


NUCLEAR

BY THE



NUMBERS

Capacity
Factor
92.3%



**HIGHEST
GENERATION
EVER**

Electricity
Generation
19.3%

Emissions-Free
Electricity
55.2%

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PERFORMANCE AND COST

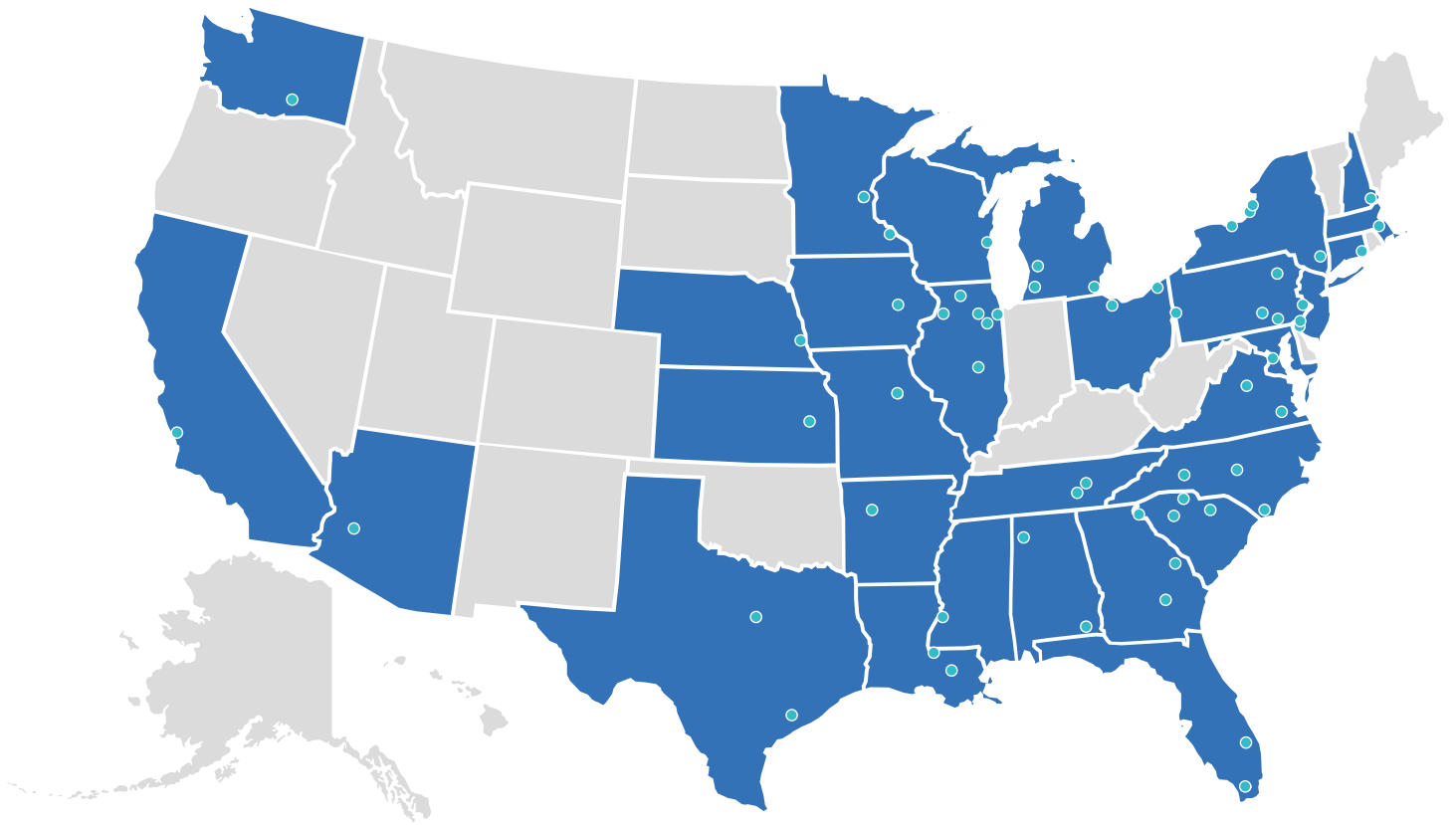
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U.S. Nuclear Power Plants

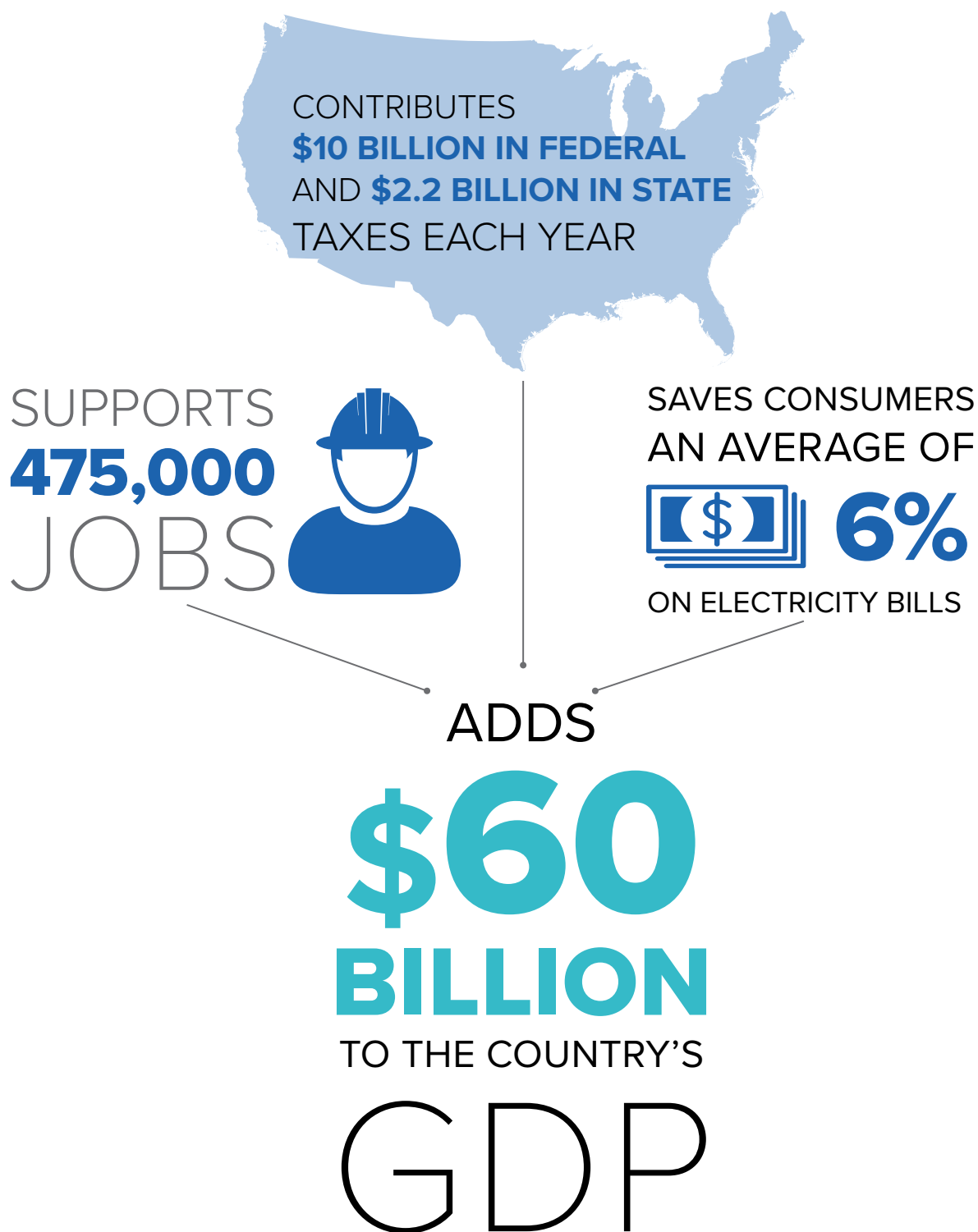
- 98 reactors across 59 sites
- 99,355 megawatts-electric of baseload capacity
- 807.1 billion kilowatt-hours in 2018
- 92.3 percent capacity factor in 2018



Source: U.S. Energy Information Administration.

