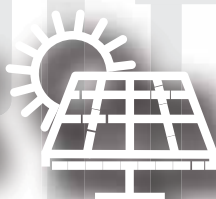
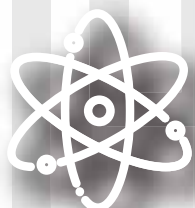


America's Electricity Generation Capacity

2021 Update



AMERICAN
**PUBLIC
POWER**
ASSOCIATION

Powering Strong Communities

America's Electricity Generation Capacity

2021 Update

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The American Public Power Association is the voice of not-for-profit, community-owned utilities that power 2,000 towns and cities nationwide. We represent public power before the federal government to protect the interests of the more than 49 million people that public power utilities serve, and the 93,000 people they employ. More at www.PublicPower.org.

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Executive Summary

The American Public Power Association presents its annual report on current and imminent electricity generation capacity in the United States by types of fuel, location, and ownership type.

Currently, the U.S. has just over 1.2 million megawatts of generation capacity. **Generation capacity refers to the maximum potential power output of a generation source and is the amount of power a plant can produce if it were running at full power. Capacity is measured in megawatts (MW). This should not be confused with generation, which is the actual power output of a generation plant and is measured in megawatt-hours (MWh). This report covers generation capacity only.**

Please note that all capacity figures in this report represent utility-scale capacity only and do not include distributed and other small-scale generating capacity.

The largest fuel source is natural gas, accounting for more than 44% of all generation capacity. Coal, with a share of 19.5%, represents the second largest source of generation capacity. Nuclear, hydro, and wind together account for just over one-quarter of capacity. Solar currently constitutes over 4% of all capacity.

This report analyzes prospective generation capacity in four categories — under construction, permitted, application pending, and proposed.

Over 374,000 MW of new generation capacity is under development in the U.S. — 100,047 MW that is under construction or permitted, and 274,309 MW that is proposed or pending application.

The overall capacity mix continues to shift toward natural gas, solar, and wind. Over the past five years, these three resources have been the dominant sources of new generating capacity in the U.S. Wind and solar especially are the primary sources for new capacity brought online over the past year and slated for development over the next several years.

Solar accounts for 36% of the new generating capacity under construction or permitted, and wind and natural gas account for most of the remaining capacity in these categories. Natural gas, solar, and wind projects account for nearly 97% of all capacity under construction. Of the capacity slated to begin operating in 2021, 97% will be fueled by these three resources, with wind and solar accounting for more than 79% of new capacity.

Not only are the shares of wind and solar generating capacity increasing, but the total aggregate capacity is steadily increasing. New wind capacity topped 10,000 MW in 2020 for the first time and when combined with solar capacity, these sources are expected to exceed 30,000 MW in additions in 2021. While some of this spate of activity can be attributed to expiring tax credits, it also reflects a general shift towards emissions-free generation.

This report also provides information on retirements and planned retirements, cancellations, and capacity added over the past several years. As has been the trend in the past few years, coal-fired resources account for more than half of planned retirements announced in the next few years.

It is difficult to predict with precision the total amount of capacity that will be brought online further in the future, but the sheer amount of capacity at earlier stages of development suggest that wind and solar capacity will continue to significantly increase, buttressed by a steady amount of new natural gas capacity.

Source: Data analyzed for this report was taken from the ABB Velocity Suite database, accessed February 2021.

Current Generation Capacity

Table 1.1 shows the sources from which electricity is currently generated in the U.S. Current nameplate capacity includes capacity labeled as standby, but not mothballed or out of service.

Table 1.1
2021 Electric Generation Capacity, by Fuel Type

Fuel Type	Nameplate Capacity (MW)	Share
Natural Gas	540,739.10	44.09%
Coal	239,531.47	19.53%
Wind	117,980.92	9.62%
Nuclear	104,319.22	8.51%
Hydro	101,089.09	8.24%
Solar	52,290.60	4.26%
Distillate Fuel Oil	23,536.97	1.92%
Residual Fuel Oil	17,412.50	1.42%
Wood/Wood Waste Solids	5,123.16	0.42%
Wood Waste Liquids	4,628.35	0.38%
Geothermal	3,895.49	0.32%
Waste	2,636.55	0.21%
Petroleum Coke	2,472.70	0.20%
Landfill Gas	2,417.63	0.20%
Kerosene	2,152.70	0.18%
Other Gas	1,407.30	0.11%
Waste Heat	1,285.53	0.10%
Blast Furnace Gas	847.60	0.07%
Jet Fuel	537.54	0.04%
Biomass Gases	498.84	0.04%
Purchased Steam	437.40	0.04%
Other	341.74	0.03%
Agriculture Byproduct	283.90	0.02%
Biomass Liquids	190.29	0.02%
Biomass Solids	162.76	0.01%
Waste Oil and Other Oil	142.31	0.01%
Liquified Natural Gas	50.63	0.00%
Liquified Propane Gas	21.00	0.00%
Refuse	15.40	0.00%
Biomass Other	12.40	0.00%
Propane	1.63	0.00%
Total	1,226,462.70	

Table 1.2 shows how America's current generation capacity is distributed through the various regions defined by the North American Electric Reliability Corporation.

