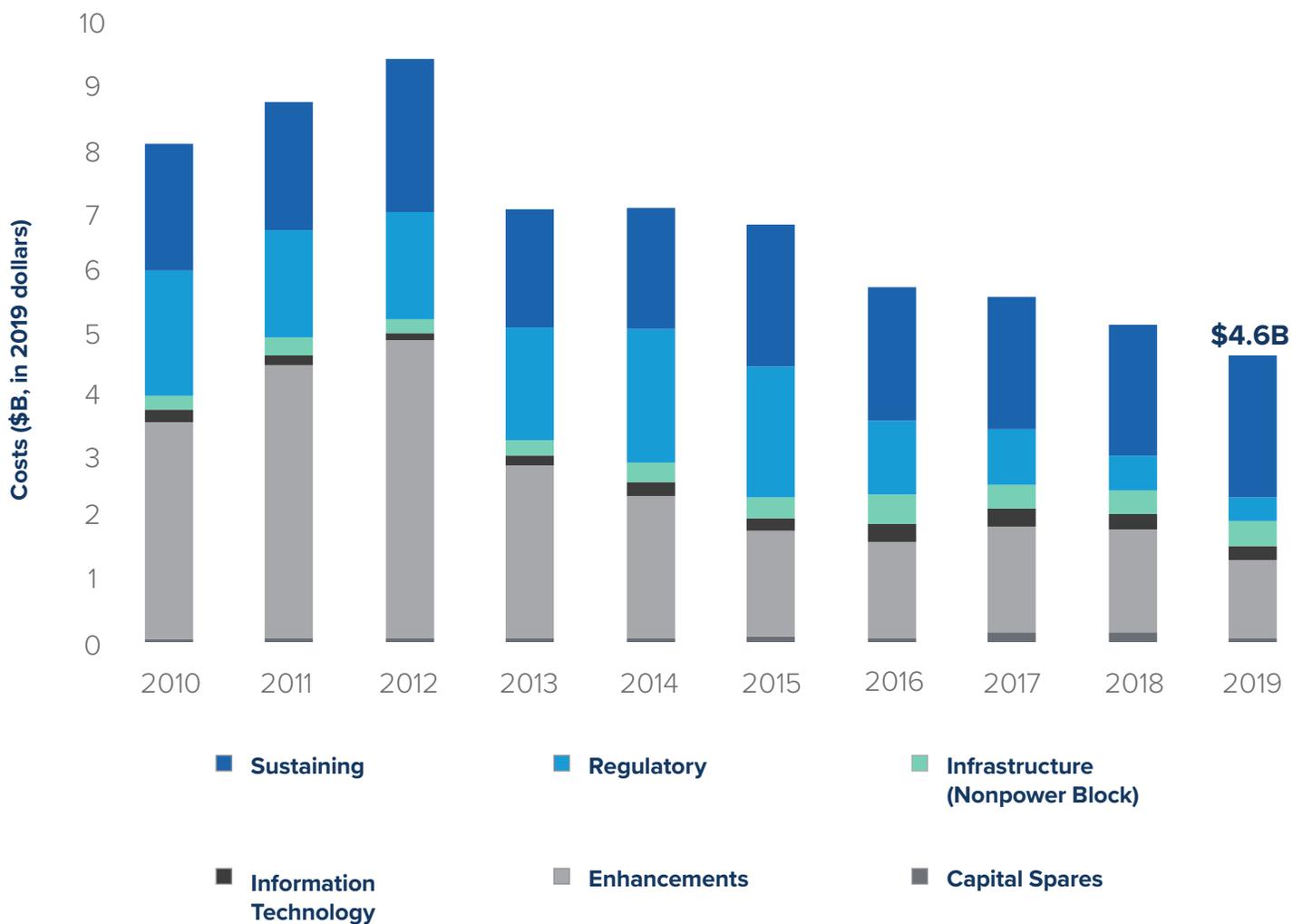
Total generating cost is the sum of the fuel, capital expenditure and operations costs. The intent of the cost data, collected by EUCG, is to perform benchmarking comparisons on operation and maintenance and capital costs among nuclear power plant operators. The cost data does not represent the full costs of operations as it does not include market and operational risk management (including but not limited to revenue uncertainty, equipment malfunctions, regulatory changes), property taxes, spent fuel storage costs, or returns on investment that would be key factors in decisions about whether to continue operating a particular station. Also not included in the EUCG data are costs that could be relevant for other considerations such as depreciation or interest costs.

Source: Electric Utility Cost Group.

Updated: July 2020

U.S. Nuclear Industry Capital Cost Trends

Capital expenditures per megawatt-hour decreased 9.6 percent in 2019 from 2018.

