NUCLEAR ENERGY INSTITUTE

NUCLEAR BY THE NUMBERS

APRIL 2018

TABLE OF CONTENTS

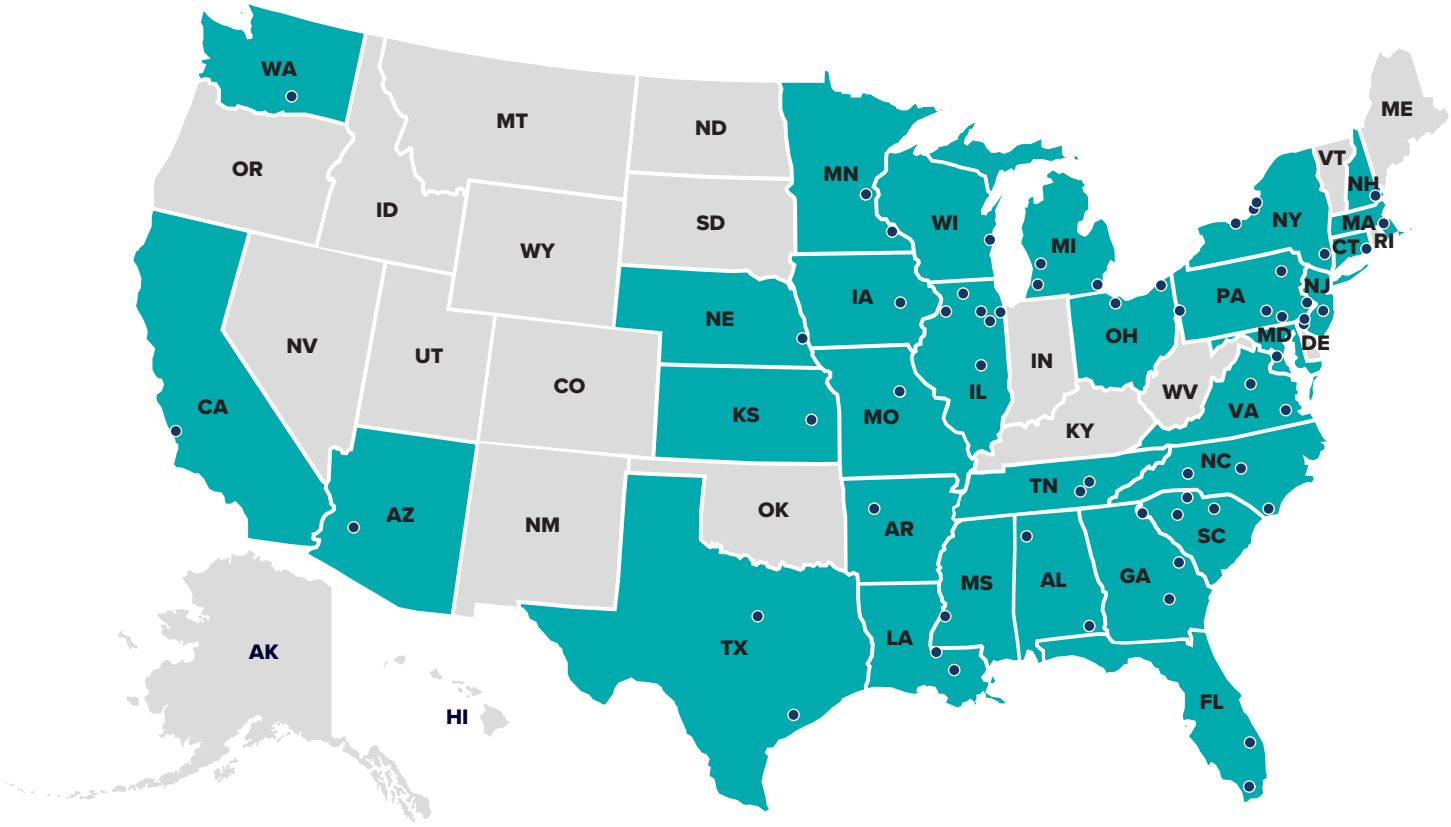
THE NUCLEAR ADVANTAGE

PERFORMANCE AND COST

STATUS AND OUTLOOK

US Nuclear Power Plants

- 99 reactors across 60 sites
- 99,635 MWe of baseload capacity
- 804.9 billion kilowatt-hours in 2017
- 92.2% capacity factor in 2017