Table 1.2
2021 Electric Generation Capacity, by Region

Region	Nameplate Capacity (MW)	Share
SERC	361,112.08	29.44%
RFC	245,434.55	20.01%
WECC	236,436.44	19.28%
ERCOT	123,395.58	10.06%
NPCC	85,703.05	6.99%
SPP	81,232.15	6.62%
MRO	78,494.54	6.40%
US Territories	7,754.00	0.63%
HCC	3,706.48	0.30%
ASCC	3,193.83	0.26%
Total	1,226,462.70	

Regions Defined by NERC (see map in Appendix 1)

ASCC: Alaska Systems Coordinating Council
 ERCOT: Electric Reliability Council of Texas
 FRCC: Florida Reliability Coordinating Council
 HCC: Hawaii Coordinating Council
 NPCC: Northeast Power Coordinating Council
 MRO: Midwest Reliability Organization
 RFC: Reliability First Corporation
 SERC: Southeastern Electric Reliability Council
 SPP: Southwest Power Pool
 WECC: Western Electricity Coordinating Council

Table 1.3 shows the utility-scale capacity additions from 2014-2020. Nearly 97% of the 178,007 MW in additions were from natural gas, wind, and solar facilities.

Table 1.3
Generation Capacity Additions by Fuel Type, 2014-2020

Fuel Type	Nameplate Capacity (MW)	Share
Natural Gas	71,758.90	40.31%
Wind	57,651.55	32.39%
Solar	43,222.78	24.28%
Nuclear	1,269.90	0.71%
Hydro	1,238.96	0.70%
Wood/Wood Waste Solids	600.03	0.34%
Distillate Fuel Oil	587.10	0.33%
Geothermal	329.30	0.18%
Landfill Gas	265.60	0.15%
Waste Heat	236.93	0.13%
Biomass Gases	175.17	0.10%
Wood Waste Liquids	148.00	0.08%
Coal	128.70	0.07%
Waste	114.30	0.06%
Other	53.70	0.03%
Liquified Natural Gas	50.63	0.03%
Biomass Liquids	50.00	0.03%
Purchased Steam	45.00	0.03%
Other Gas	25.70	0.01%
Liquified Propane Gas	21.00	0.01%
Refuse	15.40	0.01%
Biomass Solids	11.70	0.01%
Biomass Other	3.34	0.00%
Jet Fuel	2.00	0.00%
Agriculture Byproduct	1.00	0.00%
Total	178,006.68	

Table 1.4 shows that over 25,000 MW of generation capacity began operating in 2020, with wind and solar accounting for over three-quarters of the new capacity, and natural gas making up almost all the rest. This is the highest proportion of new generating capacity fueled by wind and solar to date.

Table 1.4
Generation Capacity Additions by Fuel Type, 2020

Fuel Type	Nameplate Capacity MW	Share
Wind	11,688.44	45.68%
Solar	7,750.36	30.29%
Natural Gas	5,938.30	23.21%
Hydro	172.10	0.67%
Biomass Gases	15.00	0.06%
Wood/Wood Waste Solids	10.00	0.04%
Distillate Fuel Oil	5.30	0.02%
Other	5.00	0.02%
Landfill Gas	1.60	0.01%
Total	25,586.10	

Table 1.5
Projected Generation Capacity Additions, 2021

Fuel Type	Nameplate Capacity (MW)	Share
Wind	16,972.46	42.69%
Solar	14,413.00	36.25%
Natural Gas	7,009.97	17.63%
Nuclear	1,100.00	2.77%
Hydro	126.70	0.32%
Agriculture Byproduct	49.90	0.13%
Waste Heat	28.60	0.07%
Biomass Solids	21.50	0.05%
Other	14.80	0.04%
Biomass Gases	13.55	0.03%
Distillate Fuel Oil	5.30	0.01%
Landfill Gas	3.60	0.01%
Waste	2.27	0.01%
Total	39,761.65	

Figure 1.1 shows the capacity additions by fuel type from 2014-2020. Between 2014 and 2019, natural gas was the leading resource in all but one year; however, in 2020 more solar and wind capacity came online than natural gas, and this trend is projected to continue in 2021, as seen in Tables 1.4 and 1.5.

As shown in **Table 1.5**, there are 39,762 MW of capacity under construction that are projected to come online in 2021. Wind and solar are projected to make up an even greater share of this new capacity than the year before, with 79% of new capacity fueled by these two resources, with an additional 18% from natural gas.