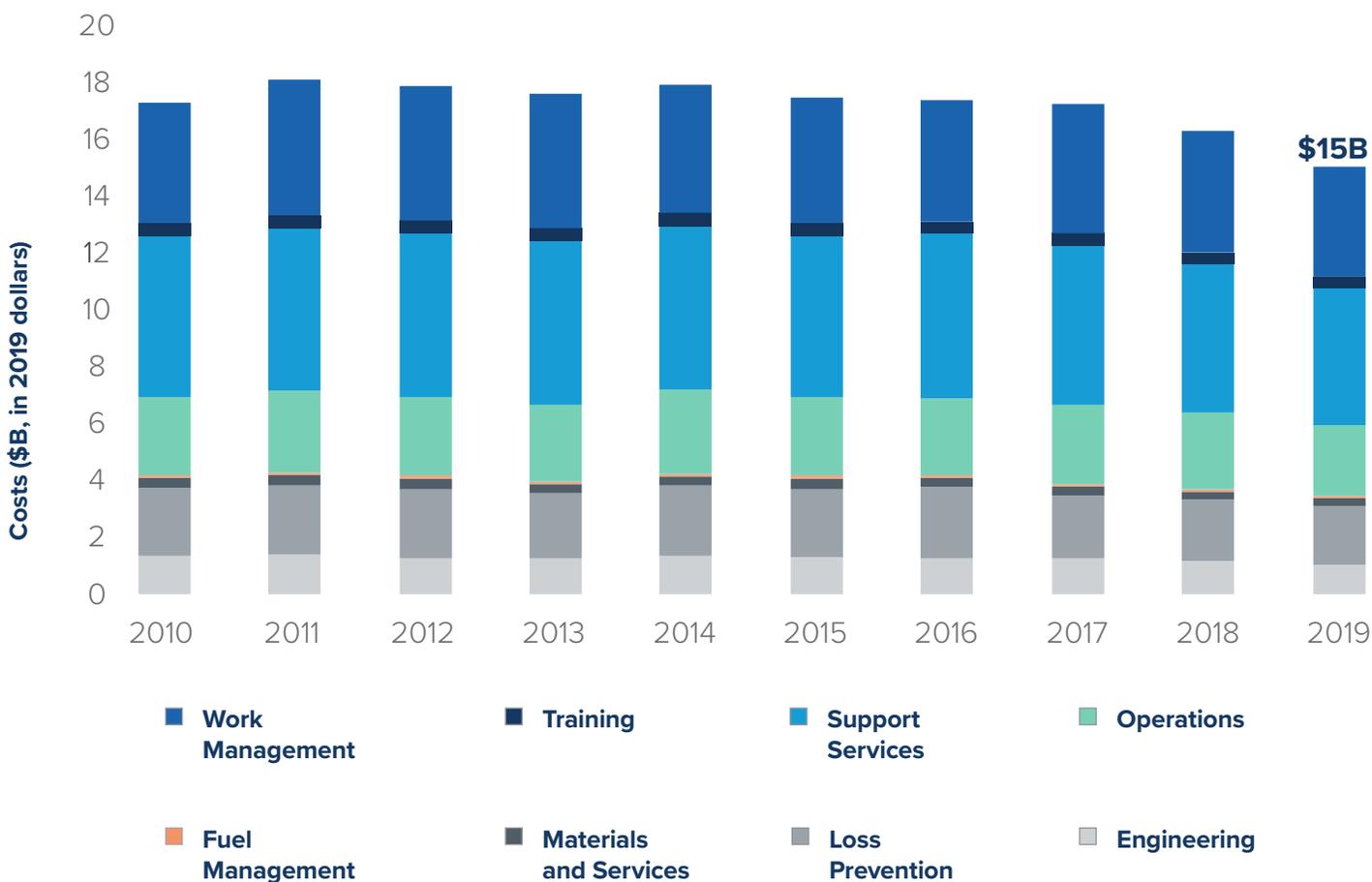


Source: Electric Utility Cost Group.

Updated: July 2020

U.S. Nuclear Industry Operations Cost Trends

Operations costs per megawatt-hour decreased 7.8 percent in 2019 from 2018.