Source: U.S. Energy Information Administration

Updated: March 2018

Nuclear Energy Creates and Sustains Jobs

CONTRIBUTES
$10 BILLION IN FEDERAL
AND **$2.2 BILLION IN STATE**
TAXES EACH YEAR

SUPPORTS
475,000
JOBS

SAVES CONSUMERS
AN AVERAGE OF
6%
ON ELECTRICITY BILLS

ADDS
$60
BILLION
TO THE COUNTRY'S
GDP

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

Nuclear Energy = Clean Air

AVOIDS
547.5
MILLION
METRIC TONS OF
CARBON
EMISSIONS
EACH YEAR

PREVENTS
315,000
SHORT TONS
OF NOx

AND

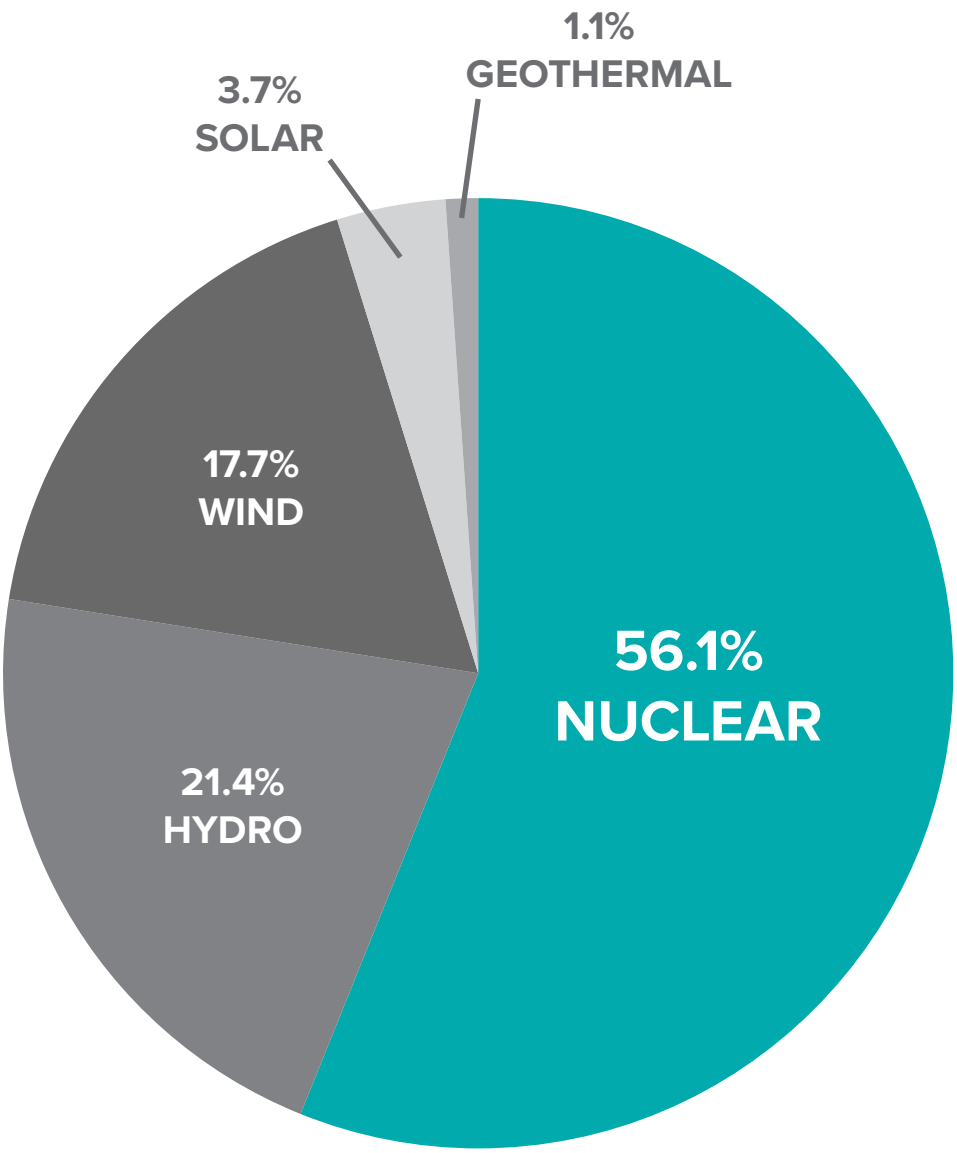
374,000
SHORT TONS
OF SO_2
EMISSIONS

VALUED AT A
SOCIAL COST
OF
$33.4
BILLION
ANNUALLY

Sources: Emissions avoided are calculated using regional and national fossil fuel emissions from the U.S. Environmental Protection Agency and plant generation data from U.S. Energy Information Agency. Updated March 2018