Figure 1.1
Capacity Additions by Year, 2014-2020

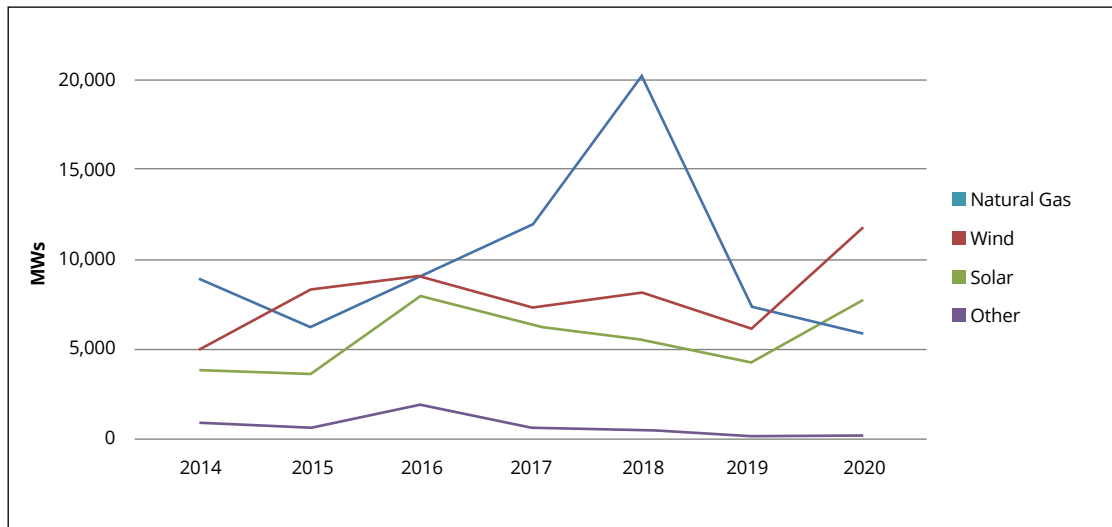
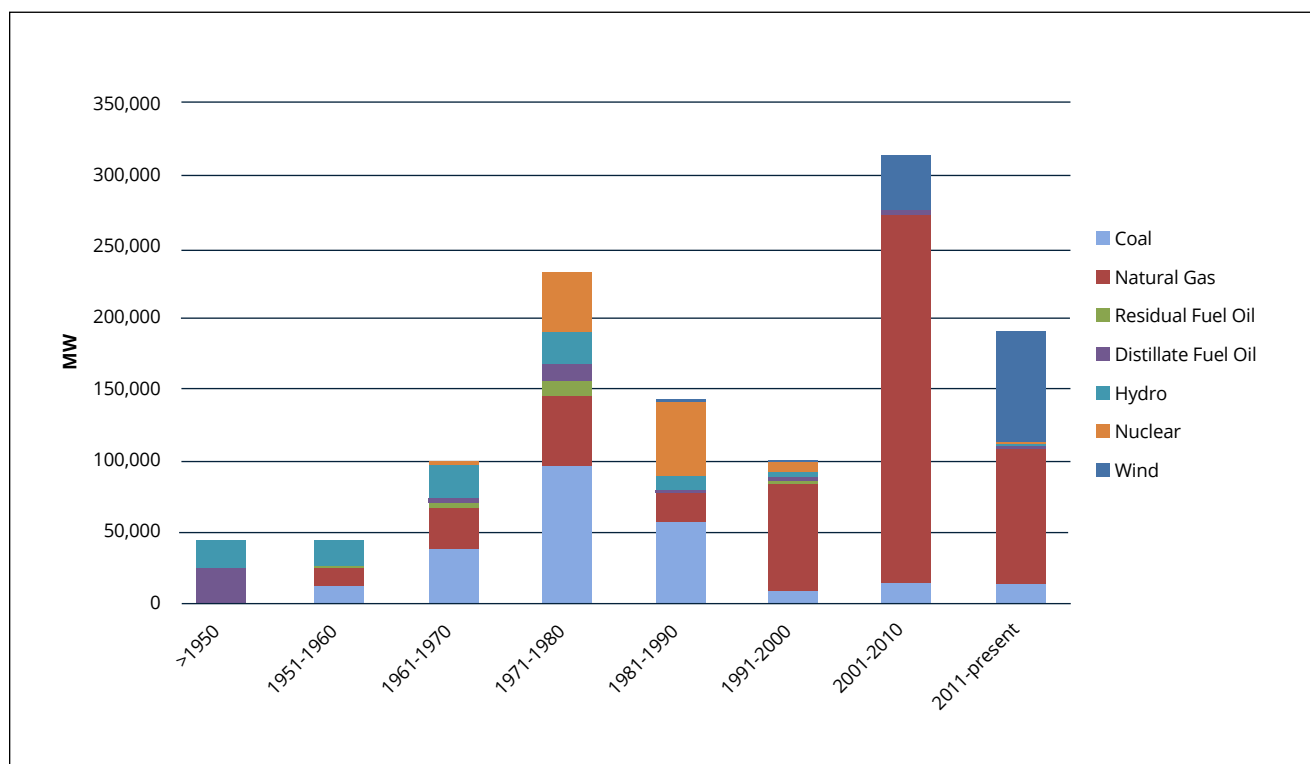


Figure 1.2 shows the age of traditional forms of generating capacity that are still in operation – coal, nuclear, hydro, natural gas, and oil. Most hydro and coal capacity is at least 40 years old, having come online by 1980. Almost all domestic nuclear capacity became operational between

1969 and 1990. While natural gas capacity dates back to the 1950s, the bulk of natural gas capacity is less than 25 years old. This chart does not show many forms of renewable generation, almost all of which came online after the turn of the 21st century.

Figure 1.2
Age of Traditional Forms of Electric Generation



Future Generating Capacity by Development Stage

Tables 2.1 – 2.4 show the fuel makeup of generation capacity under construction, permitted, or proposed.

Table 2.1 shows the sources for the 55,730 MW of generation capacity under construction. Wind and solar account for 71% of the capacity under construction, with natural gas making up nearly all the rest.

Table 2.1
Plants Under Construction, by Fuel Type

Fuel Type	Nameplate Capacity (MW)	Share
Wind	21,539.56	38.65%
Solar	18,386.94	32.99%
Natural Gas	13,299.17	23.86%
Nuclear	2,200.00	3.95%
Hydro	126.70	0.23%
Agriculture Byproduct	49.90	0.09%
Biomass Gases	37.05	0.07%
Biomass Solids	36.50	0.07%
Waste Heat	28.60	0.05%
Other	14.80	0.03%
Distillate Fuel Oil	5.30	0.01%
Landfill Gas	3.60	0.01%
Waste	2.27	0.00%
Total	55,730.39	

Table 2.2 shows the fuel makeup for plants that have received permits but that have not yet started construction. Solar is the leading resource choice for permitted plants, accounting for nearly 44% of the 44,316 MW of permitted capacity, with wind and natural gas accounting for another 53%.

Table 2.2
Permitted Plants, by Fuel Type

Fuel Type	Nameplate Capacity (MW)	Share
Solar	19,490.82	43.98%
Natural Gas	15,547.60	35.08%
Wind	7,766.63	17.53%
Hydro	893.23	2.02%
Nuclear	360.00	0.81%
Geothermal	213.00	0.48%
Wood/Wood Waste Solids	42.00	0.09%
Landfill Gas	3.20	0.01%
Total	44,316.48	

Table 2.3 shows the fuel mix for the 58,918 MW of capacity awaiting approval of applications. Over three-quarters of this capacity would be fueled by wind and solar.