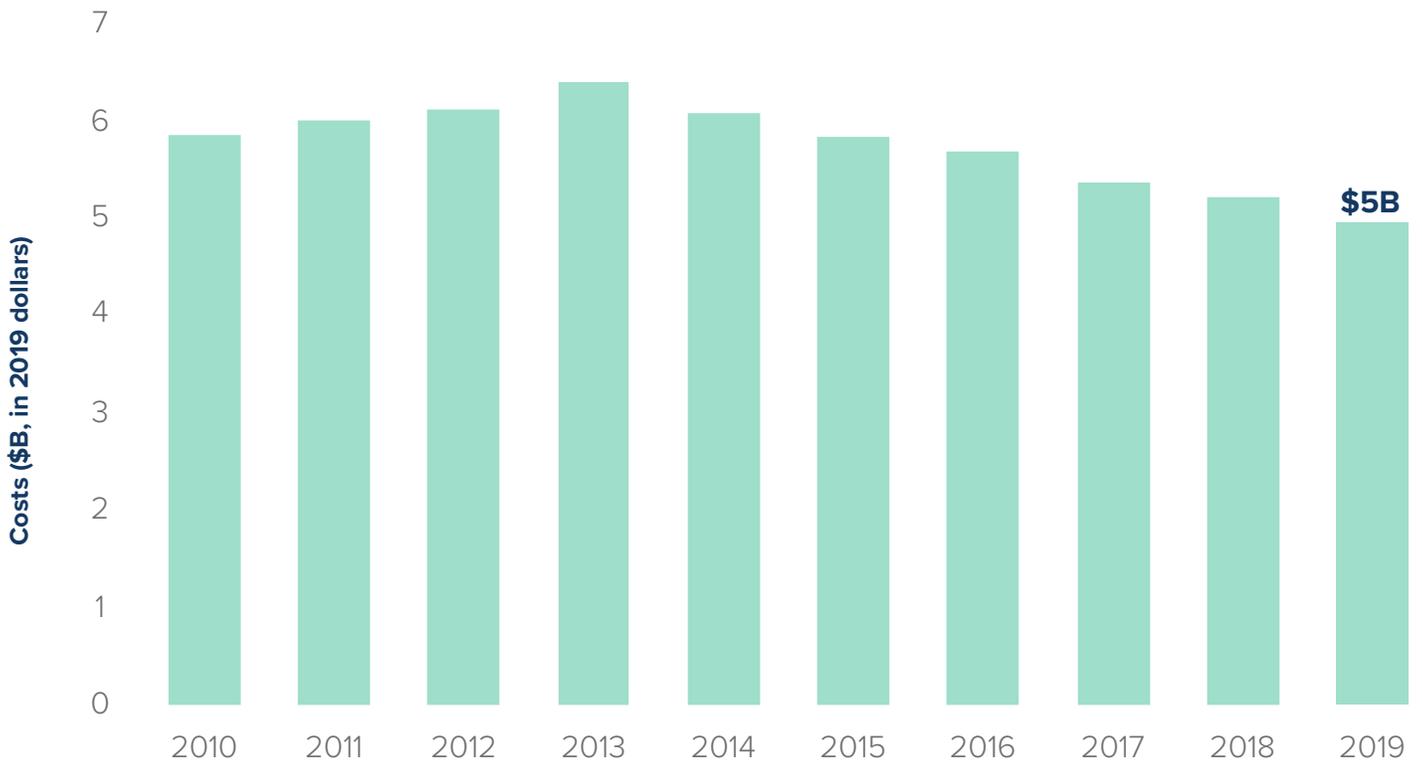


Source: Electric Utility Cost Group.

Updated: July 2020

U.S. Nuclear Industry Fuel Cost Trends

Fuel costs per megawatt-hour decreased 4.9 percent in 2019 from 2018.



Source: Electric Utility Cost Group.

Updated: July 2020

Prematurely Retired Nuclear Power Plants

- 8,343 megawatts-electric of baseload capacity
- 42.7 million metric tons of carbon emissions avoided
- More than 7,000 direct jobs impacted
- The electricity generated by these plants in their final years was equivalent to powering 8.5 million homes

PLANT/SITE	STATE	SUMMER CAPACITY (MWe)	CLOSURE YEAR	FINAL YEAR ELECTRICITY GENERATED (billion kilowatt-hours/year)	FINAL YEAR CARBON EMISSIONS AVOIDED (million metric tons/year)
Crystal River 3	FL	838	2013	7.0	4.8
San Onofre 2 & 3	CA	2,150	2013	18.1	8.0
Kewaunee	WI	566	2013	4.5	4.4
Vermont Yankee	VT	604	2014	5.1	2.5
Fort Calhoun	NE	478	2016	3.5	3.4
Oyster Creek 1	NJ	608	2018	5.4	3.9
Pilgrim 1	MA	679	2019	4.4	2.0
Three Mile Island 1	PA	803	2019	7.3	5.0
Indian Point 2	NY	1,016	2020	8.4	3.9
Duane Arnold	IA	601	2020	5.2	4.7
TOTAL		8,343		69.0	42.7

Source: Emissions avoided are calculated using regional and national fossil fuel emissions rates from the U.S. Environmental Protection Agency and latest plant generation and average household electricity usage data from the U.S. Energy Information Administration.

Updated: August 2020

Nuclear Power Plants Announced for Premature Closure

- 8,147 megawatts-electric of baseload capacity
- 38.5 million metric tons of carbon emissions avoided in 2019
- 66.6 billion kilowatt-hours of electricity generated in 2019
- More than 4,100 direct jobs impacted

PLANT/SITE	STATE	SUMMER CAPACITY (MWe)	PLANNED CLOSURE YEAR	ELECTRICITY GENERATED IN 2019 (billion kilowatt-hours/year)	CARBON EMISSIONS AVOIDED IN 2019 (million metric tons/year)
Indian Point 3	NY	1,038	2021	8.3	3.9
Byron 1 & 2	IL	2,300	2021	20.1	12.8
Dresden 2 & 3	IL	1,797	2021	15.1	9.6
Palisades	MI	772	2022	6.9	5.4
Diablo Canyon 1 & 2	CA	2,240	2024	16.2	6.7
TOTAL		8,147		66.6	38.5

Source: Emissions avoided are calculated using regional and national fossil fuel emissions rates from the U.S. Environmental Protection Agency and latest plant generation data from the U.S. Energy Information Administration.