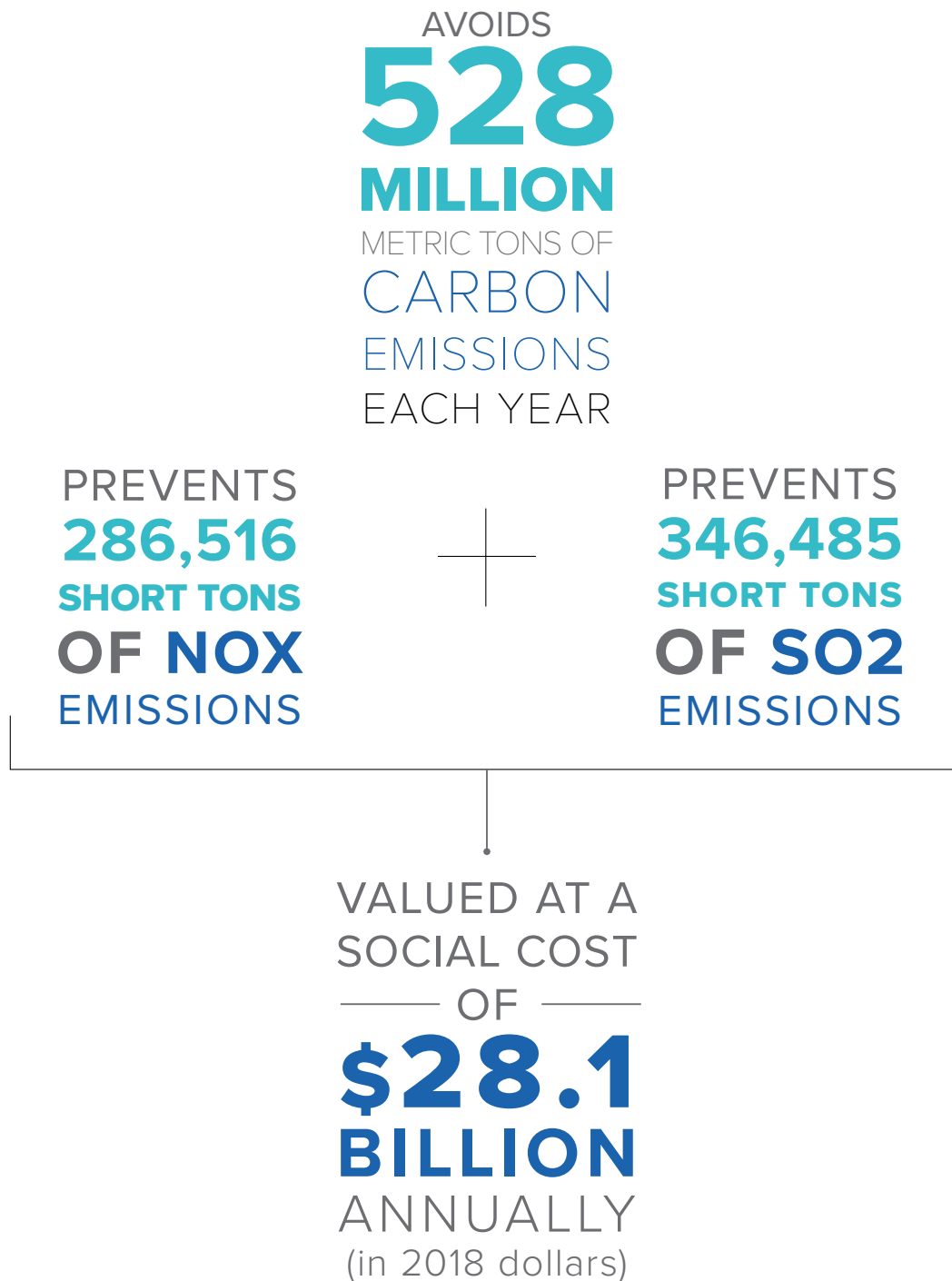
Updated: March 2019

Nuclear Energy Creates and Sustains Jobs



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

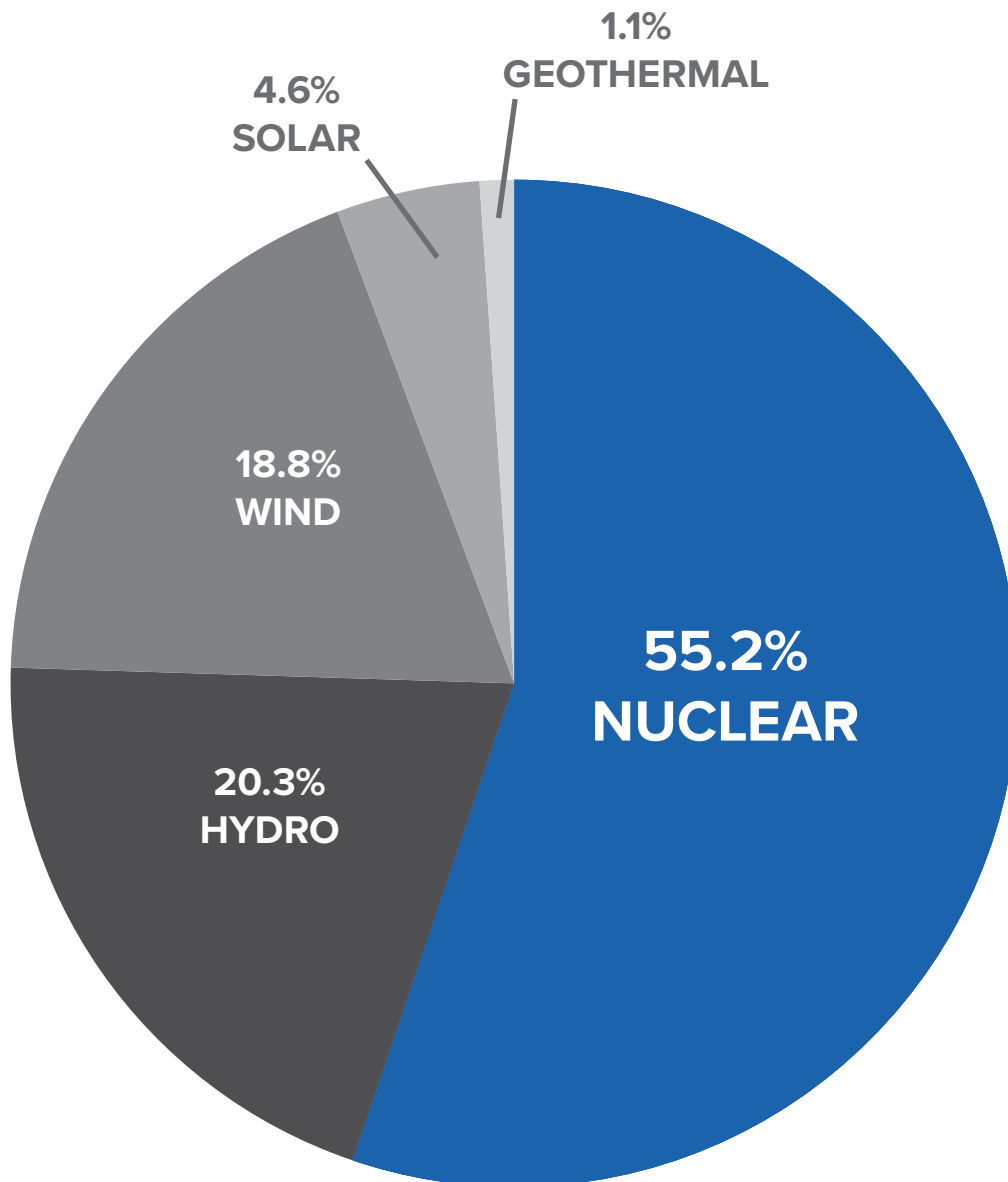
Nuclear Energy = Clean Air



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 Agency. Updated: March 2019

The Nuclear Industry's Contribution to the US Economy, The Brattle Group, July 2015.

2018 U.S. Emissions-Free Electricity Fuel Shares

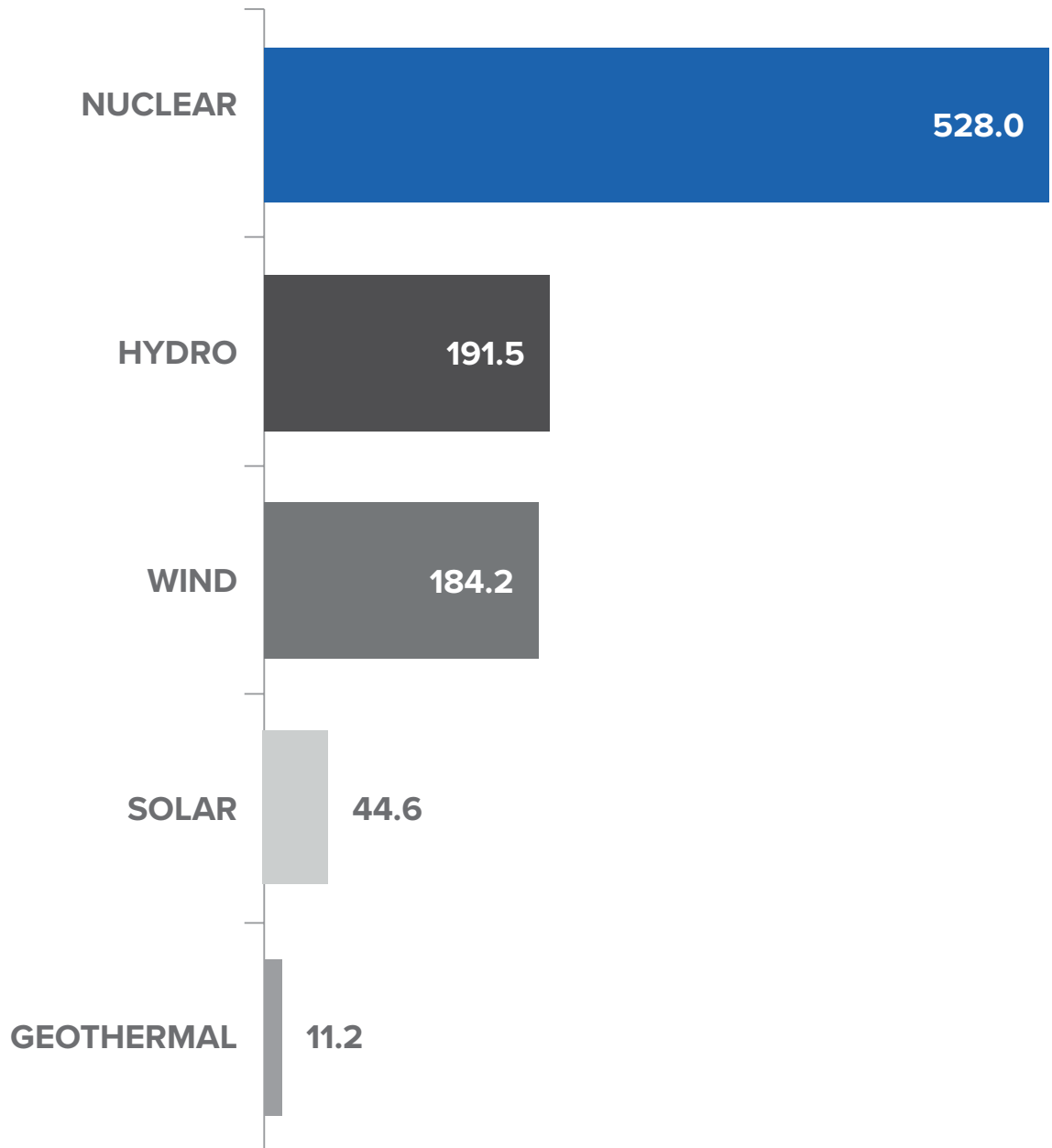


Source: U.S. Energy Information Administration.

