2025 UPDATE AMERICA'S ELECTRICITY GENERATION CAPACITY



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BIORUEI STATION

AMERICA'S ELECTRICITY GENERATION CAPACITY 2025 UPDATE

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APRIL 2025



The American Public Power Association is the voice of not-for-profit, communityowned utilities that power approximately 2,000 towns and cities nationwide. We represent public power before the federal government to protect the interests of the more than 55 million people that public power utilities serve across the United States and its territories. We advise on electricity policy, grid technology and operations, and workforce development in support of safe, modern, and resilient utilities.

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EXECUTIVE SUMMARY

The American Public Power Association's annual report on current and imminent electricity generation capacity in the United States breaks down the nearly 1.3 terawatts of utility-scale capacity by fuel, region, and ownership.



Current Capacity

The largest fuel source is natural gas, accounting for just under 43% of all generation capacity. Coal, with a share of 15%, represents the second largest source of generation capacity. Wind, nuclear, hydro, and solar together account for more than one-third of capacity.

Under Development

468,582 MW of new generation capacity is under development in the United States, which is comparable to the total capacity under development for the last two years. This includes 143,247 MW under construction or permitted and 325,335 MW proposed or pending application. Around 10,000 MW have moved from the pending or proposed to construction or permitted stage in the past year.

A majority of all new generation capacity under development is for solar energy (55%), followed by wind (26%) and natural gas (11%). However, over two-thirds of the wind capacity is in the proposed stage, which is the earliest and most uncertain stage of development and includes units that are least likely to be built. Trends in the development stages of the share of fuel type also show that wind capacity is far less likely than solar to **Generation capacity** refers to the maximum potential power output of an electricity generation source, i.e., 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 facility and is measured in megawatt-hours (MWh). This report covers generation capacity only.

move to the application phase and beyond. There is notably less wind in the pipeline and more natural gas than in years past. In 2024, there are 22% fewer wind projects under development and 58% more natural gas projects by MW.

Despite accounting for 9% of all current capacity, public power projects account for less than 2% of all projects in the development pipeline. A large majority (88%) of capacity in development is owned by nonutility generators.





Surge of Solar and Energy Storage

For the fourth year in a row, solar was the leading source of new utility-scale capacity. In 2024, over 30,000 MW of solar capacity came online, which is a 30% increase in operating solar capacity. An additional 34,000 MW are under preparation, testing, or construction and projected to come online in 2025.

Nearly 11,000 MW of energy storage were added in 2024 to supplement generation capacity, increasing the total MW of energy storage 62% within the last year and 181% in the last two years. 15,306 MW of additional energy storage under preparation, testing, or construction are projected to come online in 2025.

Retirements and Cancellations

Nearly 38,000 MW of planned generation capacity developments were canceled in 2024. Solar accounted for a plurality (43%) of the cancellations, and wind and natural gas projects accounted for most of the remaining cancellations.

Generation capacity additions (37,003 MW) outpaced the total generation capacity retired (7,192 MW) in 2024. Retirements in 2024 were nearly half the 15,722 MW retired in 2023. A plurality of the generation capacity retired in 2024 was from coal-fired facilities (49%), with over 3,500 MW retired. 83,226 MW of coal has been retired since 2017. More than 56,000 MW in coal capacity is planned to be retired through 2029, which represents 28% of the current generation capacity of all coal-fired facilities.



Data analyzed for this report was taken from the Hitachi Energy Velocity Suite database, accessed January and February 2025. All figures in this report represent utilityscale capacity only and do not include distributed and other small-scale generation capacity. This report includes generation capacity data from 50 U.S. states as well as American Samoa, Puerto Rico, Guam, Northern Mariana Islands, and the U.S. Virgin Islands.

Energy storage is included in this report due to its increasing deployment and role in integrating renewable energy resources on the grid. While energy storage is not a generating capacity fuel type, it is a means for capturing and reserving energy for later use and can help address challenges posed by intermittent and distributed energy resources. In this report, pumped hydro storage is classified as hydropower capacity. Megawatts of energy storage are not included as a part of the generation capacity totals and are instead reported as standalone additions highlighted in blue.

1. CURRENT GENERATION CAPACITY



Current nameplate capacity includes capacity labeled as operating, including units that have been restarted as well as capacity that is on standby or mothballed.