Updated: August 2020

Plants Saved From Premature Closure Due to State Actions

- 15,746 megawatts-electric of baseload capacity
- 76.9 million metric tons of carbon emissions avoided
- Nearly twice the electricity generation by all utility solar in the U.S. in 2019
- More than 10,150 direct jobs saved

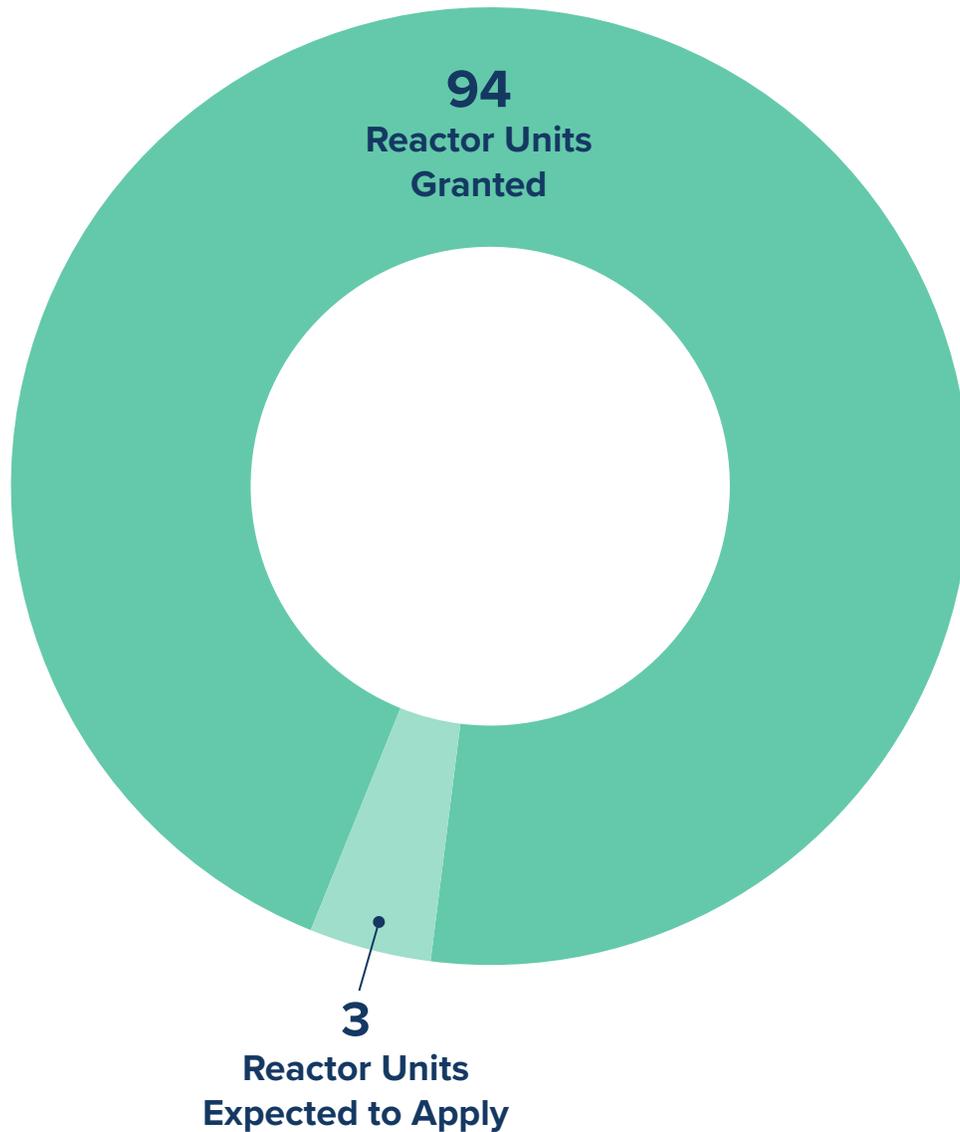
PLANT/SITE	STATE	SUMMER CAPACITY (MWe)	INITIALLY ANNOUNCED CLOSURE YEAR	ELECTRICITY GENERATED IN 2019 (billion kilowatt-hours/year)	CARBON EMISSIONS AVOIDED IN 2019 (million metric tons/year)
Beaver Valley 1 & 2	PA	1,808	2021	15.5	9.9
Clinton	IL	1,065	2017	8.4	8.4
Davis-Besse	OH	894	2020	7.8	5.0
FitzPatrick	NY	848	2017	7.4	3.5
Ginna	NY	582	2017	5.0	2.4
Hope Creek and Salem 1 & 2	NJ	3,500	2020-2021	26.6	17.0
Millstone 2 & 3	CT	2,073	2020	16.7	7.6
Nine Mile Point 1 & 2	NY	1,917	2017-2018	15.8	7.5
Perry	OH	1,240	2020	9.2	5.9
Quad Cities 1 & 2	IL	1,819	2018	15.5	9.9
TOTAL		15,746		127.9	76.9

Source: Emissions avoided are calculated using regional and national fossil fuel emissions rates from the U.S. Environmental Protection Agency and latest plant generation data from the U.S. Energy Information Administration.