Table 2.3
Plants Pending Application, by Fuel Type

Fuel Type	Nameplate Capacity (MW)	Share
Solar	27,973.83	47.48%
Wind	18,167.25	30.83%
Natural Gas	10,282.90	17.45%
Hydro	2,371.96	4.03%
Geothermal	102.00	0.17%
Other	14.00	0.02%
Landfill Gas	3.00	0.01%
Biomass Gases	2.80	0.00%
Total	58,917.74	

Table 2.4 shows the resource mix for the 215,391 MW of capacity in the proposed stage. This is the earliest and most uncertain stage of development and includes units that are least likely to be built. Wind and solar account for three-quarters of the proposed capacity. This category also has the highest proportion – 15% – of capacity other than wind, natural gas, and solar.

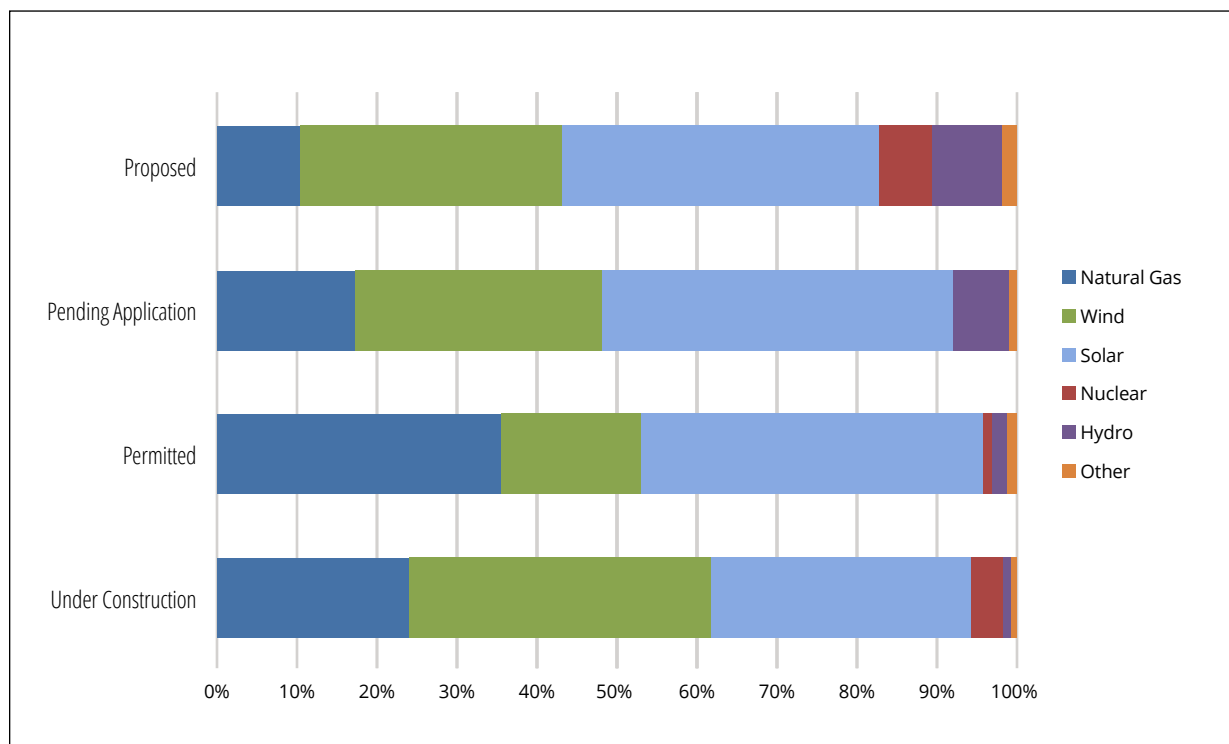
Table 2.4
Proposed Plants, by Fuel Type

Fuel Type	Nameplate Capacity (MW)	Share
Solar	91,188.05	42.34%
Wind	70,651.60	32.80%
Natural Gas	22,099.44	10.26%
Hydro	15,312.54	7.11%
Nuclear	14,562.40	6.76%
Residual Fuel Oil	632.40	0.29%
Other	445.80	0.21%
Distillate Fuel Oil	222.80	0.10%
Geothermal	112.90	0.05%
Coal	77.00	0.04%
Waste Heat	30.89	0.01%
Landfill Gas	17.69	0.01%
Biomass Other	12.41	0.01%
Biomass Liquids	10.00	0.00%
Wood/Wood Waste Solids	8.50	0.00%
Biomass Solids	4.60	0.00%
Biomass Gases	2.03	0.00%
Total	215,391.04	

Figure 2.1 tracks the major fuel sources in each stage of development. This chart demonstrates that wind, solar, and natural gas together are dominant across all stages of

development, with almost all capacity planned and under construction being fueled by these three resources.

Figure 2.1
Share of Fuel Type by Stage of Development, 2020



Future Generating Capacity by Region

Tables 3.1 – 3.4 show new plants that are being built or planned for construction in each North American Electric Reliability Corporation region. (See Appendix 1 for definition of regions and included states.)

Table 3.1 shows that WECC and RFC account for nearly 48% of the capacity under construction, while another 35% are located in ERCOT and SERC.

Table 3.1
Plants Under Construction, by Region

Region	Nameplate Capacity (MW)	Share
WECC	14,030.34	25.18%
RFC	12,542.81	22.51%
ERCOT	9,988.02	17.92%
SERC	9,743.40	17.48%
MRO	4,013.80	7.20%
SPP	3,846.80	6.90%
NPCC	1,508.12	2.71%
HCC	45.50	0.08%
ASCC	11.60	0.02%
Total	55,730.39	

Table 3.2 shows that SERC has more permitted capacity than any other region. RFC, WECC, and ERCOT have most of the remaining permitted capacity.