Table 1.1 shows the sources from which electricity can be generated in the U.S. Natural gas facilities make up a plurality of America's current generation capacity, followed by coal, wind, and solar resources. In addition to the 1.3 TW nameplate capacity, there are 28,620 MW of supplemental energy storage in the U.S.

CATEGORIES OF OPERATING CAPACITY

OPERATING: Generator available to operate

RESTART: Generator brought back online after being out of service, retired, or mothballed for more than three months

STANDBY: Generator available for service but not normally used, or on short term scheduled or forced outage for less than three months

MOTHBALLED: Generator taken out of service but not retired, unit is able to come back online

Table 1.1Electric Generation Capacity by Fuel Type, 2024

Freed Trans	B.63.67	Chaus
Fuel Type		Snare
	200,091.87	42.72%
Coal	200,/61.5/	15.14%
wind	153,877.99	11.60%
Solar	134,479.66	10.14%
Nuclear	103,146.96	7.78%
Hydro	100,992.56	7.61%
Distillate Fuel Oil	22,823.83	1./2%
Residual Fuel Oil	15,619.20	1.18%
Wood/Wood Waste Solids	4,812.16	0.36%
Wood Waste Liquids	4,317.75	0.33%
Geothermal	4,171.69	0.31%
Petroleum Coke	2,412.70	0.18%
Waste	2,370.34	0.18%
Landfill Gas	2,026.75	0.15%
Kerosene	1,865.80	0.14%
Other Gas	1,426.95	0.11%
Waste Heat	1,300.13	0.10%
Blast Furnace Gas	875.70	0.07%
Biomass Gases	516.87	0.04%
Purchased steam	383.60	0.03%
Jet Fuel	369.24	0.03%
Other	312.84	0.02%
Agriculture Byproduct	283.90	0.02%
Biomass Liquids	193.29	0.01%
Biomass Solids	143.66	0.01%
Waste Oil and Other Oil	135.11	0.01%
Liquified Natural Gas	50.63	0.00%
Biomass Other	21.40	0.00%
Liquified Propane Gas	21.00	0.00%
Refuse	15.40	0.00%
Propane	3.43	0.00%
Total	1,326,425.96	
Energy Storage	28,619.96	

Table 1.2 shows how America's current generation capacity is distributed throughout different regions of the U.S. These regions include current defined regions of the North American Electric Reliability Corporation, as well as U.S. territories, in accordance with how the Energy Information Administration collects and reports this information.

Table 1.2

current Electricity Generation Capacity by Region, 2024		
Region	MW	Share
SERC	385,213.44	29.04%

Total	1,326,425.96	
U.S. Territories	8,146.32	0.61%
NPCC	86,092.91	6.49%
Texas RE	152,252.60	11.48%
MRO	173,591.18	13.09%
RF	250,631.80	18.90%
WECC	270,497.71	20.39%
	,	

REGIONS

(see map in Appendix 1)

MRO: Midwest Reliability Organization NPCC: Northeast Power Coordinating Council RF: ReliabilityFirst SERC: SERC Reliability Corporation Texas RE: Texas Reliability Entity WECC: Western Electricity Coordinating Council

U.S. territories are not a part of NERC, but are included in the total generating capacity, including Puerto Rico, American Samoa, Guam, Northern Mariana Islands, and the U.S. Virgin Islands.

Table 1.3 shows the utility-scale generation capacity additions from 2017-2024. More than 98% of the 265,101 MW in additions were from natural gas, wind, and solar facilities.

Table 1.3

2024

Generation Capacity Additions by Fuel Type, 2017-2024

	-	
Fuel Type	MW	Share
Solar	108,867.32	41.07%
Natural Gas	77,503.40	29.24%
Wind	73,507.07	27.73%
Nuclear	2,214.00	0.84%
Hydro	688.76	0.26%
Distillate Fuel Oil	658.15	0.25%
Geothermal	624.50	0.24%
Wood/Wood Waste Solids	406.50	0.15%
Biomass Gases	103.32	0.04%
Waste Heat	101.60	0.04%
Wood Waste Liquids	75.00	0.03%
Blast Furnace Gas	70.00	0.03%
Landfill Gas	67.60	0.03%
Liquified Natural Gas	50.63	0.02%
Biomass Liquids	50.00	0.02%
Other	42.90	0.02%
Liquified Propane Gas	21.00	0.01%
Coal	17.00	0.01%
Biomass Other	10.74	0.00%
Waste	8.19	0.00%
Biomass Solids	6.40	0.00%
Waste Oil and Other Oil	3.00	0.00%
Propane	1.80	0.00%
Jet Fuel	1.30	0.00%
Other Gas	1.20	0.00%
Total	265,101.37	
Energy Storage	27,981.24	





Note: This table uses the most up-to-date data from Hitachi Energy Velocity Suite database and therefore capacity in MW may change slightly from year to year when the database is updated.