Updated: August 2020

Initial License Renewals

Initial License Renewals extend plant life from 40 to 60 years. Nuclear plants with initial license renewals generated more than 739 billion kilowatt-hours of carbon-free electricity in 2019, powering over 68 million homes.



Note: Eight reactors (Duane Arnold, Fort Calhoun, Indian Point Unit 2, Kewaunee, Oyster Creek, Pilgrim, Three Mile Island Unit 1 and Vermont Yankee) have since ceased operations prematurely.

Source: Licensing data from the U.S. Nuclear Regulatory Commission and plant generating data and average household electricity usage from the U.S. Energy Information Administration.

Updated: August 2020

Second License Renewals

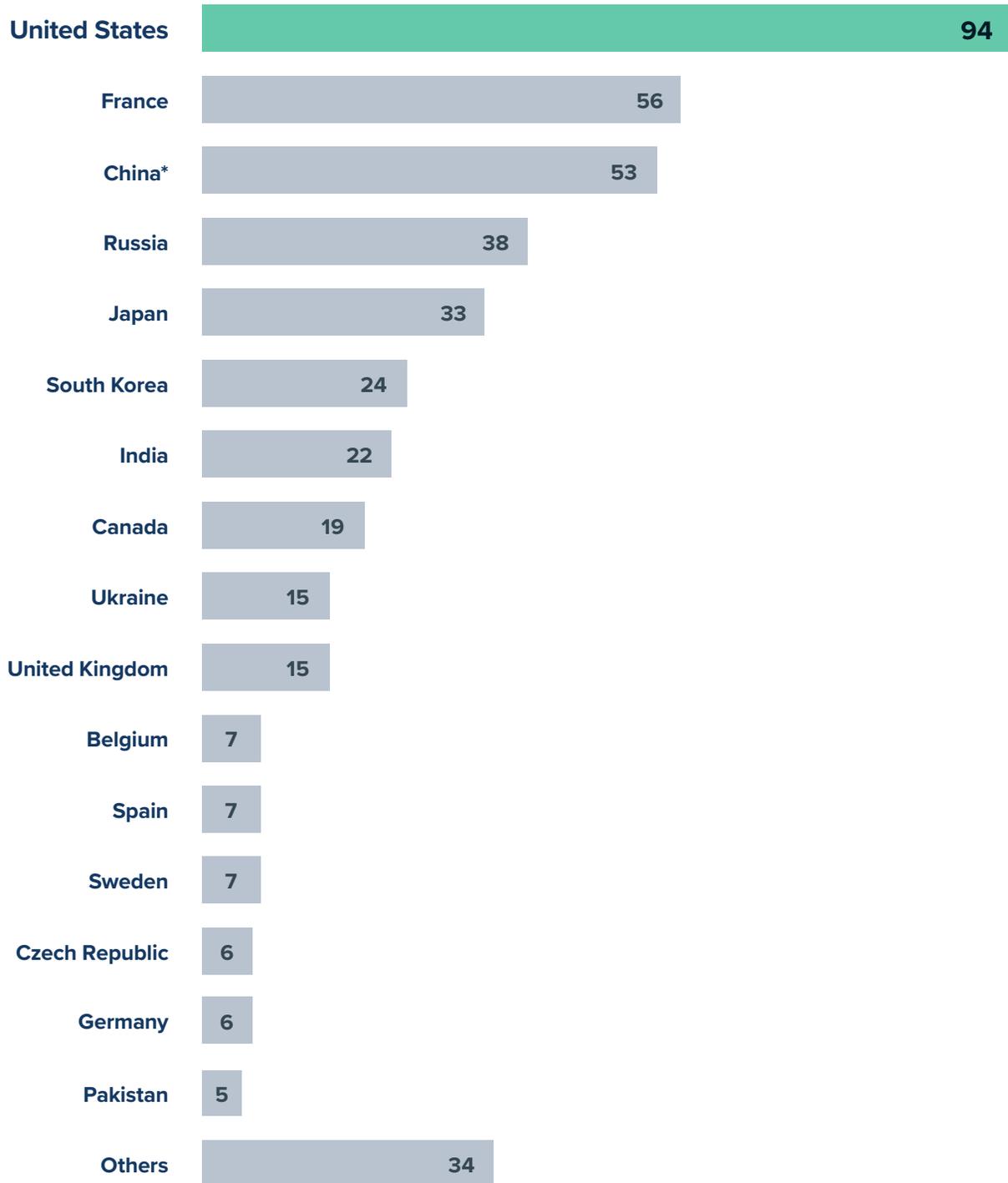
Second license renewals extend plant life from 60 to 80 years, ensuring reliable carbon-free electricity well into at least the 2050s.



Source: U.S. Nuclear Regulatory Commission.