Table 3.2
Permitted Plants, by Region

Region	Nameplate Capacity (MW)	Share
SERC	13,723.91	30.97%
RFC	11,697.83	26.40%
ERCOT	9,383.33	21.17%
WECC	6,099.91	13.76%
MRO	1,514.20	3.42%
NPCC	1,087.41	2.45%
SPP	775.50	1.75%
ASCC	29.40	0.07%
HCC	5.00	0.01%
Total	44,316.48	

Regions Defined by NERC (see map in Appendix 1)

ASCC: Alaska Systems Coordinating Council

ERCOT: Electric Reliability Council of Texas

FRCC: Florida Reliability Coordinating Council

HCC: Hawaii Coordinating Council

NPCC: Northeast Power Coordinating Council

MRO: Midwest Reliability Organization

RFC: Reliability First Corporation

SERC: Southeastern Electric Reliability Council

SPP: Southwest Power Pool

WECC: Western Electricity Coordinating Council

Tables 3.3 and 3.4 show plants in the pending application and proposed categories. ERCOT has most of the capacity the pending application stage, while WECC has the most capacity in the proposed stage.

Table 3.3
Plants Pending Application, by Region

Region	Nameplate Capacity (MW)	Share
ERCOT	29,881.27	50.72%
WECC	10,476.10	17.78%
SERC	6,365.19	10.80%
NPCC	5,345.83	9.07%
RFC	4,796.91	8.14%
MRO	1,174.39	1.99%
SPP	828.25	1.41%
HCC	30.00	0.05%
ASCC	19.80	0.03%
Total	58,917.74	

Table 3.4
Proposed Plants, by Region

Region	Nameplate Capacity MW	Share
WECC	64,693.60	30.04%
NPCC	49,896.94	23.17%
SERC	39,779.62	18.47%
RFC	35,694.88	16.57%
MRO	9,148.66	4.25%
ERCOT	8,200.69	3.81%
SPP	6,379.80	2.96%
ASCC	600.00	0.28%
HCC	544.86	0.25%
US Territories	452.00	0.21%
Total	215,391.04	

Tables 3.5 and 3.6 show the fuels of choice for proposed capacity by development stage.

As seen in Table 3.5, for plants most likely to be built — those already under construction or permitted — solar, wind, and natural gas account for 96% of this capacity.

Table 3.5
Permitted Plants and Plants Under Construction, by Fuel Type

Fuel Type	Nameplate Capacity (MW)	Share
Solar	37,877.75	37.86%
Wind	29,306.19	29.29%
Natural Gas	28,846.77	28.83%
Nuclear	2,560.00	2.56%
Hydro	1,019.93	1.02%
Geothermal	213.00	0.21%
Agriculture Byproduct	49.90	0.05%
Wood/Wood Waste Solids	42.00	0.04%
Biomass Gases	37.05	0.04%
Biomass Solids	36.50	0.04%
Waste Heat	28.60	0.03%
Other	14.80	0.01%
Landfill Gas	6.80	0.01%
Distillate Fuel Oil	5.30	0.01%
Waste	2.27	0.00%
Total	100,046.87	

Four regions – RFC, SERC, ERCOT and WECC – together account for approximately 87% of the capacity under construction and permitted. Wind is the leading resource in every region except for RFC and SERC, which have natural gas leading the way, and ERCOT, where solar is the leading resource. 90% of the natural gas capacity permitted or under construction are in SERC and RFC. All 2,560 MW of nuclear power under construction or permitted are in SERC.

As seen in **Table 3.6**, solar is the leading resource for proposed and pending application capacity, with wind making up most of the remaining capacity.

Table 3.6
Plants Pending Application and Proposed, by Fuel Type

Fuel Type	Nameplate Capacity (MW)	Share
Solar	119,161.88	43.44%
Wind	88,818.85	32.38%
Natural Gas	32,382.34	11.81%
Hydro	17,684.49	6.45%
Nuclear	14,562.40	5.31%
Residual Fuel Oil	632.40	0.23%
Other	459.80	0.17%
Distillate Fuel Oil	222.80	0.08%
Geothermal	214.90	0.08%
Coal	77.00	0.03%
Waste Heat	30.89	0.01%
Landfill Gas	20.69	0.01%
Biomass Other	12.41	0.00%
Biomass Liquids	10.00	0.00%
Wood/Wood Waste Solids	8.50	0.00%
Biomass Gases	4.83	0.00%
Biomass Solids	4.60	0.00%
Total	274,308.78	

For the first time since this report began publication in 2007, a renewable resource is the leading resource in every region in this category. Solar leads the way in ERCOT, HCC, RFC, SERC, WECC, and the US territories. Wind is the primary resource in MRO, NPCC, and SPP. Hydro represents 100% of the proposed and pending application capacity in Alaska.

Future Generating Capacity by Ownership Type

Analysis of future generating capacity by ownership is summarized in **Tables 4.1 – 4.4**. Non-utility generators account for most of the capacity in all four categories.