"Other" capacity resources in this graph include nuclear, hydro, distillate fuel oil, geothermal, wood/wood waste solids, biomass gases, waste heat, wood waste liquids, blast furnace gas, landfill gas, liquified natural gas, biomass liquids, other, liquified propane gas, coal, biomass other, waste, biomass solids, waste oil and other oil, propane, jet fuel, other gas.

Figure 1.1 shows the capacity additions by fuel type from 2017-2024.

Between 2017 and 2018, natural gas was the leading resource for generation capacity additions. In 2020, more solar and wind capacity came online than natural gas. Since 2021, more solar capacity has come online than any other energy source, particularly from 2023 to 2024. New natural gas capacity significantly decreased in the past year, while the amount of wind brought online has gradually decreased. The increase in "other" fuel types is primarily due to an increase in nuclear capacity since 2023.

Table 1.4 shows the fuel types of the 37,003 MW of generation capacity that began operating in 2024, including 10,953 MW of additional energy storage. Solar continues to make up an ever-increasing share of new generation capacity and in 2024 made up over 80% of generation capacity additions.

Table 1.4Generation Capacity Additions by Fuel Type, 2024

Fuel Type	MW	Share
Solar	30,290.43	81.86%
Wind	3,139.62	8.48%
Natural Gas	2,353.38	6.36%
Nuclear	1,100.00	2.97%
Wood/Wood Waste Solids	40.00	0.11%
Geothermal	29.20	0.08%
Other	27.50	0.07%
Distillate Fuel Oil	10.90	0.03%
Biomass Other	5.00	0.01%
Biomass Gases	3.20	0.01%
Landfill Gas	3.00	0.01%
Hydro	1.00	0.00%
Total	37,003.23	
Energy Storage	10,953.35	

Table 1.5 shows the 46,499 MW of generation capacity under preparation, testing, and construction that are scheduled to come online in 2025. Additionally, 15,306 MW of energy storage are scheduled to come online in 2025. The largest share of capacity slated to come online in 2025 is from solar facilities (74%). Wind capacity makes up the next largest portion of projected new capacity in 2025 at 18%, and natural gas makes up 7%.

Figure 1.2 shows the age of generation capacity facilities by fuel type. Most hydro and coal facilities are at least 40 years old, having come online by 1980. Almost all domestic nuclear capacity became operational between 1969-1990. While natural gas capacity dates to the 1950s, the bulk of current natural gas capacity is less than 25 years old. Most solar capacity came online since 2021.

Projected Generation Capacity Additions, 2025		
Fuel Type	MW	Share
Solar	34,125.35	73.39%
Wind	8,208.20	17.65%
Natural Gas	3,327.00	7.15%
Other Gas	700.00	1.51%
Biomass Solids	36.00	0.08%
Hydro	35.22	0.08%
Waste Heat	31.20	0.07%
Distillate Fuel Oil	21.60	0.05%
Biomass Gases	6.60	0.01%
Landfill Gas	3.00	0.01%
Wood/Wood Waste Solids	2.95	0.01%
Biomass Other	2.00	0.00%
Total	46,499.12	
Energy Storage	15,305.73	



Table 1 5

Figure 1.2 Age of Electric Generation Facilities by Type

2. FUTURE GENERATION CAPACITY BY DEVELOPMENT STAGE

Tables 2.1–2.4 show the fuel makeup of generation capacity under construction, permitted, with an application pending, or proposed. Solar comprises the largest share of all four development categories. If listed as capacity, the total MW of energy storage in development would be the second largest share in each category except for proposed.

Table 2.1 shows the sources for the 65,208 MW of generation capacity under site preparation, testing, and construction — a similar amount as in 2023. Wind and solar account for more than 80% of the capacity under construction, with natural gas making up nearly all the rest. Natural gas under construction remains at nearly 7,000 MW in the pipeline, following the trend since 2022 of natural gas making up a decreasing share of fuel under construction.