Updated: August 2020

441 Operating Reactors Around the World

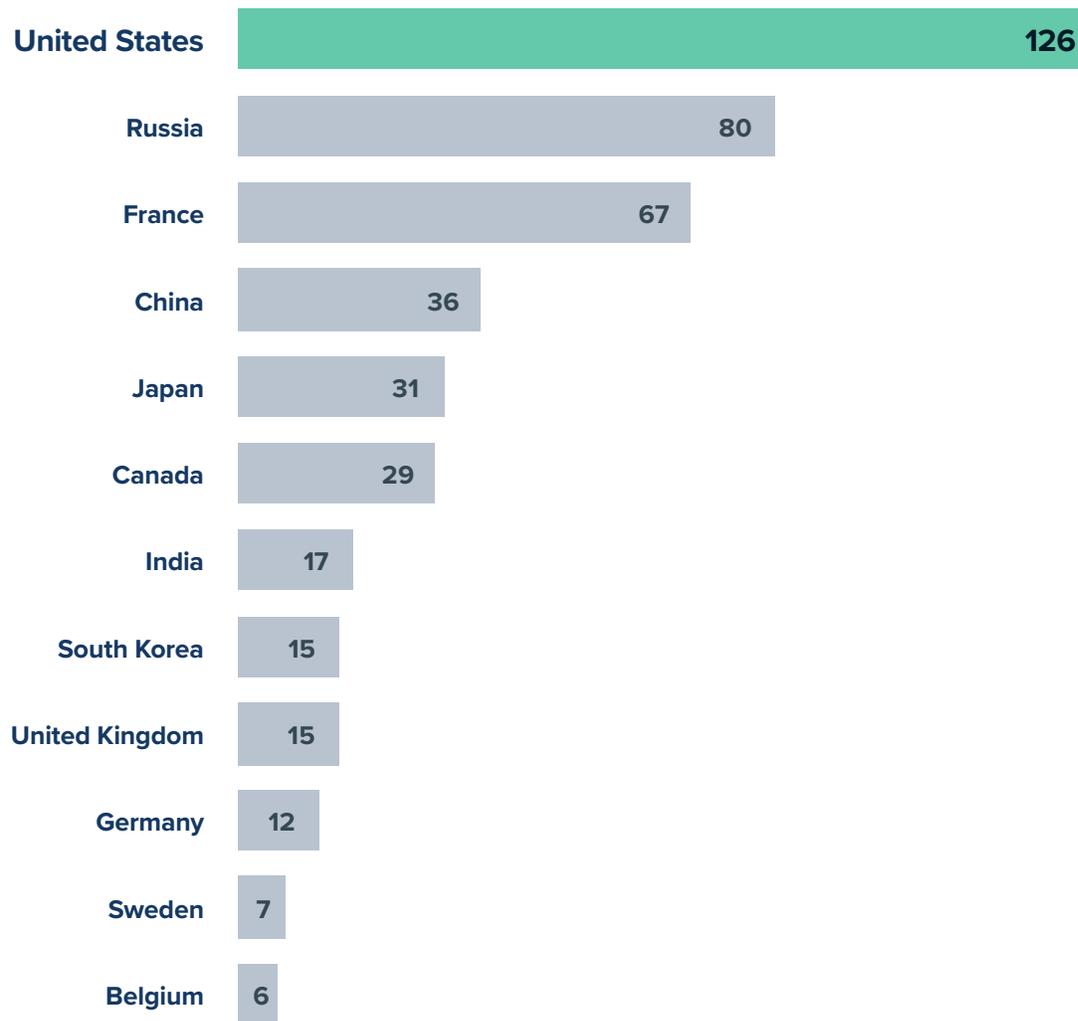


*China's operating reactors count includes 4 reactors operating in Taiwan.

Source: International Atomic Energy Agency - Power Reactor Information System.