Table 4.1
Plants Under Construction, by Owner Type

Owner Type	Nameplate Capacity (MW)	Share
Non-utility generator	48,832.50	87.62%
Investor-owned utility	5,189.65	9.31%
Public power	991.84	1.78%
Co-op	716.40	1.29%
Total	55,730.39	

Table 4.2
Permitted Plants, by Owner Type

Owner Type	Nameplate Capacity (MW)	Share
Non-utility generator	39,574.94	89.30%
Investor-owned utility	3,422.16	7.72%
Co-op	726.70	1.64%
Federal	360.00	0.81%
Public power	232.68	0.53%
Total	44,316.48	

Table 4.3
Plants Pending Application, by Owner Type

Owner Type	Nameplate Capacity (MW)	Share
Non-utility generator	55,760.48	94.64%
Co-op	1,972.20	3.35%
Investor-owned utility	732.06	1.24%
Public power	453.00	0.77%
Total	58,917.74	

Table 4.4
Proposed Plants, by Owner Type

Owner Type	Nameplate Capacity (MW)	Share
Non-utility generator	194,807.78	90.44%
Investor-owned utility	10,344.80	4.80%
Public power	6,948.20	3.23%
Federal	2,415.67	1.12%
Co-op	874.60	0.41%
Total	215,391.04	

SECTION 5

Future Generating Capacity by Regional Transmission Organization

Tables 5.1 – 5.4 show future generating capacity by regional transmission organization (RTO). A significant plurality of the proposed capacity is slated to be constructed in non-RTO regions. At more advanced stages, approximately 30% of the new capacity is being developed in non-RTO regions, while much of the capacity within RTO regions that is under construction or permitted is in PJM, Midcontinent ISO, and ERCOT. For plants pending application, over 50% is in ERCOT, much of which is solar and wind generation.

Table 5.1
Plants Under Construction, by RTO

RTO	Nameplate Capacity (MW)	Share
Non-RTO	17,784.05	31.91%
ERCOT	10,188.02	18.28%
PJM	10,159.44	18.23%
Midcontinent ISO	9,284.41	16.66%
SPP	4,394.80	7.89%
California ISO	2,442.14	4.38%
New York ISO	905.93	1.63%
New England ISO	571.60	1.03%
Total	55,730.39	

Table 5.2
Permitted Plants, by RTO

RTO	Nameplate Capacity (MW)	Share
PJM	13,608.08	30.71%
Non-RTO	12,288.09	27.73%
ERCOT	9,775.73	22.06%
Midcontinent ISO	4,191.64	9.46%
California ISO	2,417.50	5.46%
SPP	976.10	2.20%
New York ISO	801.74	1.81%
New England ISO	257.61	0.58%
Total	44,316.48	

Table 5.3
Plants Pending Application, by RTO

RTO	Nameplate Capacity (MW)	Share
ERCOT	29,828.52	50.63%
Non-RTO	9,292.53	15.77%
PJM	6,292.71	10.68%
California ISO	3,837.50	6.51%
New York ISO	3,582.10	6.08%
Midcontinent ISO	3,295.70	5.59%
New England ISO	1,761.23	2.99%
SPP	1,027.45	1.74%
Total	58,917.74	

Table 5.4
Proposed Plants, by RTO

RTO	Nameplate Capacity (MW)	Share
Non-RTO	90,562.44	42.05%
New York ISO	35,991.63	16.71%
PJM	30,019.89	13.94%
Midcontinent ISO	23,684.41	11.00%
New England ISO	10,663.08	4.95%
SPP	8,574.69	3.98%
ERCOT	8,020.69	3.72%
California ISO	7,874.23	3.66%
Total	215,391.04	

Generating Capacity Retirements and Cancellations

Tables 6.1 and 6.2 show generation capacity retirements by fuel type. From 2014-2020, 133,520 MW of capacity was retired. Over half of this capacity was coal-fired, with most of the remainder being natural gas.

Table 6.1
Retired Plants by Fuel Type, 2014-2020

Fuel Type	Capacity (MW)	Share
Coal	76,020.90	56.9%
Natural Gas	38,849.73	29.1%
Nuclear	5,475.35	4.1%
Residual Fuel Oil	4,684.90	3.5%
Distillate Fuel Oil	3,648.38	2.7%
Wind	832.20	0.6%
Hydro	759.85	0.6%
Wood/Wood Waste Solids	562.75	0.4%
Petroleum Coke	488.50	0.4%
Landfill Gas	428.98	0.3%
Kerosene	352.60	0.3%
Wood Waste Liquids	333.20	0.2%
Waste	229.70	0.2%
Geothermal	221.30	0.2%
Agriculture Byproduct	130.20	0.1%
Biomass Solids	96.70	0.1%
Solar	87.52	0.1%
Blast Furnace Gas	82.00	0.1%
Waste Heat	77.30	0.1%
Other Gas	62.00	0.0%
Biomass Gases	37.90	0.0%
Other	28.30	0.0%
Purchased Steam	25.00	0.0%
Jet Fuel	5.10	0.0%
Total	133,520.35	

Over 14,000 MW of capacity was retired in 2020, nearly two-thirds of which were coal-fired.

Table 6.2
Retired Plants by Fuel Type, 2020

Fuel Type	Capacity (MW)	Share
Coal	9,119.00	64.5%
Nuclear	2,031.42	14.4%
Natural Gas	1,874.30	13.3%
Residual Fuel Oil	882.00	6.2%
Landfill Gas	93.60	0.7%
Wind	74.90	0.5%
Distillate Fuel Oil	65.70	0.5%
Biomass Solids	2.00	0.0%
Hydro	1.50	0.0%
Biomass Gases	0.70	0.0%
Total	14,145.13	

Nearly 66,000 MW of current operating capacity is scheduled to retire by 2025, over half of which is coal-fired. Nearly 9,000 MW of nuclear capacity is also slated to be retired.

Table 6.3 reflects planned retirements that have been publicly announced.