Table 2.1 Plants Under Construction by Fuel Type, 2024

Fuel Type	MW	Share
Solar	39,833.71	61.09%
Wind	16,562.82	25.40%
Natural Gas	6,945.90	10.65%
Other Gas	700.00	1.07%
Geothermal	454.80	0.70%
Nuclear	345.00	0.53%
Distillate Fuel Oil	227.40	0.35%
Biomass Solids	36.00	0.06%
Hydro	35.22	0.05%
Waste Heat	31.20	0.05%
Biomass Gases	27.60	0.04%
Landfill Gas	3.00	0.00%
Wood/Wood Waste Solids	2.95	0.00%
Biomass Other	2.00	0.00%
Total	65,207.60	
Energy Storage	16,993.36	

Table 2.2 shows the fuel makeup for plants that have received permits but have not yet started construction. Solar is the leading resource for permitted plants, accounting for more than 70% of the 78,039 MW of permitted generation capacity. Wind and natural gas account for another quarter of capacity in this category.

Table 2.2Permitted Plants by Fuel Type, 2024

Fuel Type	MW	Share
Solar	54,766.95	70.18%
Wind	10,715.77	13.73%
Natural Gas	9,061.10	11.61%
Hydro	2,862.55	3.67%
Nuclear	360.00	0.46%
Geothermal	180.00	0.23%
Agriculture Byproduct	50.00	0.06%
Distillate Fuel Oil	23.00	0.03%
Waste	20.00	0.03%
Total	78,039.37	
Energy Storage	31,460.70	

Table 2.3 shows the fuel mix for the 81,578 MW of generation capacity awaiting approval of applications. Solar makes up a majority of the capacity in this category, with wind and natural gas accounting for another third.

Table 2.3Plants Pending Application by Fuel Type, 2024

Fuel Type	MW	Share	
Solar	50,126.38	61.45%	
Natural Gas	14,521.14	17.80%	
Wind	12,195.83	14.95%	
Hydro	4,670.28	5.72%	
Geothermal	40.00	0.05%	
Distillate Fuel Oil	24.50	0.03%	
Total	81,578.13		
Energy Storage	39,630.64		

Figure 2.1 Share of Fuel Type by Stage of Development, 2024



Table 2.4 shows the resource mix for the 243,757 MW of generation capacity in the proposal stage. This is the earliest and most uncertain stage of development and includes units that are least likely to be built. Nearly 113,000 MW (46%) of the proposed capacity is solar, followed by nearly 81,000 MW of wind, which has traditionally been the leading resource at the proposed stage of development. There are approximately 35,000 MW fewer wind projects proposed in 2024 than there had been in 2023.

Table 2.4Proposed Plants by Fuel Type, 2024

Fuel Type	MW	Share
Solar	112,992.74	46.35%
Wind	80,739.42	33.12%
Natural Gas	22,364.08	9.17%
Hydro	13,355.93	5.48%
Nuclear	12,422.40	5.10%
Residual Fuel Oil	632.40	0.26%
Blast Furnace Gas	576.30	0.24%
Other Gas	300.00	0.12%
Geothermal	109.32	0.04%
Biomass Liquids	103.40	0.04%
Waste Heat	85.44	0.04%
Landfill Gas	53.60	0.02%
Biomass Gases	12.00	0.00%
Other	5.92	0.00%
Distillate Fuel Oil	3.20	0.00%
Biomass Other	0.93	0.00%
Total	243,757.08	
Energy Storage	77,103.16	

Figure 2.1 tracks the major fuel sources in each stage of development. This chart shows that past the proposal process, solar dominates the share of new capacity. The share of wind capacity falls during the proposal to permitting process.

Table 2.5 shows the total energy storage capacity (for projects 1 MW or more) by development stage. Energy storage is getting added alongside — and standalone from — these capacity projects. These totals do not include pumped hydro systems. There was 49,000 MW more storage in the development stage in 2024 than in 2023.

Table 2.5Energy Storage by Development Stage, 2024

Development Stage	MW
Under Construction	16,993.36
Permitted Plants	31,460.70
Pending Application	39,630.64
Proposed	77,103.16
Total	165,187.86

3. FUTURE GENERATION CAPACITY BY REGION

Tables 3.1–3.4 show new plants that are under construction or planned for construction in each region (See Appendix 1 for definition of regions and included states).

Table 3.1 shows that WECC, Texas RE, and SERC account for a majority (69%) of the capacity under construction, while another 17% are in RFC.