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

2017 US Emissions-Free Fuel Shares

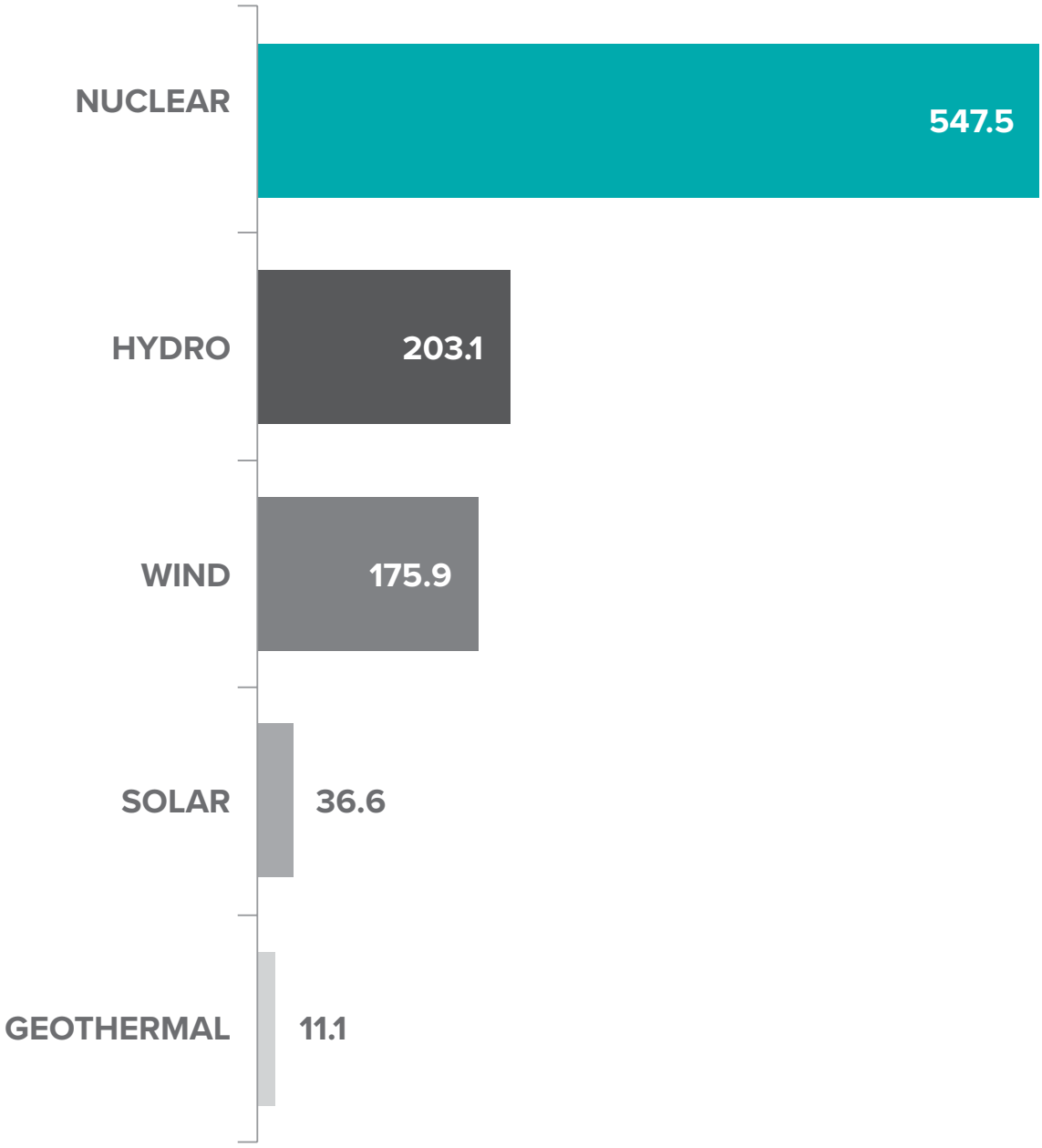


Source: U.S.Energy Information Administration

Updated: March 2018

CO_2 Emissions Avoided by the US Power Industry

Million Metric Tons, 2017

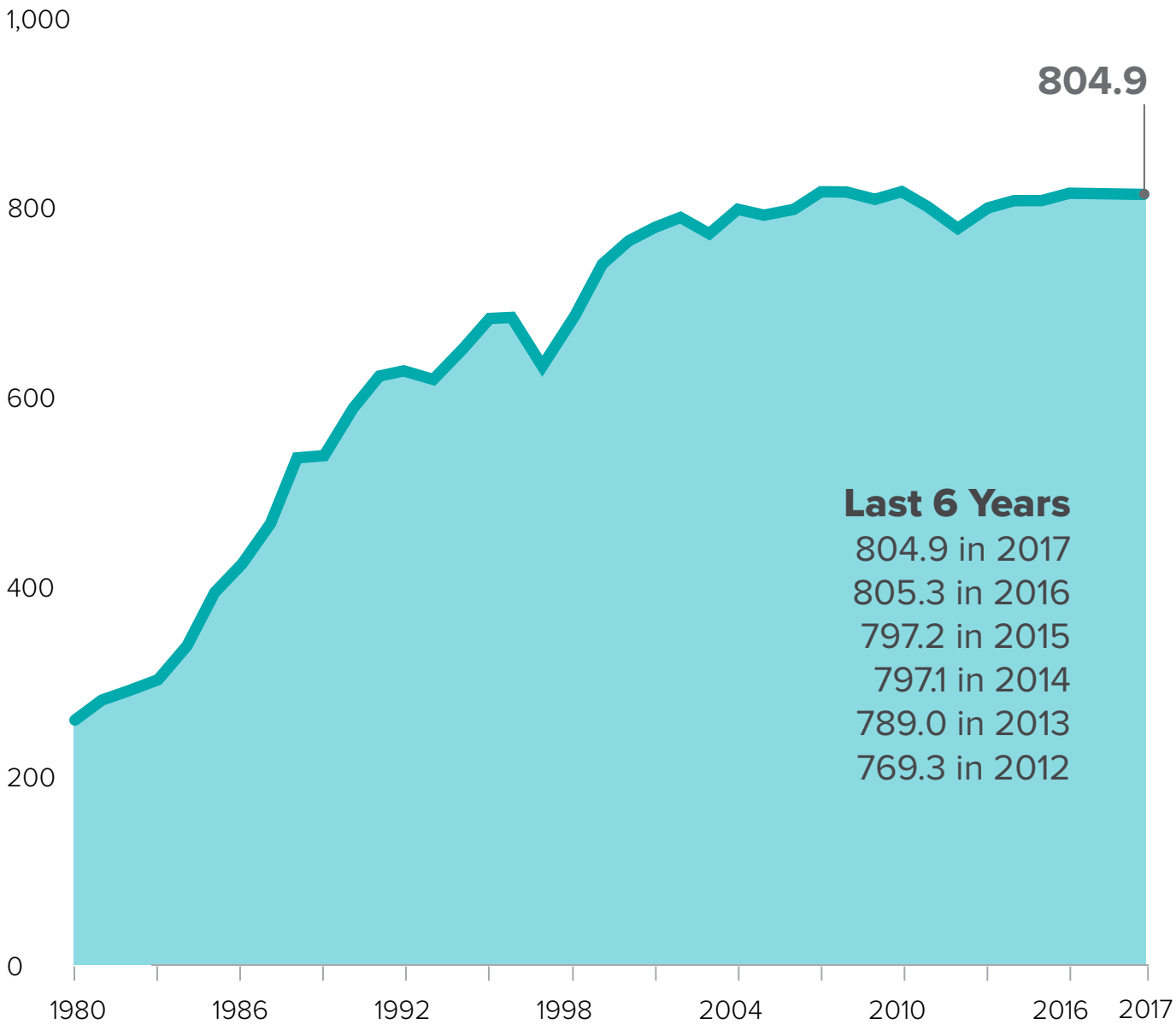


Source: Emissions avoided are calculated using regional and national fossil fuel emissions rates from the U.S. Environmental Protection Agency and plant generation data from the U.S. Energy Information Administration.