Table 6.3
Planned Retirements to 2025, by Fuel Type

Fuel Type	Capacity (MW)	Share
Coal	34,517.30	52.33%
Natural Gas	16,640.80	25.23%
Nuclear	8,853.55	13.42%
Residual Fuel Oil	4,201.90	6.37%
Distillate Fuel Oil	887.50	1.35%
Wood/Wood Waste Solids	292.90	0.44%
Jet Fuel	223.50	0.34%
Wood Waste Liquids	101.50	0.15%
Petroleum Coke	60.00	0.09%
Wind	54.09	0.08%
Hydro	52.43	0.08%
Geothermal	35.00	0.05%
Kerosene	18.60	0.03%
Landfill Gas	12.80	0.02%
Other	1.50	0.00%
Biomass Gases	1.30	0.00%
Total	65,954.67	

Nearly 44,000 MW of planned capacity additions were canceled in 2020.

Table 6.4
Plant Cancellations, 2020

Fuel Type	Capacity (MW)	Share
Natural Gas	16,574.65	37.93%
Wind	12,532.65	28.68%
Solar	9,482.56	21.70%
Hydro	2,475.97	5.67%
Nuclear	2,234.00	5.11%
Biomass Other	150.00	0.34%
Wood/Wood Waste Solids	74.90	0.17%
Agriculture Byproduct	74.90	0.17%
Geothermal	58.60	0.13%
Biomass Solids	16.80	0.04%
Biomass Gases	8.30	0.02%
Distillate Fuel Oil	8.00	0.02%
Landfill Gas	6.30	0.01%
Total	43,697.64	

Since 2014, more than 350,000 MW of planned capacity additions were ultimately canceled, well above the capacity that was added. Wind represents nearly 30% of this canceled capacity.

Table 6.5
Plant Cancellations, 2014-2020

Fuel Type	Capacity (MW)	Share
Wind	103,880.78	29.6%
Natural Gas	90,179.06	25.7%
Solar	78,606.77	22.4%
Hydro	29,398.70	8.4%
Nuclear	23,490.00	6.7%
Coal	12,277.50	3.5%
Other	3,574.27	1.0%
Geothermal	3,120.00	0.9%
Wood/Wood Waste Solids	1,617.23	0.5%
Waste	1,297.70	0.4%
Petroleum Coke	1,196.00	0.3%
Blast Furnace Gas	500.00	0.1%
Landfill Gas	317.30	0.1%
Biomass Solids	299.45	0.1%
Biomass Other	183.13	0.1%
Biomass Gases	158.72	0.0%
Agriculture Byproduct	93.70	0.0%
Other Gas	77.00	0.0%
Waste Heat	67.64	0.0%
Jet Fuel	60.00	0.0%
Distillate Fuel Oil	59.53	0.0%
Biomass Liquids	9.00	0.0%
Total	350,463.48	

Figure 6.1 shows additions, cancellations, and retirements from 2014 to 2020. While additions exceeded retirements, cancellations far exceeded additions.