Table 3.1Plants Under Construction by Region, 2024

Region	MW	Share	
WECC	18,811.42	28.85%	
Texas RE	13,368.52	20.50%	
SERC	12,993.85	19.93%	
RF	11,270.89	17.28%	
MRO	4,451.21	6.83%	
NPCC	4,089.82	6.27%	
U.S. Territories	221.90	0.34%	
Total	65,207.60		

Table 3.2 shows Texas RE has the most generation capacity permitted, followed by SERC, WECC, and RF. Over 10,000 MW more are in the pipeline than in 2023, with significant increases in Texas RE and SERC.

Figure 3.1 Plants Under Construction by Region, 2024



Table 3.2					
Permitted	Plants	by	Region,	2024	

Region	MW	Share	
Texas RE	32,343.22	41.44%	
SERC	13,569.87	17.39%	
WECC	11,436.33	14.65%	
RF	9,971.39	12.78%	
MRO	6,816.57	8.73%	
NPCC	3,901.99	5.00%	
Total	78,039.37		

Figure 3.2 Permitted Plant





Tables 3.3 and 3.4 show plants in the pending application and proposed categories. Texas RE has a plurality of the generation capacity in the pending application stage (49%), while WECC has the largest share of capacity in the proposed stage (27%).

Table 3.3

Plants Pending Application by Region, 2024

Region	MW	Share
Texas RE	40,376.56	49.49%
WECC	17,573.30	21.54%
MRO	8,547.78	10.48%
RF	6,636.53	8.14%
SERC	6,443.26	7.90%
NPCC	2,000.70	2.45%
Total	81,578.13	

Figure 3.3 Plants Pending Application by Region, 2024



Table 3.4 Proposed Plants by Region, 2024

Region	MW	Share	
WECC	65,788.09	26.99%	
NPCC	61,364.33	25.17%	
SERC	56,264.13	23.08%	
RF	44,080.17	18.08%	
MRO	10,201.04	4.18%	
Texas RE	5,857.12	2.40%	
U.S. Territories	202.20	0.08%	
Total	243,757.08		

Figure 3.4

Proposed Plants by Region, 2024



Table 3.5New Generating Capacity Compared to Current Generation by Region, 2024

Sorted by under construction

	MW	Share	MW	Share	MW	Share	MW	Share	TWh	Share
Region	Under Co	onstruction	Permitt	ed Plants	Pending A	pplication	Prop	osed	2024 U.S. G	ieneration
WECC	18,811	29%	11,436	15%	17,573	22%	65,788	27%	587	16%
Texas RE	13,369	21%	32,343	41%	40,377	49%	5,857	2%	417	12%
SERC	12,994	20%	13,570	17%	6,443	8%	56,264	23%	1,185	33%
RF	11,271	17%	9,971	13%	6,637	8%	44,080	18%	805	22%
MRO	4,451	7%	6,817	9%	8,548	10%	10,201	4%	387	11%
NPCC	4,090	6%	3,902	5%	2,001	2%	61,364	25%	196	5%
U.S. Territories	222	0%	-	-	-	-	202	0%	15	0%

2023 generation source: Hitachi Velocity Suite Database, accessed February 2025. Only includes states and Puerto Rico.

Table 3.5 shows the share of future generation capacity by region compared with actual generation in 2024. SERC, which generates a third of electricity in the U.S., has a fifth of the share of plants under construction. WECC, which generates 16% of electricity in the U.S., has the largest share of plants under construction. Texas RE, which generates 12% of electricity in the U.S., has the largest share of plants pending application.

Tables 3.6 and 3.7 show the fuels of choice for proposed capacity by development stage.

As shown in Table 3.6, for plants most likely to be built — those already under construction or permitted solar, wind, and natural gas account for over 96% of this capacity. Solar makes up two-thirds of this capacity. Over 11,000 MW more of capacity was permitted or under construction in 2024 compared to 2023, with significant increases in solar and natural gas permitted or under construction.