Updated: March 2018

US Nuclear Electricity Generation

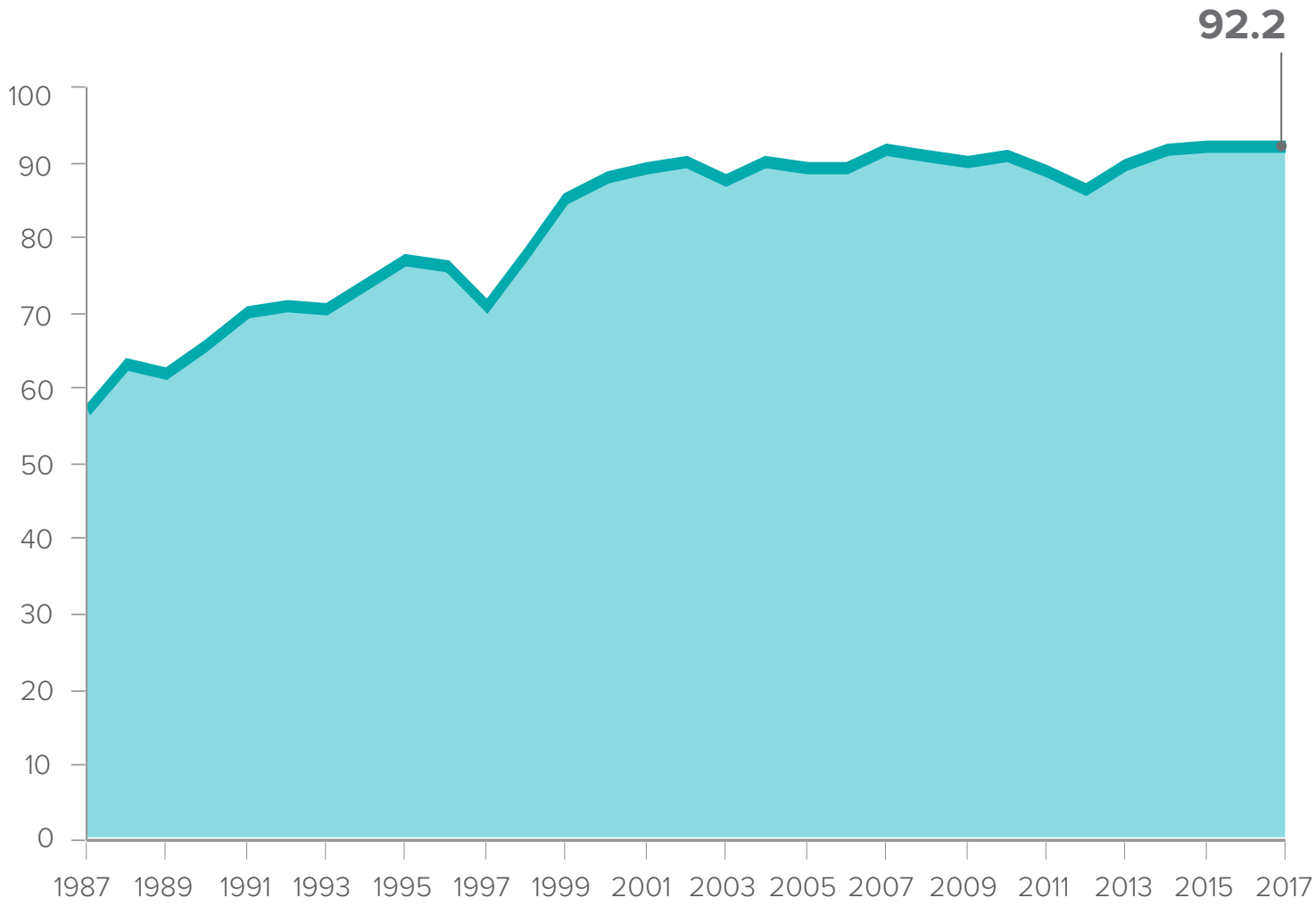
Billion Kilowatt-Hours



Source: U.S. Energy Information Administration

Updated: March 2018

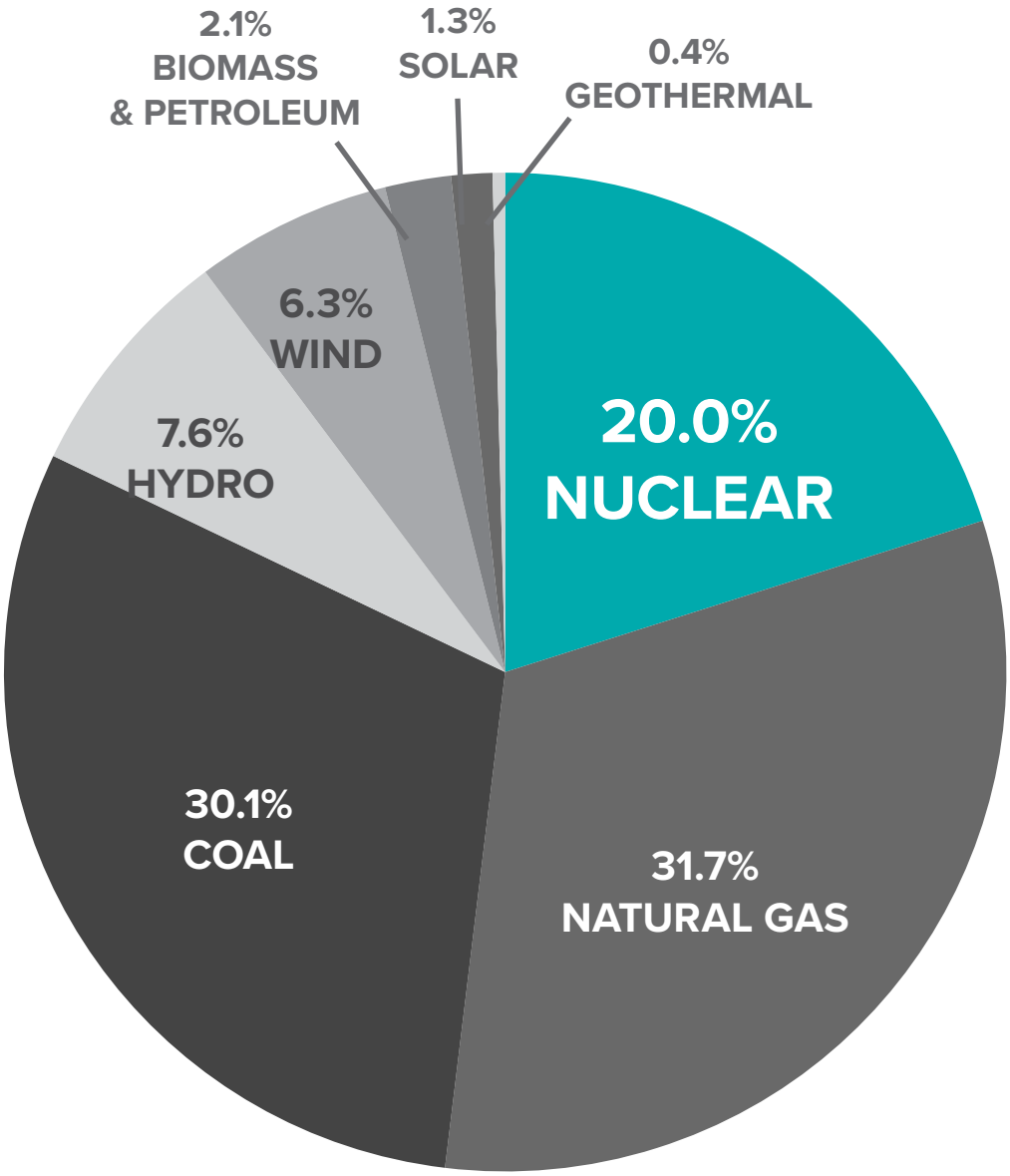
US Nuclear Industrywide Capacity Factors