Updated: March 2019

CO2 Emissions Avoided by the U.S. Power Industry

Million Metric Tons, 2018

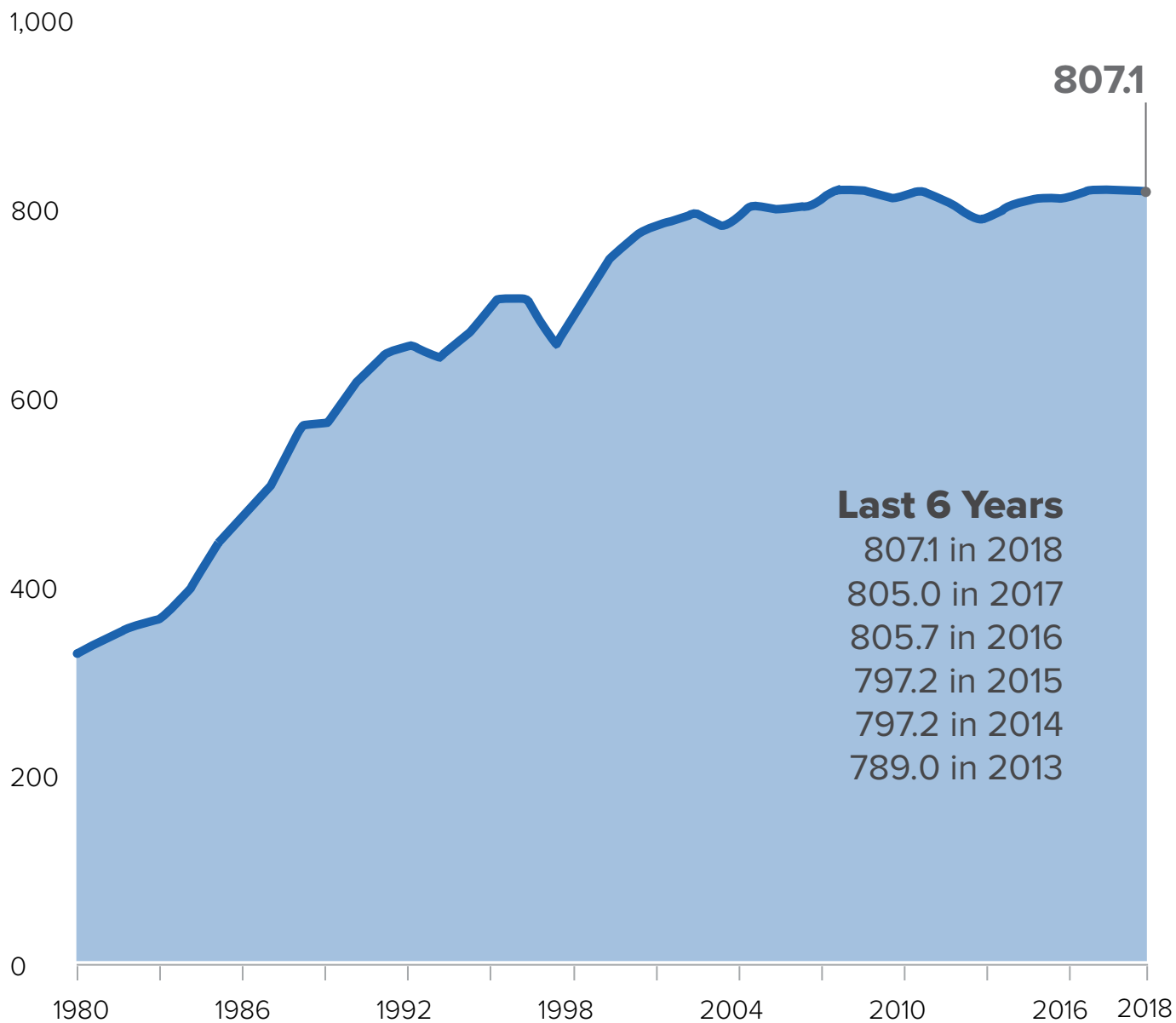


Source: Emissions avoided are calculated using regional and national fossil fuel emissions rates from the U.S. Environmental Protection Agency and latest plant generation data from the U.S. Energy Information Administration.

Updated: March 2019

U.S. Nuclear Electricity Generation

Billion Kilowatt-Hours

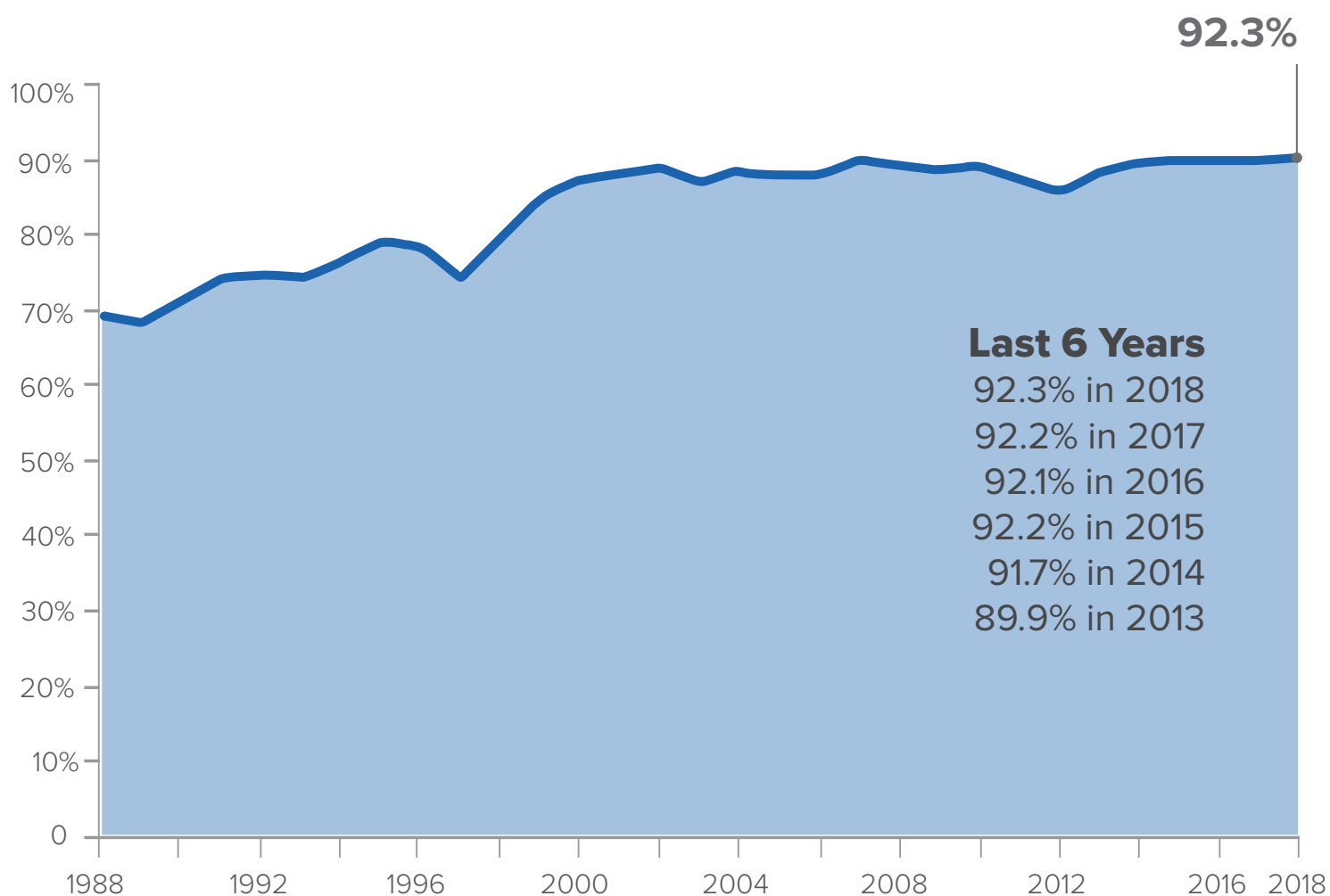


Source: U.S. Energy Information Administration.