Updated: August 2020

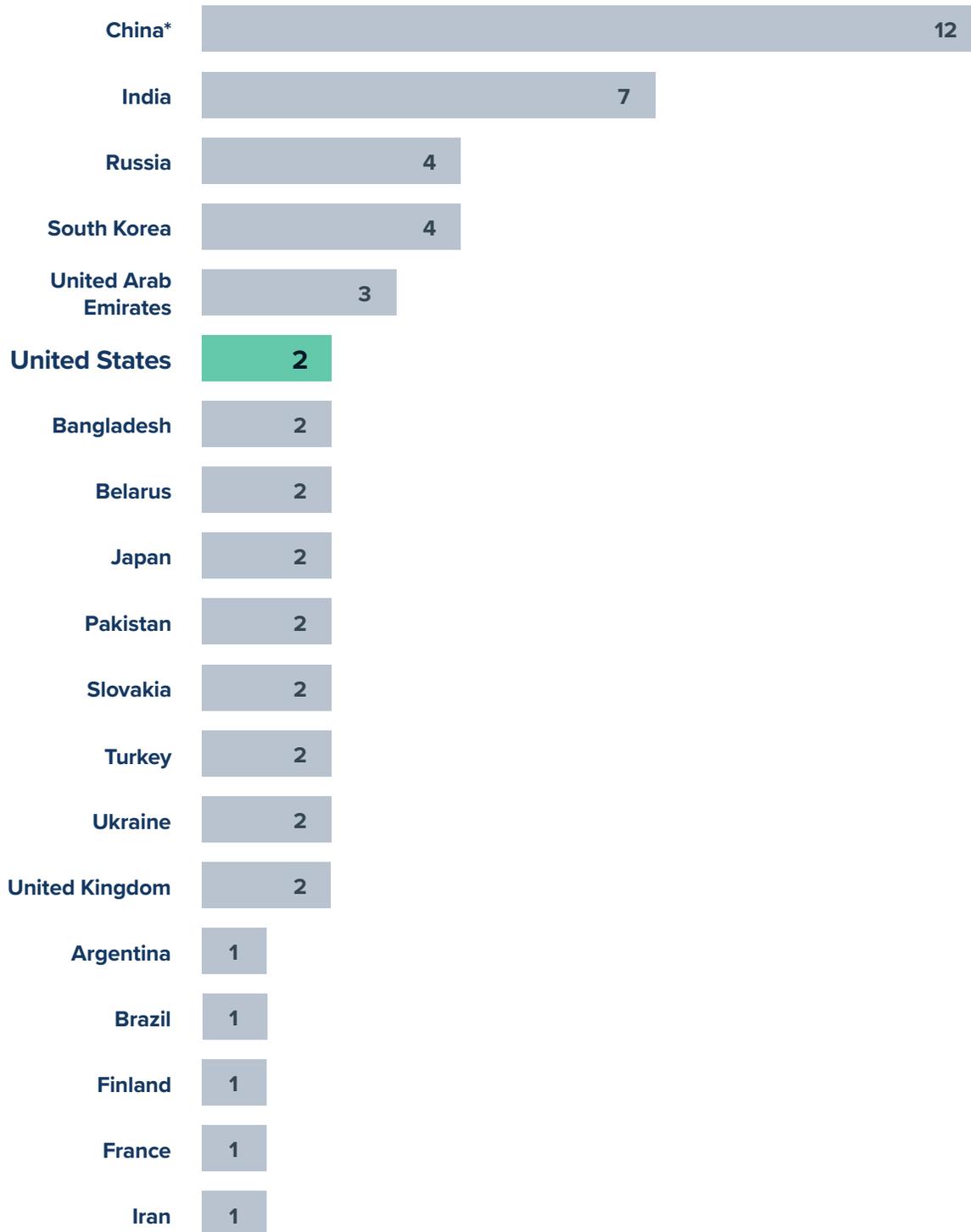
Operating Reactors, by Supplier Country



Sources: International Atomic Energy Agency-Power Reactor Information System.

Updated: August 2020

53 Reactors Under Construction Around the World

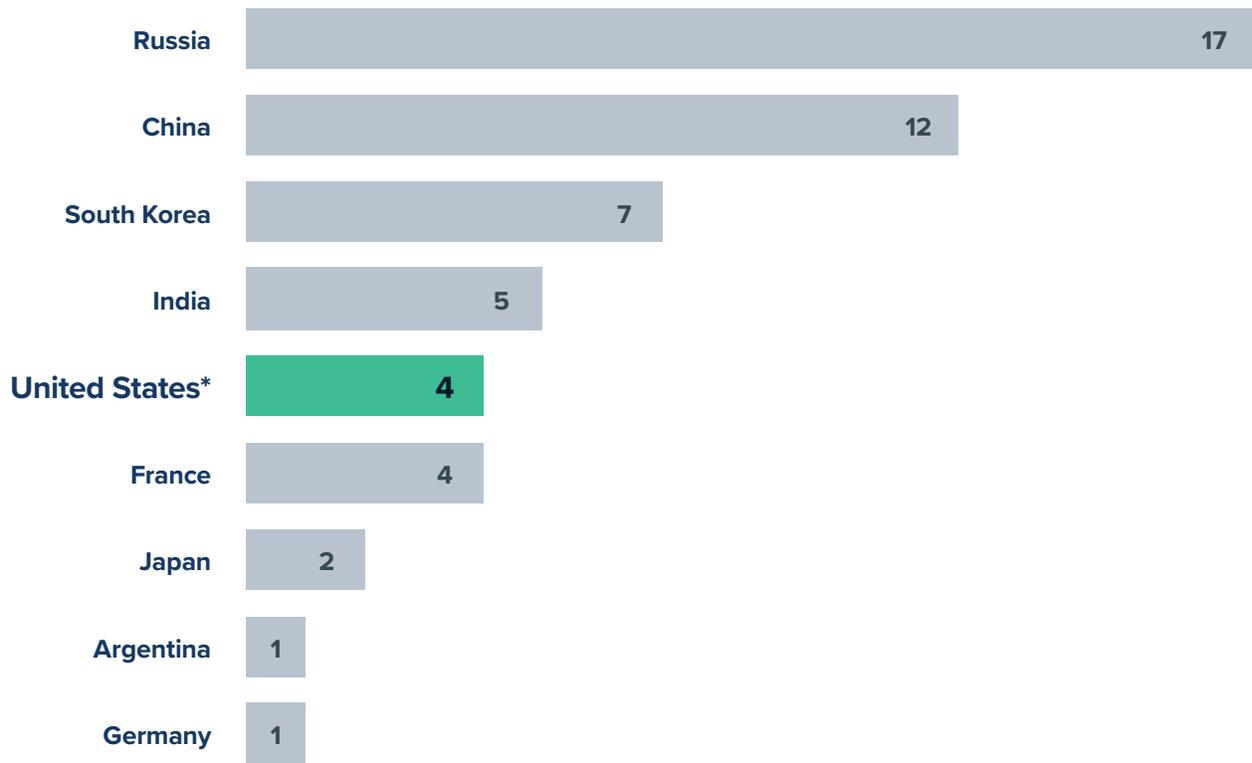


*Two reactor units in Taiwan, Lungmen 1 & 2, are included in China's reactors under construction count.