Source: U.S. Energy Information Administration

Updated: March 2018

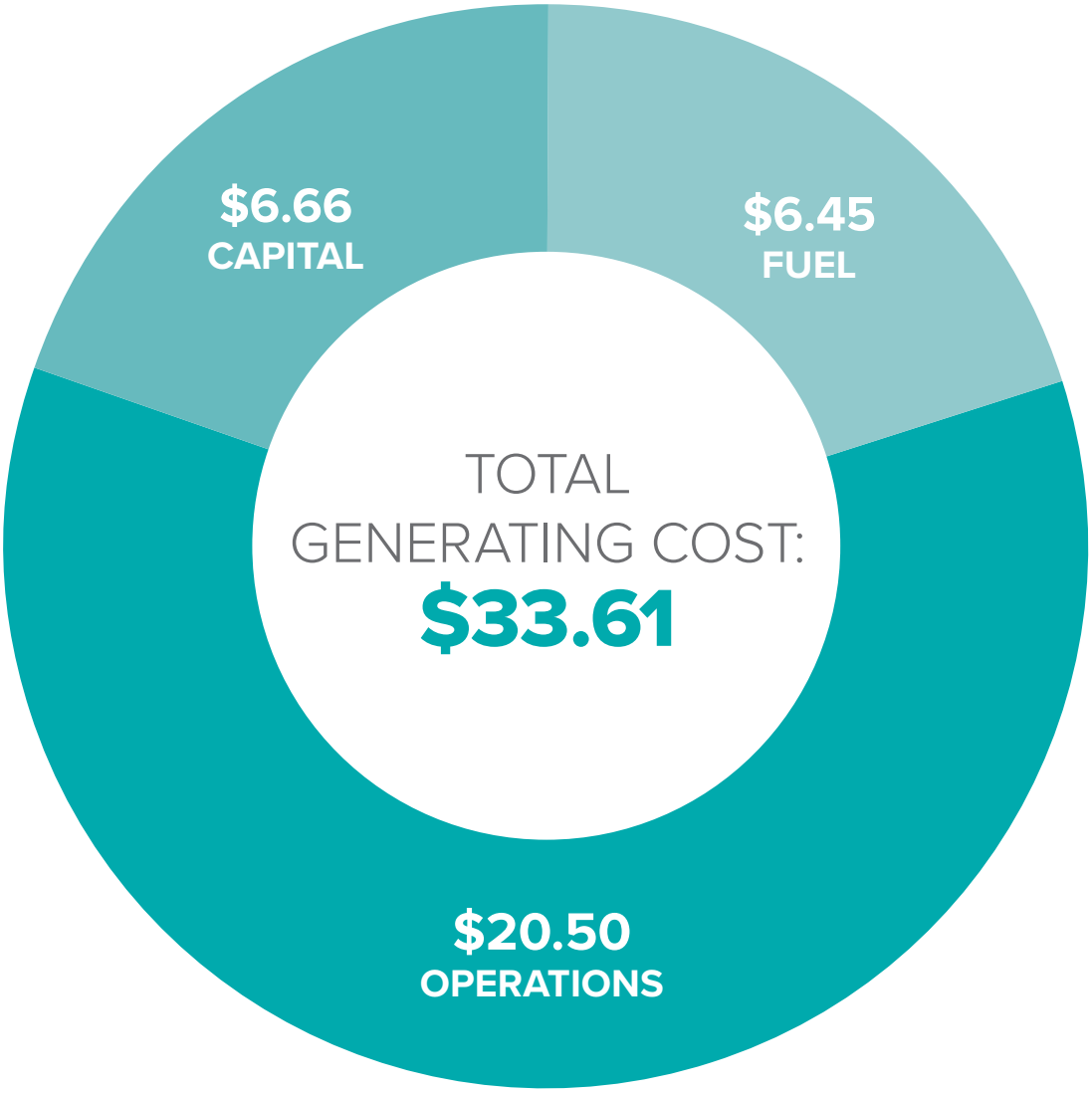
2017 US Electricity Generation Fuel Shares



Source: U.S. Energy Information Administration

Updated: March 2018

2017 Industry Average Total Generating Costs ($/MWh)



Source: Electric Utility Cost Group

Updated: March 2018

2017 Industry Average Total Generating Costs ($/MWh)

Total generating cost = fuel cost + capital cost + operating cost.
Source: Electric Utility Cost Group

Updated: March 2018

US Nuclear Plant Costs (2017 $/MWh):

Average generating costs have decreased from peak of $41.11/MWh in 2012 to $33.61/MWh in 2017.