Updated: March 2019

U.S. Nuclear Industrywide Capacity Factors

Nuclear industry has had an average capacity factor of 90 percent over the last 20 years.

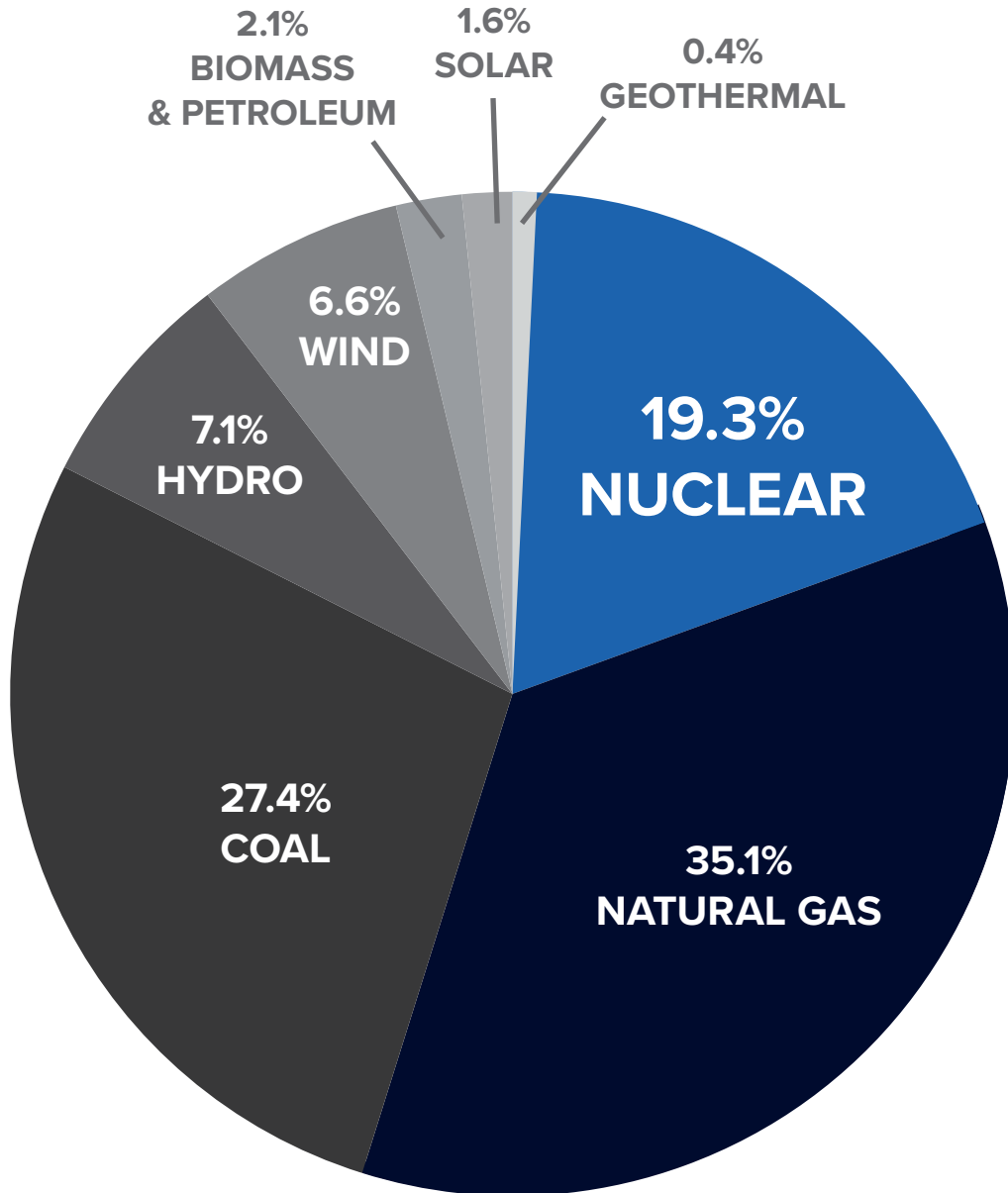


Note: U.S. Energy Information Administration reports 92.7 percent for 2018. NEI's calculation (92.3 percent) accurately accounts for Oyster Creek Generating Station's closure in September 2018.

Source: U.S. Energy Information Administration.

Updated: March 2019

2018 U.S. Electricity Generation Fuel Shares

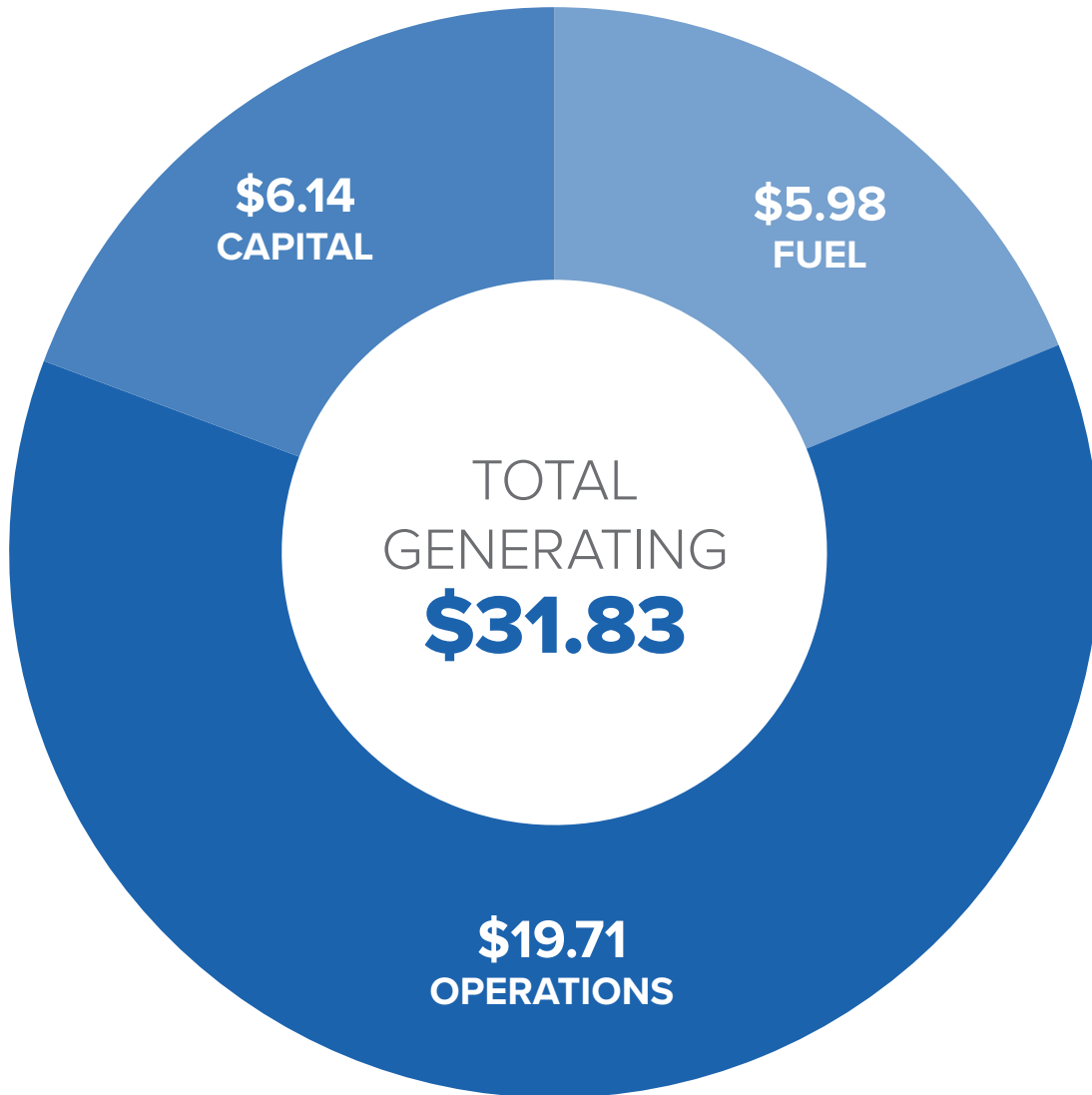


Source: U.S. Energy Information Administration.