Table 3.6 Permitted Plants and Plants Under Construction by Fuel Type, 2024

Fuel Type	MW	Share
Solar	94,600.65	66.04%
Wind	27,278.59	19.04%
Natural Gas	16,007.00	11.17%
Hydro	2,897.77	2.02%
Nuclear	705.00	0.49%
Other Gas	700.00	0.49%
Geothermal	634.80	0.44%
Distillate Fuel Oil	250.40	0.17%
Agriculture Byproduct	50.00	0.03%
Biomass Solids	36.00	0.03%
Waste Heat	31.20	0.02%
Biomass Gases	27.60	0.02%
Waste	20.00	0.01%
Landfill Gas	3.00	0.00%
Wood/Wood Waste Solids	2.95	0.00%
Biomass Other	2.00	0.00%
Total	143,246.97	
Energy Storage	48,454.06	

Table 3.7Plants Pending Application and Proposed by Fuel Type,2024

Fuel Type	MW	Share
Solar	163,119.12	50.14%
Wind	92,935.25	28.57%
Natural Gas	36,885.22	11.34%
Hydro	18,026.21	5.54%
Nuclear	12,422.40	3.82%
Residual Fuel Oil	632.40	0.19%
Blast Furnace Gas	576.30	0.18%
Other Gas	300.00	0.09%
Geothermal	149.32	0.05%
Biomass Liquids	103.40	0.03%
Waste Heat	85.44	0.03%
Landfill Gas	53.60	0.02%
Distillate Fuel Oil	27.70	0.01%
Biomass Gases	12.00	0.00%
Other	5.92	0.00%
Biomass Other	0.93	0.00%
Total	325,335.20	
Energy Storage	116,733.80	

Four regions — Texas RE, WECC, SERC, and RF — together account for approximately 86% of the capacity under construction and permitted. Solar is the leading resource in all four regions, followed by wind in WECC and natural gas in Texas RE, SERC, and RF. A plurality of all new wind capacity (38%) and a majority of new hydropower (91%) under construction or permitted is in WECC.

As seen in Table 3.7, solar is the leading resource for proposed and pending application generation capacity, with wind making up most of the remaining capacity. There is a 10-point decrease in wind's share as a fuel type for pending and proposed plants compared to in 2023.

Solar is the leading resource proposed or pending application in Texas RE, RF, SERC, WECC, and in Puerto Rico. Wind is the primary resource in MRO and NPCC. A plurality (47%) of the wind capacity that is proposed and pending is in NPCC.

4. FUTURE GENERATION CAPACITY BY OWNERSHIP TYPE

Tables 4.1–4.4 summarize the future generation capacity based on ownership. Non-utility generators account for most of the capacity in all four categories. For the tables below, federal includes the Tennessee Valley Authority, U.S. Army, and the Bureau of Land Management.

Table 4.1 Plants Under Construction by Owner Type 2024

riands offact construction by officer type, 2021				
Owner Type	MW	Share		
Non-utility generators	57,036.75	87.47%		
Investor-owned utilities	5,521.15	8.47%		
Public power	1,276.70	1.96%		
Federal	759.50	1.16%		
Cooperatives	613.50	0.00%		
Total	65,207.60			

Table 4.2Permitted Plants by Owner Type, 2024

Owner Type	MW	Share
Non-utility generators	71,104.92	91.11%
Investor-owned utilities	5,749.30	7.37%
Federal	960.00	1.23%
Public power	142.35	0.18%
Cooperatives	82.80	0.11%
Total	78,039.37	

Non-utility generators own the majority of plants that are permitted and under construction. Most of the capacity from non-utility generators that is permitted or under construction is for solar (71%). Natural gas is the leading resource that investor-owned, cooperative, and public power utilities have permitted or under construction.

Table 4.3Plants Pending Application by Owner Type, 2024

Owner Type	MW	Share
Non-utility generators	74,492.03	91.31%
Investor-owned utilities	5,370.60	6.58%
Cooperatives	1,113.00	1.36%
Public power	602.50	0.74%
Total	81,578.13	

Table 4.4Proposed Plants by Owner Type, 2024

Owner Type	MW	Share
Non-utility generators	210,268.15	86.26%
Investor-owned utilities	19,630.24	8.05%
Public power	6,233.75	2.56%
Federal	5,654.98	2.32%
Cooperatives	1,969.96	0.81%
Total	243,757.08	

Additionally, non-utility generators have the overwhelming majority of capacity that is proposed or pending application. Over 87% of the proposed and pending capacity from non-utility generators is for wind and solar. Prior to 2022, non-profit utilities (including public power and cooperatives) were not eligible for energy tax credits for wind and solar facilities. This limitation influenced public power ownership of renewable energy resources. Public power utilities procure most of their wind and solar energy supply through power purchase agreements (usually with nonutility generators) rather than direct ownership. Natural gas is the top resource that is proposed or pending for investor-owned, federal, public power, and cooperative utilities.