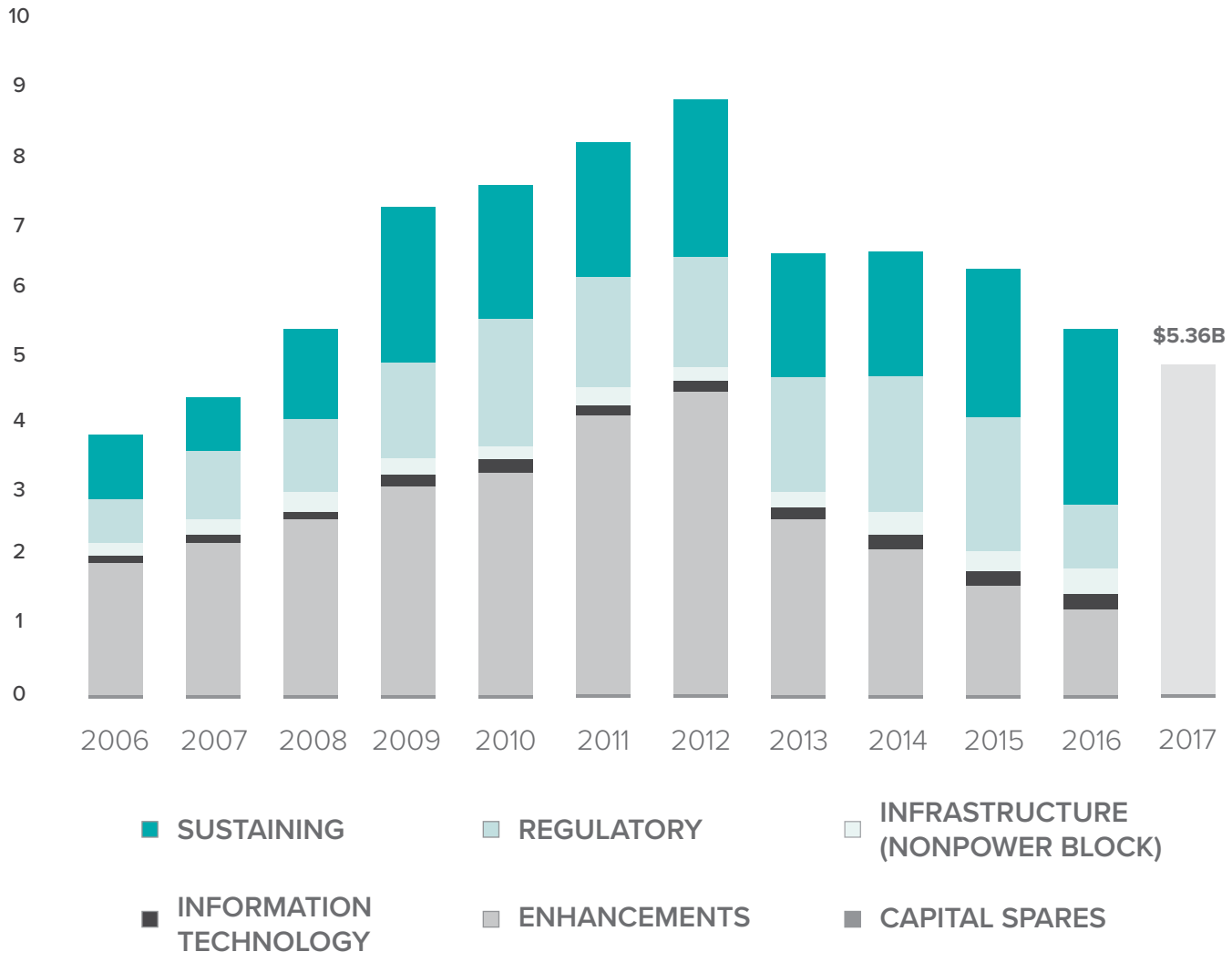
YEAR	FUEL	CAPITAL	OPERATING	TOTAL
2002	5.93	4.06	19.25	29.24
2003	5.79	5.11	19.51	30.41
2004	5.47	5.85	19.19	30.51
2005	5.20	6.01	19.62	30.83
2006	5.22	5.76	19.90	30.88
2007	5.31	6.33	19.74	31.39
2008	5.54	7.00	20.21	32.75
2009	6.14	9.22	21.22	36.58
2010	7.00	9.48	21.37	37.84
2011	7.35	10.42	22.66	40.42
2012	7.77	11.21	22.37	41.35
2013	8.01	8.49	21.67	38.17
2014	7.47	8.47	21.67	37.60
2015	7.10	8.24	21.56	36.91
2016	6.90	6.89	20.87	34.65
2017	6.45	6.66	20.50	33.61
2002-2017 Change	**8.8%**	**64.1%**	**6.5%**	**15.0%**
2011-2017 Change	**-17.1%**	**-40.5%**	**-8.4%**	**-18.7%**

Source: Electric Utility Cost Group

Updated: March 2018

Nuclear Plant Capital Spending Trends

Capital expenditures down 3.7% from 2016.
$5.36 billion in 2017 capital expenditures.



Note: Detailed cost breakdown not yet available for 2017.

Source: Electric Utility Cost Group

Updated: March 2018

Delivering the Nuclear Promise

Estimated Value of Improvement Opportunities

$1.6 BILLION

POTENTIAL SAVINGS

Source: Industry Delivering the Nuclear Promise Steering Group

Updated: November 2017

Premature Nuclear Plant Closures and Annouced Shutdowns

- 15,903 MWe of baseload capacity
- 75.8 million metric tonnes of CO_2 avoided
- Approximately 8,200 direct jobs from announced plant shutdowns

PLANT	MWe	REASON	CLOSURE YEAR	LATEST ELECTRICITY GENERATED (bkWh/year)	LATEST CO2 EMISSIONS AVOIDED (million tons/ year)
Crystal River 3	860	Mechanical	2013	7.0	3.8
San Onofre 2 & 3	2,150	Mechanical	2013	18.1	8.0
Kewaunee	566	Market	2013	4.5	3.8
Vermont Yankee	620	Market	2014	5.1	2.4
Fort Calhoun	478	Market	2016	3.4	3.3
Oyster Creek	610	Policy	2018	5.4	4.0
Three Mile Island 1	803	Market	2019	6.9	5.0
Pilgrim	678	Market	2019	5.1	2.3
Davis-Besse	908	Market	2020	7.9	5.7
Indian Point 2 & 3	2,061	Market & Policy	2020-2021	15.3	7.1
Beaver Valley 1 & 2	1,872	Market	2021	15.3	11.1
Perry	1,268	Market	2021	9.8	7.1
Palisades	789	Market	2022	6.1	5.3
Diablo Canyon 1 & 2	2,240	Policy	2024-2025	17.9	6.9

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 Administation.
Updated: March 2018