Updated: March 2019

2018 Industry Average Total Generating Costs

Dollars Per Megawatt-Hour



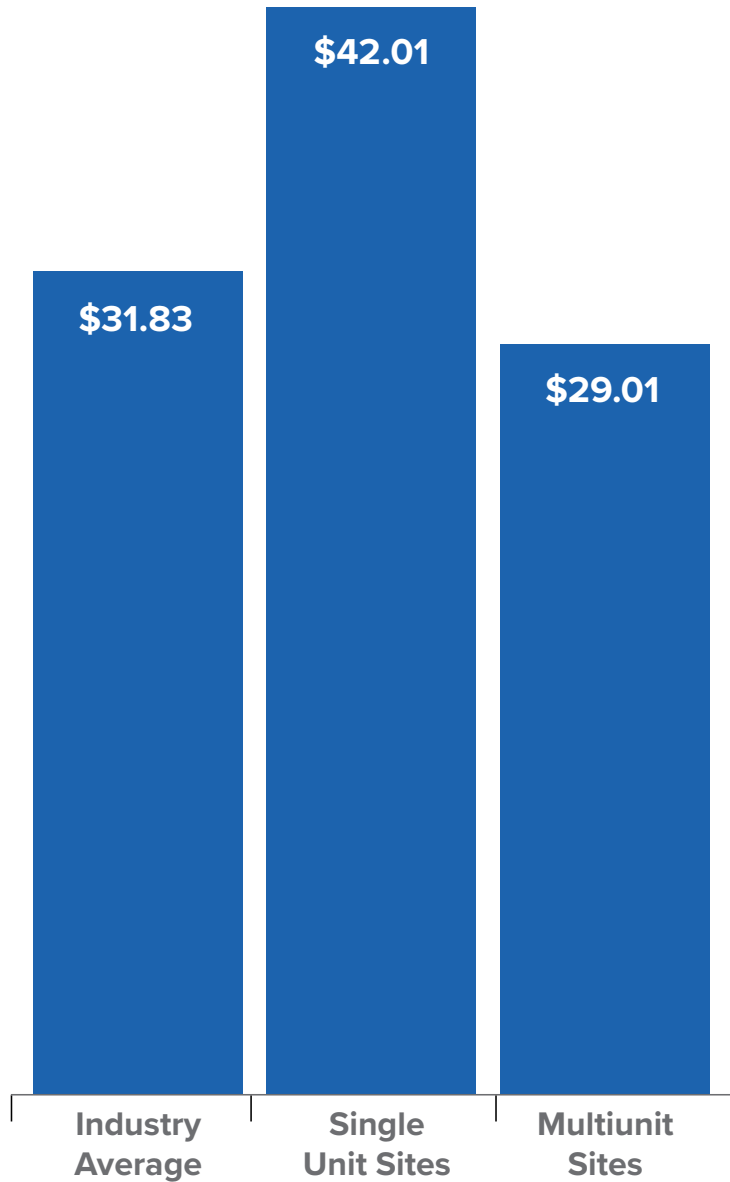
Total generating cost is the sum of the fuel cost, capital cost and operations cost.

Source: Electric Utility Cost Group.

Updated: February 2019

2018 Industry Average Total Generating Costs

Dollars Per Megawatt-Hour



Total generating cost is the sum of the fuel cost, capital cost and operations cost.

Source: Electric Utility Cost Group.

Updated: February 2019

U.S. Nuclear Plant Costs

Average total generating costs have decreased from \$42.36 per megawatt-hour in 2012 peak to \$31.83 per megawatt-hour in 2018, a reduction of 25 percent.

Dollars Per Megawatt-Hour In 2018 Dollars

YEAR	FUEL	CAPITAL	OPERATIONS	TOTAL GENERATING
2002	\$6.07	\$4.16	\$19.72	\$29.95
2004	\$5.60	\$5.99	\$19.66	\$31.25
2007	\$5.44	\$6.49	\$20.22	\$32.15
2010	\$7.17	\$9.71	\$21.89	\$38.76
2011	\$7.53	\$10.67	\$23.21	\$41.41
2012	\$7.96	\$11.48	\$22.91	\$42.36
2015	\$7.28	\$8.44	\$22.09	\$37.81
2016	\$7.07	\$7.05	\$21.38	\$35.50
2017	\$6.59	\$6.80	\$20.92	\$34.32
2018	\$5.98	\$6.14	\$19.71	\$31.83
2017-2018 Change	-9.3%	-9.7%	-5.8%	-7.2%
2012-2018 Change	-25.0%	-46.5%	-14.0%	-24.9%

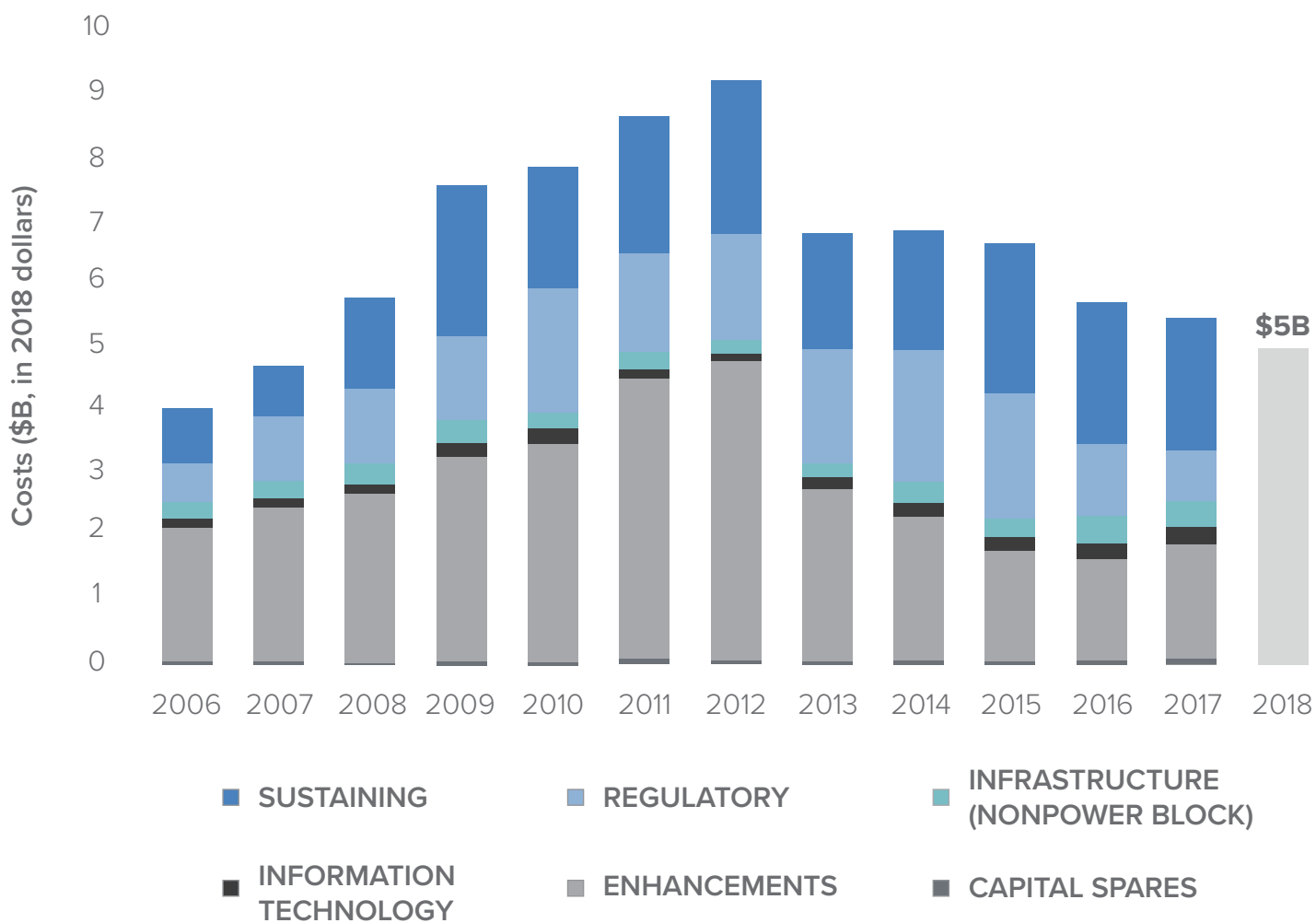
Total generating cost is the sum of the fuel cost, capital cost and operations cost.

Source: Electric Utility Cost Group.

Updated: February 2019

U.S. Nuclear Plant Capital Cost Trends

Capital expenditures decreased 9.7 percent in 2018 from 2017.



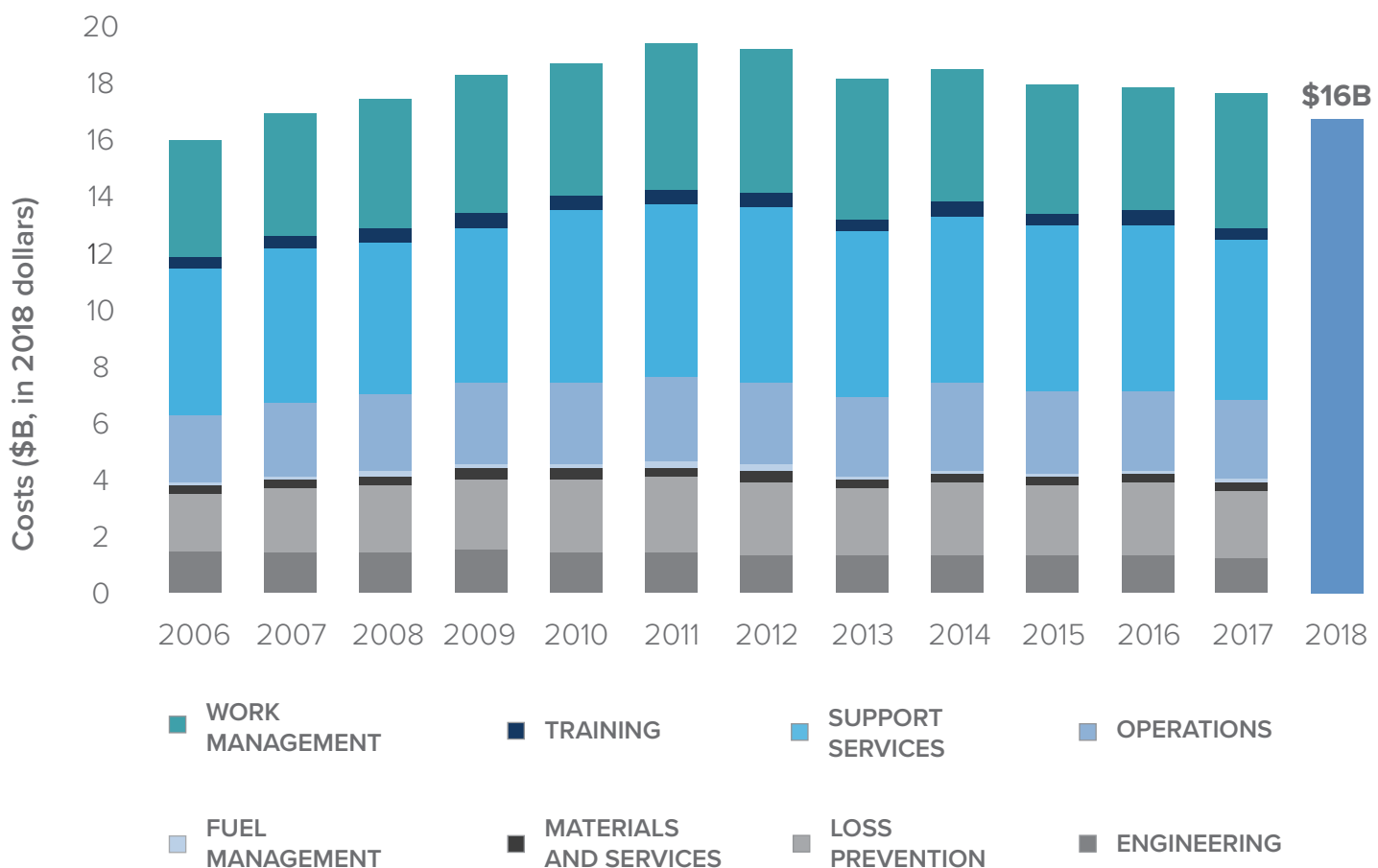
Note: Detailed 2018 cost breakdown will be available in June 2019.