5. FUTURE GENERATION CAPACITY BY REGIONAL TRANSMISSION ORGANIZATION

Tables 5.1–5.4 show future generation capacity by regional transmission organization (RTO). A significant plurality of the capacity proposed and under construction is slated to be constructed in non-RTO regions. The Electric Reliability Council of Texas (ERCOT) is the RTO with the most capacity in the application pending and permitted stages.

Table 5.1Plants Under Construction by RTO, 2024

Region	MW	Share
Non-RTO	22,724.20	34.85%
Midcontinent ISO	14,150.22	21.70%
ERCOT ISO	13,533.94	20.76%
PJM ISO	5,593.84	8.58%
California ISO	2,641.21	4.05%
SPP	2,494.20	3.83%
New England ISO	2,203.68	3.38%
New York ISO	1,866.30	2.86%
Total	65,207.60	

Table 5.2Permitted Plants by RTO, 2024

Region	MW	Share
ERCOT ISO	32,768.96	41.99%
Non-RTO	14,180.08	18.17%
PJM ISO	11,164.99	14.31%
Midcontinent ISO	10,445.82	13.39%
California ISO	3,437.20	4.40%
New York ISO	2,811.99	3.60%
SPP	2,145.16	2.75%
New England ISO	1,085.18	1.39%
Total	78,039.37	

Table 5.3

Plants Pending Application by RTO, 2024

Region	MW	Share
ERCOT ISO	40,189.82	49.27%
Non-RTO	19,142.27	23.46%
Midcontinent ISO	7,712.60	9.45%
SPP	5,482.02	6.72%
PJM ISO	4,773.06	5.85%
California ISO	2,331.66	2.86%
New York ISO	1,737.50	2.13%
New England ISO	209.20	0.26%
Total	81,578.13	

Table 5.4Proposed Plants by RTO, 2024

			-
Region	MW	Share	
Non-RTO	79,993.41	32.82%	
PJM ISO	47,373.60	19.43%	
New York ISO	46,969.14	19.27%	
Midcontinent ISO	28,874.01	11.85%	
California ISO	18,078.61	7.42%	
New England ISO	11,254.74	4.62%	
ERCOT ISO	5,677.12	2.33%	
SPP	5,536.45	2.27%	
Total	243,757.08		

6. GENERATION CAPACITY RETIREMENTS AND CANCELLATIONS

Tables 6.1 and 6.2 show generation capacity retirements by fuel type. From 2017-2024, 135,023 MW of generation capacity was retired. Following trends over the past few years, over half of this capacity was from coal-fired plants, and nearly a quarter was in natural gas.

Table 6.1Retired Plants by Fuel Type, 2017-2024

Fuel Type	MW	Share
Coal	83,225.60	61.6%
Natural Gas	32,154.70	23.8%
Nuclear	6,119.68	4.5%
Residual Fuel Oil	4,688.30	3.5%
Distillate Fuel Oil	2,774.23	2.1%
Wind	1,430.18	1.1%
Wood/Wood Waste Solids	716.95	0.5%
Landfill Gas	691.50	0.5%
Hydro	569.40	0.4%
Wood Waste Liquids	442.50	0.3%
Solar	442.20	0.3%
Waste	424.20	0.3%
Geothermal	307.00	0.2%
Kerosene	273.30	0.2%
Waste Heat	146.00	0.1%
Biomass Solids	114.00	0.1%
Jet Fuel	100.20	0.1%
Purchased Steam	86.40	0.1%
Agriculture Byproduct	84.10	0.1%
Other Gas	74.25	0.1%
Petroleum Coke	60.00	0.0%
Biomass Gases	44.78	0.0%
Blast Furnace Gas	42.50	0.0%
Waste Oil and Other Oil	10.20	0.0%
Other	1.00	0.0%
Total	135,023.16	

The total capacity retired in 2024 was about half of the total capacity retired in 2023, when generators retired over 15,700 MW, including more than 10,000 MW of coal.

Table 6.2 Retired Plants by Fuel Type, 2024

Fuel Type	MW	Share	
Coal	3,542.00	49.2%	
Natural Gas	2,936.50	40.8%	
Distillate Fuel Oil	195.30	2.7%	
Hydro	142.80	2.0%	
Wind	139.40	1.9%	
Waste	95.60	1.3%	
Solar	92.00	1.3%	
Kerosene	21.60	0.3%	
Landfill Gas	19.80	0.3%	
Waste Heat	7.40	0.1%	
Total	7,192.40		

Table 6.3 reflects planned retirements that have been announced over the next five years. Over 80,000 MW of current operating capacity is scheduled to retire by 2029, nearly 70% of which is coal-fired, and just under a quarter is natural gas. Nearly a third of retirements planned by 2029 are in the SERC region and another third are in the RF region. Nearly half (48%) of retirements in the next five years are among investor-owned utility plants. Nearly 11% are among public power utility plants.