Nuclear Plants Saved from Premature Closure by State Policies

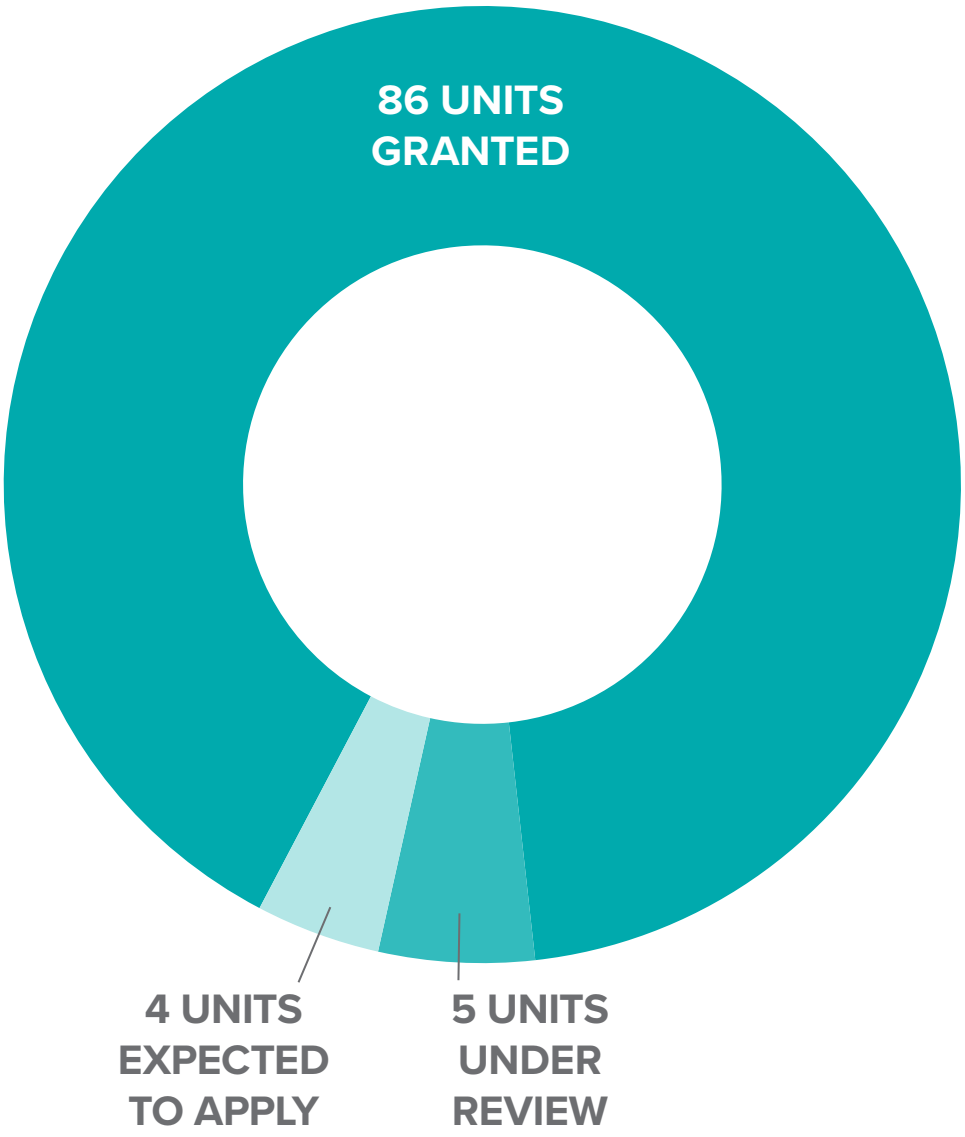
- 8,184 MWe of baseload capacity
- 39.2 million metric tonnes of CO_2 avoided
- More than the electricity generated by all US utility solar in 2017
- More than 5,400 direct jobs saved

PLANT	MWe	REASON FOR POTENTIAL SHUTDOWN	PROJECTED CLOSURE YEAR	ELECTRICITY GENERATED IN 2017 (bkWh/year)	CO_2 EMISSIONS AVOIDED IN 2017 (million tons/ year)
Fitzpatrick	852	Market	2017	6.2	2.9
Ginna	582	Market	2017	4.7	2.2
Clinton	1,065	Market	2017	8.3	8.1
Millstone 2 & 3	2,096	Market	~2020	16.5	7.4
Nine Mile Point 1 & 2	1,770	Market	2017-2018	16.0	7.4
Quad Cities 1 & 2	1,819	Market	2018	15.4	11.2