Source: Electric Utility Cost Group.

Updated: March 2019

U.S. Nuclear Plant Operations Costs

Operations costs decreased 5.8% percent in 2018 from 2017.



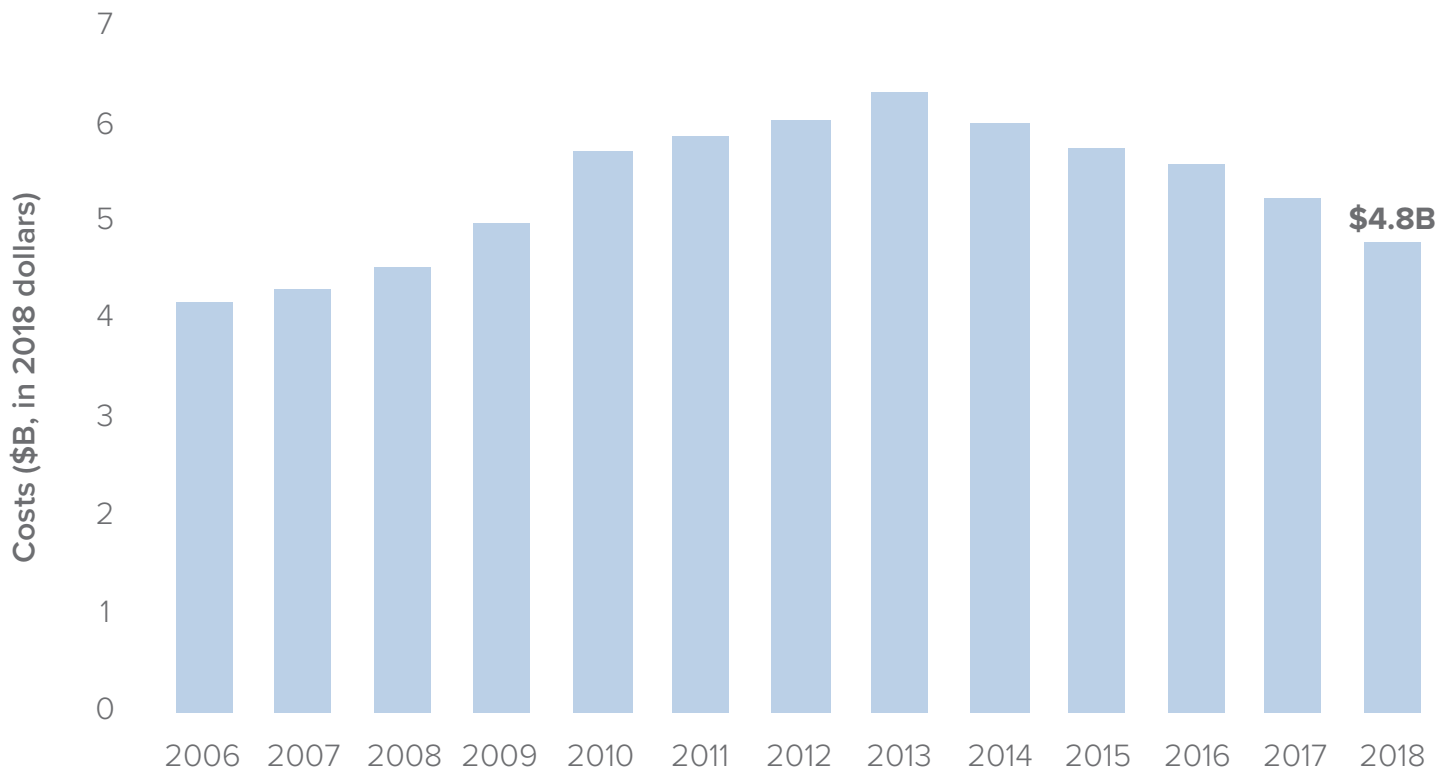
Note: Detailed 2018 cost breakdown will be available in June 2019.

Source: Electric Utility Cost Group.

Updated: March 2019

U.S. Nuclear Plant Fuel Cost Trends

Fuel costs decreased 9.3 percent in 2018 from 2017.



Source: Electric Utility Cost Group.

Updated: March 2019

Premature Closures

- 5,299 megawatts-electric of baseload capacity
- 26.9 million metric tons of CO₂ avoided
- More than 4,500 jobs impacted

PLANT	State	MWe	CLOSURE YEAR	FINAL YEAR GENERATED (billion kilowatt-hours/year)	FINAL YEAR CO ₂ EMISSIONS AVOIDED (million tons/year)
Crystal River 3	FL	860	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	620	2014	4.8	2.4
Fort Calhoun	NE	478	2016	3.5	3.4
Oyster Creek	NJ	625	2018	5.4	4.0

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: March 2019

Announced Shutdowns

- 11,126 megawatts-electric of baseload capacity
- 53.8 million metric tons of CO2 avoided in 2018
- 89.6 billion kilowatt-hours of electricity generated in 2018
- More than 8,200 direct jobs impacted

PLANT	State	MWe	CLOSURE YEAR	ELECTRICITY GENERATED IN 2018 (billion kilowatt-hours/year)	CO2 EMISSIONS AVOIDED IN 2018 (million tons/year)
Three Mile Island 1	PA	803	2019	7.3	5.0
Pilgrim	MA	679	2019	4.4	2.0
Davis-Besse	OH	894	2020	7.4	5.1
Duane Arnold	IA	601	2020	4.9	4.6
Indian Point 2 & 3	NY	2,057	2020-2021	16.3	7.6
Beaver Valley 1 & 2	PA	1,808	2021	14.7	10.1
Perry	OH	1,240	2021	10.9	7.5
Palisades	MI	804	2022	5.5	4.6
Diablo Canyon 1 & 2	CA	2,240	2024-2025	18.2	7.3

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: March 2019

Plants Saved from Premature Closure

- 11,816 megawatts-electric of baseload capacity
- 58.3 million metric tons of CO₂ avoided
- More than the electricity generated by all U.S. utility solar in 2018
- More than 7,400 direct jobs saved