Figure 6.1
Additions, Cancellations, and Retirements, 2014 - 2020

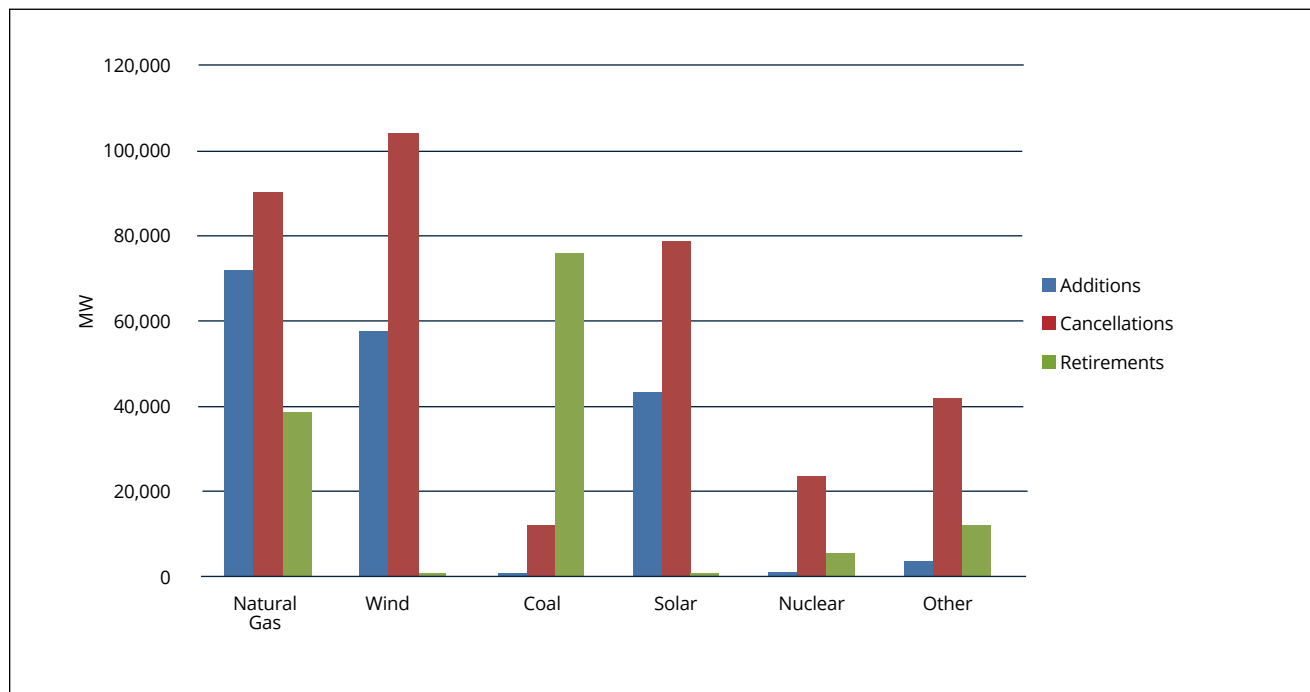
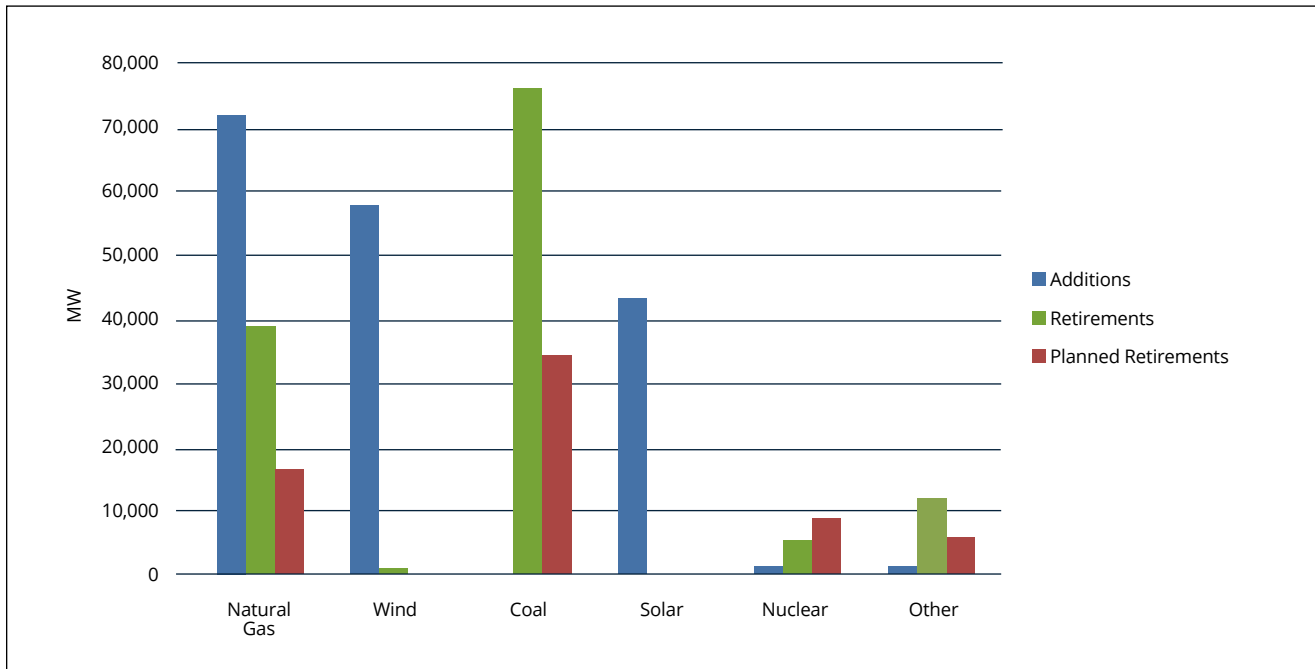
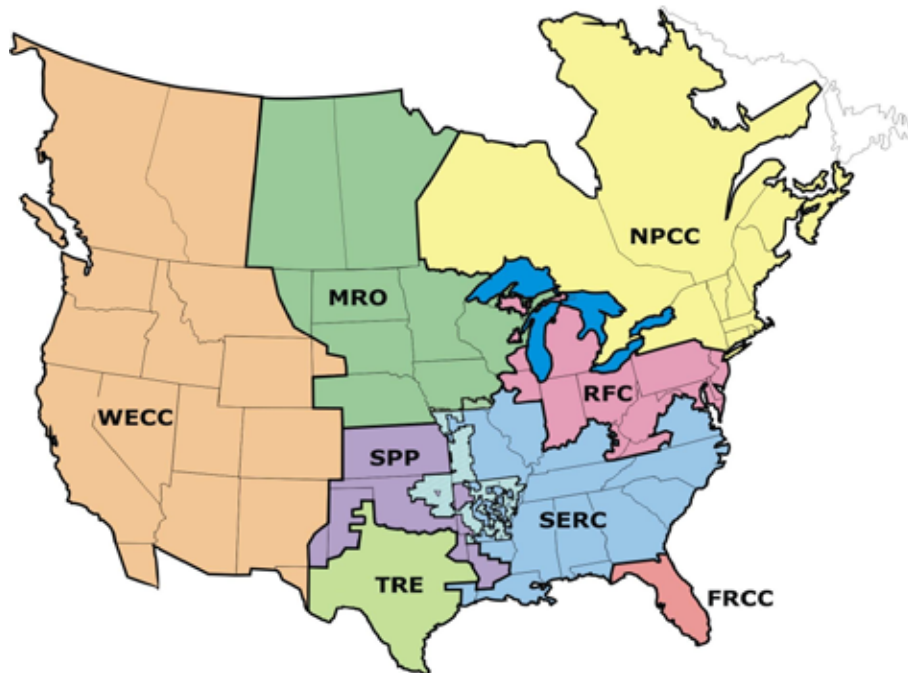


Figure 6.2 shows additions and retirements from 2014-2020 as well as planned retirements to 2024.

Figure 6.2
Additions and Retirements, 2014 - 2020, plus Planned Retirements to 2025



Appendix 1: NERC Regions



This report uses regions defined by the North American Electric Reliability Council:

ASCC - Alaska Systems Coordinating Council (not shown on map)

FRCC - Florida Reliability Coordinating Council

HCC - Hawaii Coordinating Council (not shown on map)

NPCC - Northeast Power Coordinating Council

MRO - Midwest Reliability Organization

RFC - Reliability First Corporation

SERC - Southeastern Electric Reliability Council

SPP - Southwest Power Pool

TRE - Texas Reliability Entity*

WECC - Western Electricity Coordinating Council

* The Independent System Operator that operates the electric grid for nearly all of the state of Texas is the Electric Reliability Council of Texas (ERCOT), and is the name used for this region in the report. The Texas Reliability Entity (TRE) monitors and enforces compliance with reliability standards for NERC.



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