Updated: March 2018

Applications for Initial License Renewal

Extending plant life from 40 to 60 years

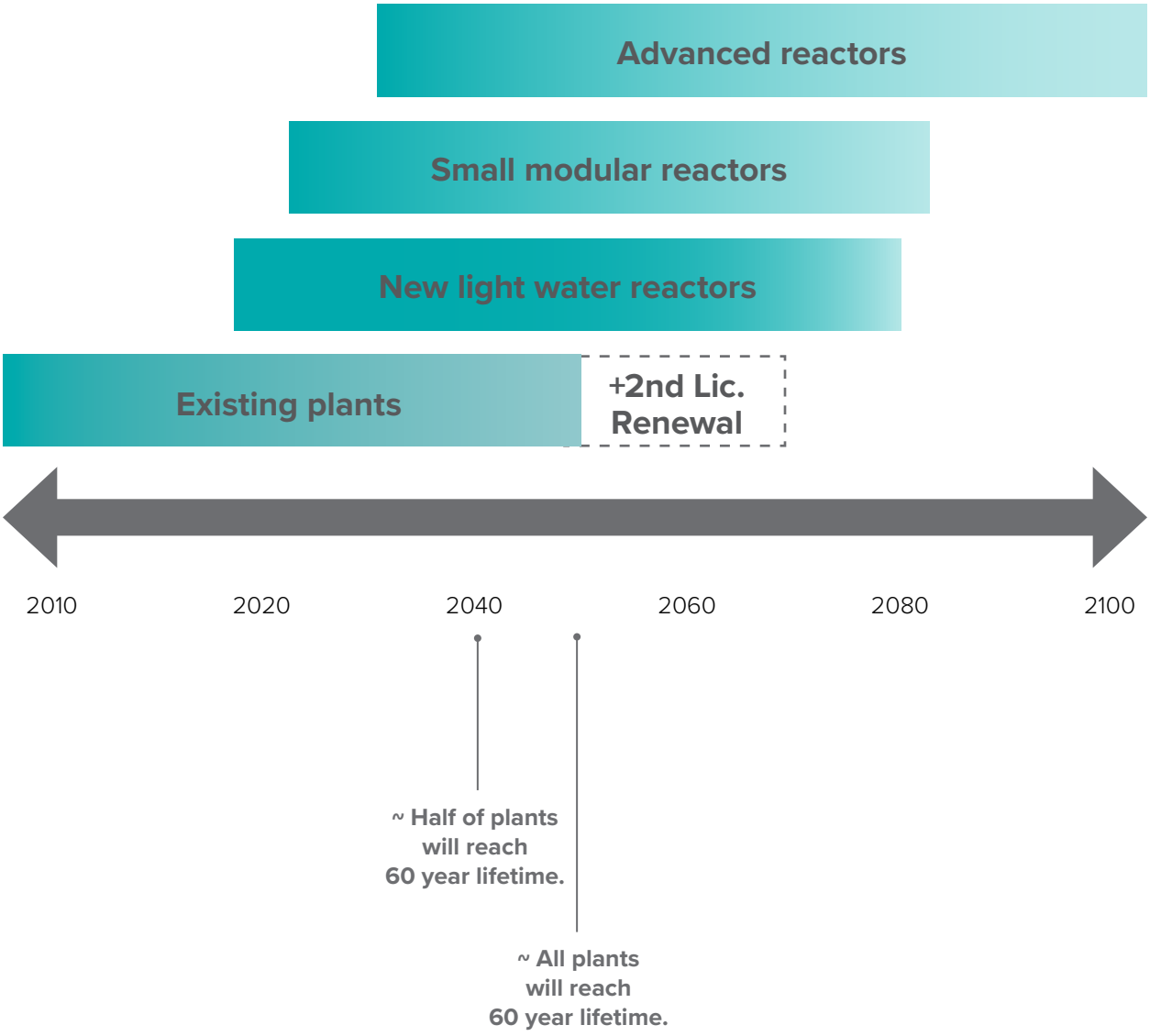


Note: Diablo Canyon 1 and 2's initial license renewal applications are not reflected in the "Units Under Review" category because of the plant's announced closure.

Source: U.S. Nuclear Regulatory Commission

Updated: April 2018

Nuclear Technology Development Timelines



Reactors Under Construction and Planned

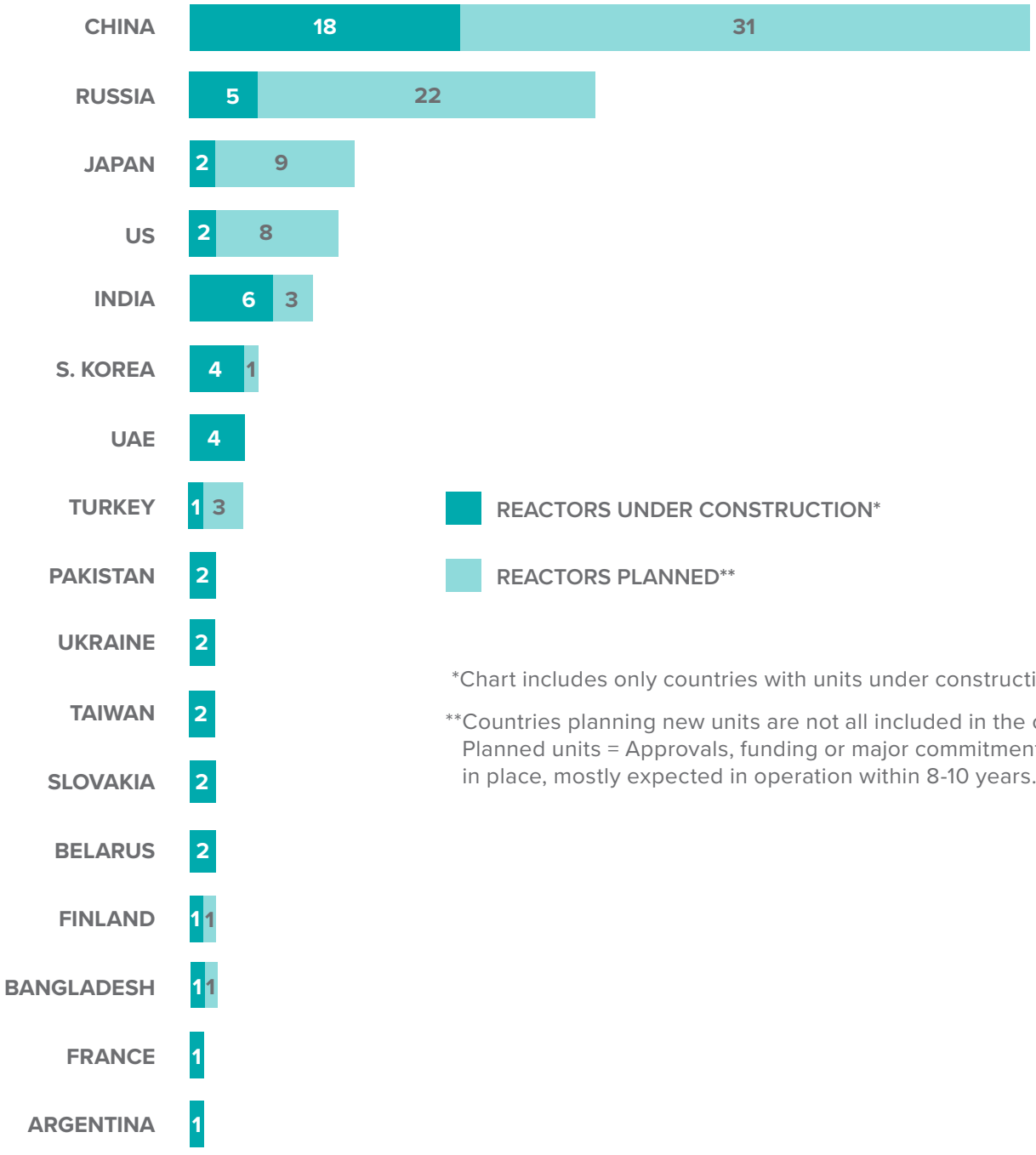


*Chart includes only countries with units under construction.

**Countries planning new units are not all included in the chart. Planned units = Approvals, funding or major commitment in place, mostly expected in operation within 8-10 years.

Sources: International Atomic Energy Agency: Power Reactor Information System

Updated: April 2018

NUCLEAR ENERGY INSTITUTE

1201 F Street, NW
Washington, DC 20004
NEI.org