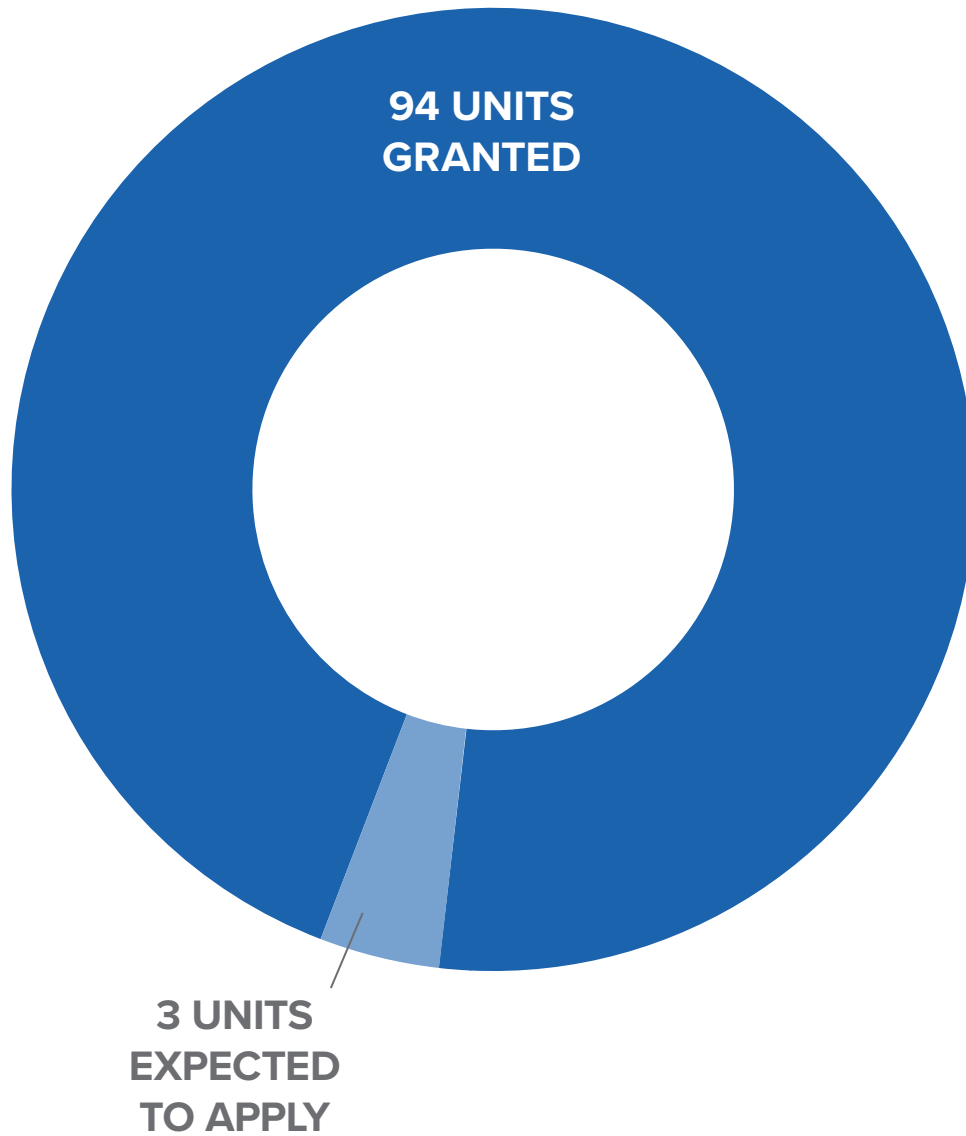
PLANT	State	MWe	PROJECTED CLOSURE YEAR	ELECTRICITY GENERATED IN 2018 (billion kilowatt-hours/year)	CO ₂ EMISSIONS AVOIDED IN 2018 (million tons/year)
Fitzpatrick	NY	851	2017	6.5	3.1
Ginna	NY	582	2017	4.7	2.2
Clinton	IL	1,060	2017	8.3	8.1
Nine Mile Point 1 & 2	NY	1,916	2017-2018	15.4	7.2
Quad Cities 1 & 2	IL	1,819	2018	15.5	10.6
Hope Creek	NJ	1,172	~2020	9.5	6.6
Millstone 2 & 3	CT	2,088	~2020	16.9	7.6
Salem 1 & 2	NJ	2,328	~2020-2021	18.9	13.0

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: March 2019

Applications for Initial License Renewal

Extending plant life from 40 to 60 years

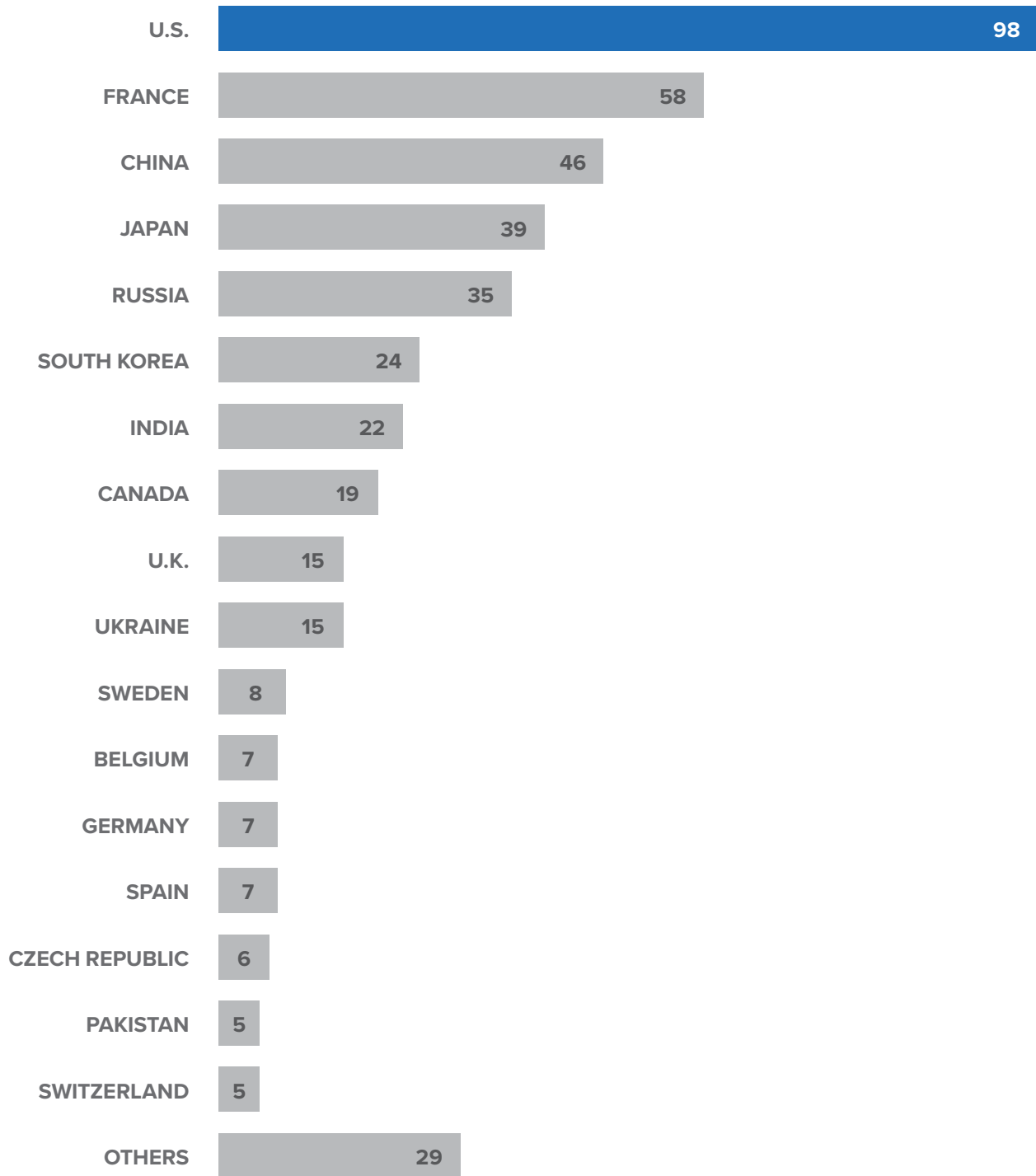


Note: U.S. Nuclear Regulatory Commission has approved initial license renewal applications for 94 reactors. Four reactors, Fort Calhoun, Kewaunee, Oyster Creek and Vermont Yankee, have since ceased operations prematurely.

Source: U.S. Nuclear Regulatory Commission.