Source: International Atomic Energy Agency - Power Reactor Information System.

Updated: August 2020

Reactors Under Construction, by Supplier Country



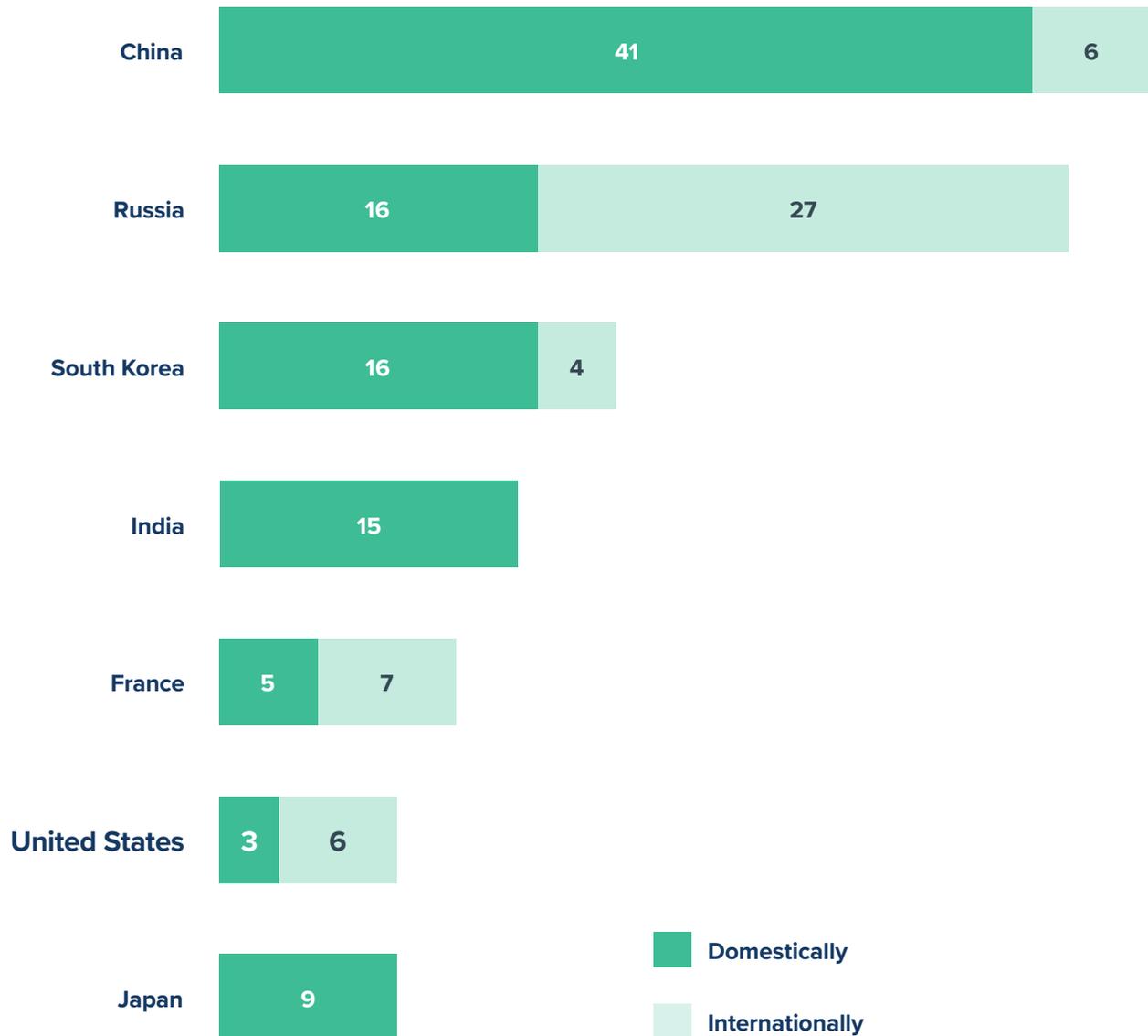
*The U.S.-supplied reactors under construction include Vogtle 3 & 4 in the U.S., as well as stalled Lungmen 1 & 2 in Taiwan.

Sources: International Atomic Energy Agency - Power Reactor Information System.

Updated: August 2020

International Nuclear Influence

The strength of international influence is measured through domestic nuclear supply chains and infrastructure for each country. Below, reactors operating since 1997 and those currently under construction are categorized by whether the country supplying major components and leading construction efforts deployed the reactor domestically or exported the reactor internationally.



Source: International Atomic Energy Agency - Power Reactor Information System.

Updated: August 2020



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