U.S. electricity generation and share from selected fuels and renewable sources

U.S. electricity demand

U.S. electricity use growth rate, three-year rolling average
AEO2021 economic growth cases

- Percentage growth
- 2020 history projections
- High Economic Growth
- Low Economic Growth
- Reference

U.S. electricity use by end-use sector
AEO2021 Reference case

- Residential
- Commercial
- Industrial
- Transportation

Note: Onsite generation is electricity produced onsite for own use.


U.S. electricity generation levels from selected fuels and renewable sources

U.S. electricity generation, AEO2021 oil and gas supply cases

- Reference case
- Low Oil and Gas Supply case
- High Oil and Gas Supply case

Note: Renewables category includes electricity generation from wind, solar, hydroelectric, geothermal, wood, and other biomass sources.

U.S. electricity generation levels from selected fuels and renewable sources

U.S. electricity generation, AEO2021 renewables cost cases

Reference case

Low Renewables Cost case

High Renewables Cost case

Note: Renewables category includes electricity generation from wind, solar, hydroelectric, geothermal, wood, and other biomass sources.

U.S. retiring and new generating capacity

Annual electricity generating capacity additions and retirements

Source: Form EIA-860M, Monthly Update to the Annual Electric Generator Report, July 2020
U.S. cumulative retiring and new generating capacity

Cumulative electricity generating capacity additions and retirements (2021–2050)
AEO2021 selected cases

Electricity prices by components and long-term average electricity prices
Hybrid versus stand-alone solar photovoltaic (PV) and energy storage systems

U.S. solar PV generating capacity, all sectors
AEO2021 Reference case
gigawatts

U.S. storage energy capacity, power sector
AEO2021 Reference case
billion kilowatthours

Renewable capacity by source and region

Total renewables capacity in all sectors, 2019 and 2050
AEO2021 selected side cases
gigawatts

Economic cost competitiveness of generating technologies

Levelized avoided cost of electricity (LACE) and levelized cost of electricity (LCOE) by technology, 2026 online year, AEO2021 Reference case

2020 dollars per megawatthour

Economically attractive builds are shown above the diagonal breakeven line for each technology.

The solid, colored circles on the figure indicate that projects tend to be built in regions where revenue (LACE) exceeds costs (LCOE).

Note: CCGT = natural gas combined cycle, PV = solar photovoltaic


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U.S. renewable portfolio standards

Total qualifying renewables generation required for combined state renewable portfolio standards and projected total generation from compliant technologies

AEO2021 Reference case

billion kilowatthours

U.S. nuclear capacity and annual capacity changes

U.S. nuclear electricity generating capacity
AEO2021 oil and gas supply cases

Year-over-year nuclear capacity changes
AEO2021 Reference case

U.S. coal-fired generation, capacity, and capacity factors

U.S. total electricity generation
AEO2021 oil and gas supply cases

U.S. capacity factor for coal-fired generation
AEO2021 oil and gas supply cases

U.S. coal-fired generating capacity relative to natural gas prices

U.S. electric generating capacity
AEO2021 oil and gas supply cases

Average delivered natural gas prices to the electric power sector
2020 dollars per million British thermal units

- Low Oil and Gas supply
- Reference
- High Oil and Gas supply

Natural gas prices

Coal-fired capacity

2020 history projections

U.S. electric generating capacity

2000 2010 2020 2030 2040 2050

Coal production by U.S. region

U.S. coal production by region, AEO2021 oil and gas supply cases

Reference case Low Oil and Gas Supply case High Oil and Gas Supply case
million short tons million short tons million short tons

2020 projections 2020 projections 2020 projections

Total West Appalachia Interior

U.S. fossil fuel-fired plant capacity factors

Capacity factor for U.S. fossil fuel-fired plants
AEO2021 Reference case

Note: New combined-cycle (natural gas) plants are assumed to come online in 2023. New builds as shown are multi-shaft combined-cycle units. Existing combined cycle units include both multi-shaft and single-shaft; 12 gigawatts of new single-shaft combined-cycle units are included in existing.