Updated: March 2019

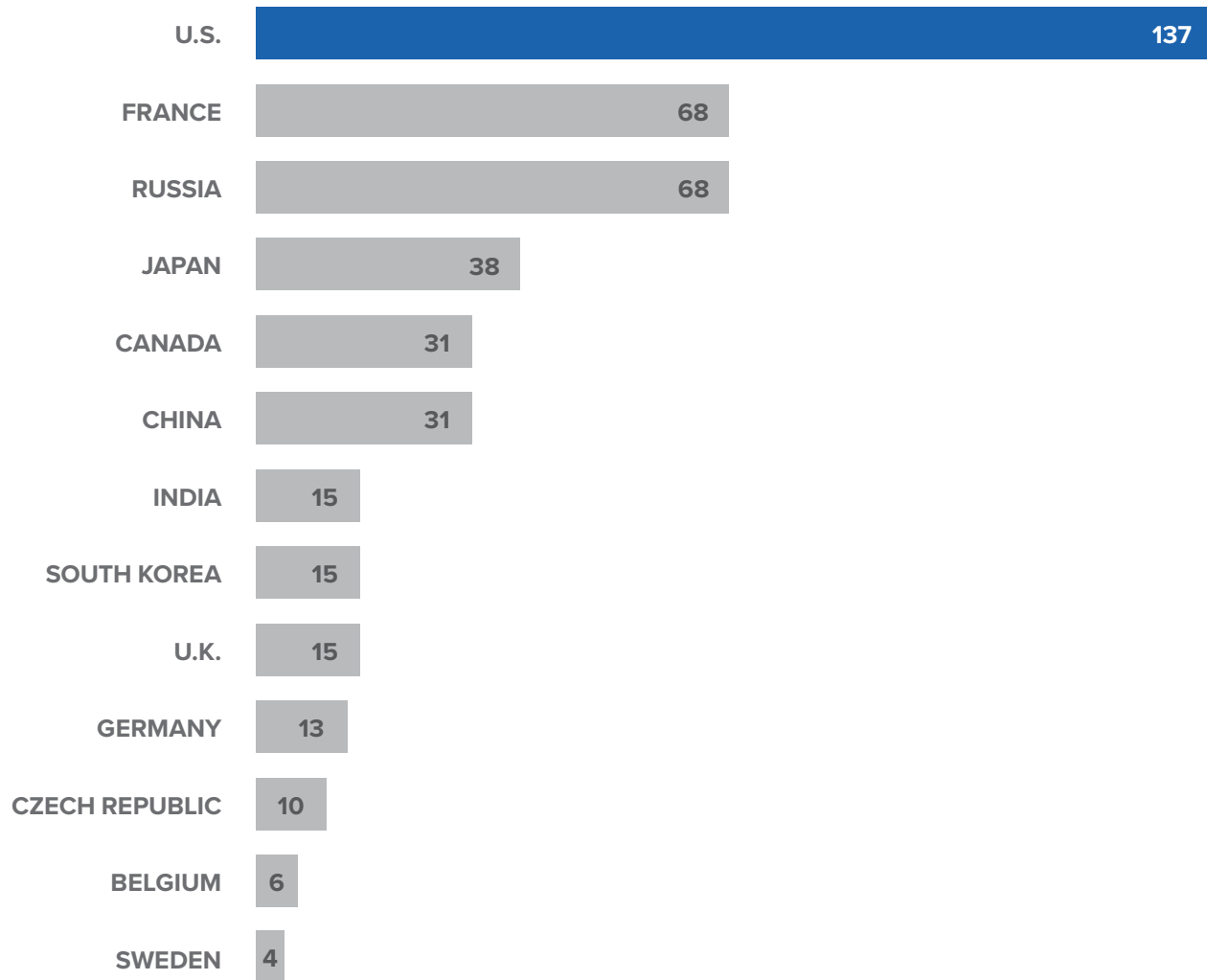
Operating Reactors Around the World



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

Updated: March 2019

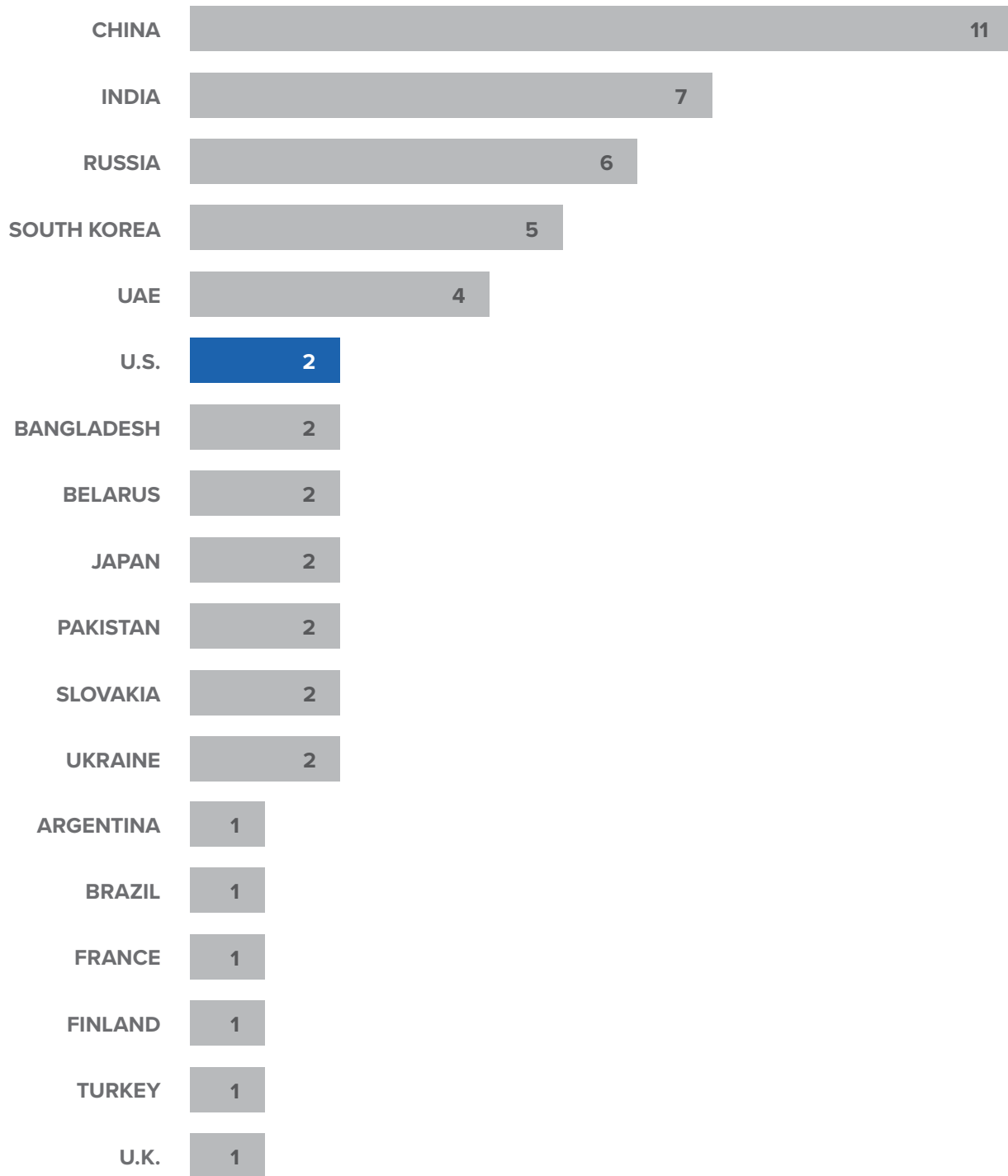
Operating Reactors, by Supplier Country



Sources: American Nuclear Society, International Atomic Energy Agency-Power Reactor Information System.

Updated: October 2018

Reactors Under Construction In Each Country

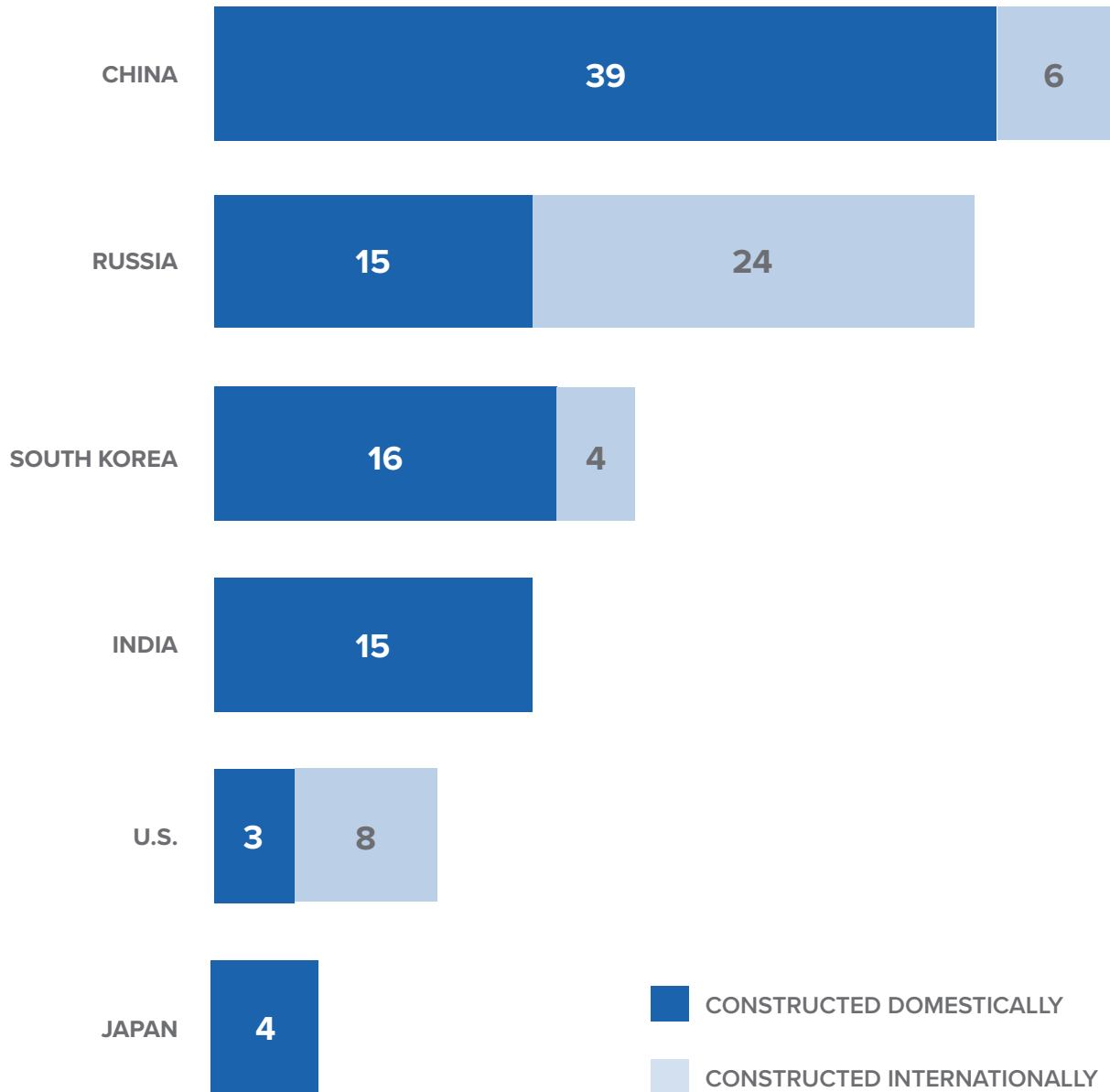


Source: International Atomic Energy Agency-Power Reactor Information System.

Updated: March 2019

International Nuclear Influence

Nuclear plants under construction and constructed since 1997, domestically and internationally.



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

Updated: February 2019



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