Table 6.3Planned Retirements to 2029, by Fuel Type

Fuel Type	MW	Share
Coal	56,174.60	69.98%
Natural Gas	19,179.40	23.89%
Residual Fuel Oil	1,724.70	2.15%
Distillate Fuel Oil	1,169.20	1.46%
Nuclear	1,159.22	1.44%
Kerosene	281.30	0.35%
Wood/Wood Waste Solids	213.10	0.27%
Wind	183.59	0.23%
Waste	87.00	0.11%
Jet Fuel	37.20	0.05%
Hydro	36.13	0.05%
Solar	13.50	0.02%
Landfill Gas	12.00	0.01%
Biomass Gases	3.60	0.00%
Total	80,274.53	
Energy Storage	13.00	

As shown in Table 6.4, 37,563 MW of planned generation capacity additions were canceled in 2024. Solar projects account for nearly half of the canceled capacity. Nearly 90% of canceled projects are by nonutility generators.

Table 6.4Plant Cancellations by Fuel Type, 2024

Fuel Type	MW	Share
Solar	16,121.30	42.92%
Wind	14,652.50	39.01%
Natural Gas	5,076.90	13.52%
Hydro	1,598.12	4.25%
Other	62.50	0.17%
Geothermal	46.00	0.12%
Landfill Gas	3.20	0.01%
Distillate Fuel Oil	3.00	0.01%
Total	37,563.52	
Energy Storage	6,984.58	

Since 2017, nearly 336,000 MW of planned generation capacity additions were ultimately canceled, well above the capacity that was added. Wind, natural gas, and solar each make up over a quarter of the canceled capacity.

Table 6.5Plant Cancellations by Fuel Type, 2017-2024

Fuel Type	MW	Share
Wind	105,562.73	31.4%
Solar	97,457.24	29.0%
Natural Gas	89,866.83	26.8%
Nuclear	15,080.00	4.5%
Hydro	14,313.44	4.3%
Coal	7,587.00	2.3%
Geothermal	1,996.10	0.6%
Petroleum Coke	1,196.00	0.4%
Other	969.10	0.3%
Wood/Wood Waste Solids	466.10	0.1%
Waste	292.60	0.1%
Biomass Solids	216.40	0.1%
Landfill Gas	170.22	0.1%
Other Gas	140.50	0.0%
Distillate Fuel Oil	95.60	0.0%
Agriculture Byproduct	81.20	0.0%
Biomass Gases	80.62	0.0%
Waste Heat	65.84	0.0%
Biomass Other	58.06	0.0%
Biomass Liquids	19.00	0.0%
Total	335,714.59	
Energy Storage	19,224.14	

Figure 6.1 Additions, Cancellations, and Retirements, 2017-2024



Figure 6.1 shows generation capacity additions, cancellations, and retirements from 2017 to 2024. While additions exceeded retirements, cancellations far exceeded additions.



Figure 6.2 Additions and Retirements, 2017-2024, Plus Planned Retirements to 2029

Figure 6.2 shows generation capacity additions and retirements from 2017-2024 as well as planned retirements to 2029. Additions make up for more than both current as well as planned retirements.

APPENDIX 1. REGIONAL DEFINITIONS



The regions in this report align with the following current and former regions as defined by the North American Electric Reliability Council:

MRO: Midwest Reliability Organization

NPCC: Northeast Power Coordinating Council

RF: ReliabilityFirst

SERC: SERC Reliability Corporation

Texas RE: Texas Reliability Entity

WECC: Western Electricity Coordinating Council

* The independent system operator that operates the electric grid for nearly all of Texas is the Texas Reliability Entity (Texas RE), and is the name used for this region in the report. The Texas RE monitors and enforces compliance with reliability standards for NERC.

Regions were updated in 2025 to match NERC's consolidation to six regional entities. Regions in this report only includes plants in the United States and excludes plants in Canada.

U.S. Territories: These areas are not a part of NERC, but are included in the total electricity generation, including Puerto Rico, American Samoa, Guam, Northern Mariana Islands, and the U.S. Virgin Islands



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