

ACEC Private Industry Brief

Energy & Utilities

Fall 2021

Market Scope

For engineering firms, the energy and utilities market is estimated to be \$31 billion, accounting for 30 percent of 2020 revenues for the *Engineering News-Record* (ENR) Top 500 firms. Many firms count oil and gas companies, as well as electric, gas, and water utilities, as major clients. Typically working under a Master Services Agreement or similar type of contract, firms provide a wide range of engineering services to these clients, including: civil, mechanical/electrical, structural, environmental, geotechnical, and water-related design. Energy and utility clients are also significant buyers of surveying and mapping services, because their projects often span large geographies.

Top Clients

The list below features the top 10 largest U.S. gas and electric utilities (by revenue), and the states in which they primarily operate. The total number of electric utilities in the United States is estimated to be 3,300, with about 200 providing the majority of power.

1. **Exelon:** DE, DC, IL, MD, NJ, PA
2. **Duke Energy:** FL, IN, KY, NC, OH, SC & TN
3. **Southern Company:** AL, GA, IL, MS, TN & VA
4. **PG&E:** CA
5. **NextEra Energy:** FL and nationwide
6. **Dominion Energy:** ID, NC, OH, SC, UT, VA, WV & WY
7. **AEP:** AR, IN, KY, LA, MI, OH, OK, TN, TX, VA & WV
8. **Edison International:** CA
9. **Consolidated Edison:** NY
10. **DTE Energy:** IL, MI, NY, & OH

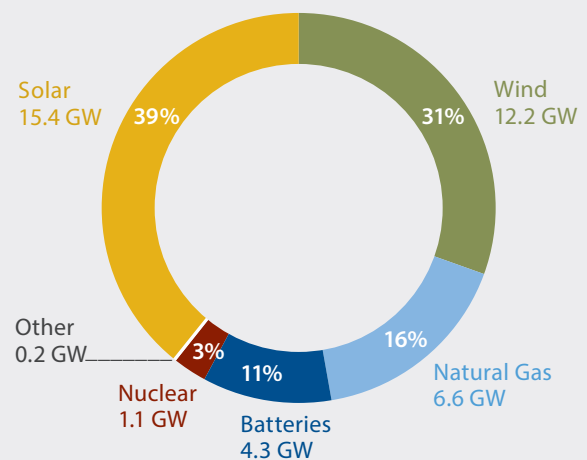
Source: Statista

5 Current Market Trends

- **1. Growth Comes from Renewables:** Future growth in the energy market will come from renewables, according to the latest outlooks by the U.S. Energy Information Administration (EIA) and the International Energy Agency (IEA). As the United States—and the world—grapples with the COVID-19 pandemic and emerges from the short pandemic-caused recession, renewables have proven a bright spot. Solar and wind are expected to make up 70% of utility-scale electricity generation capacity domestic additions in 2021 (*see chart below*), and will grow to 42% from their current 21% in total contribution to electricity generation by 2050 (*see chart on the following page*). Internationally the outlook is similar, with IEA calling renewables "the success story of the Covid-19 era" with an 8% expansion expected in 2021, the fastest year-over-year growth since 1970.

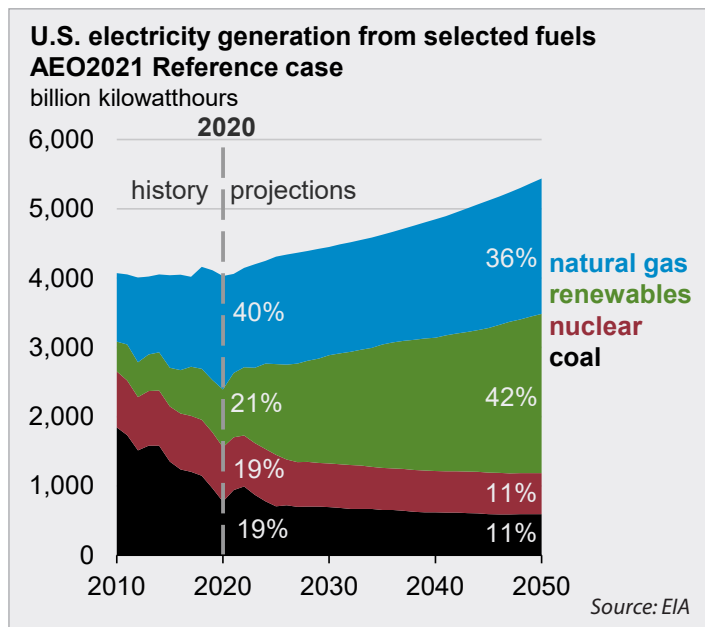
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2021 Planned Utility-Scale Electricity Generating Capacity Additions



Source: U.S. Energy Information Administration (EIA)

Current Market Trends, *continued*



► **2. States Lead Down Carbon-Free Path:** States are leading in setting standards to be carbon-free and limit greenhouse gas emissions out to 2032, 2040, 2050 and beyond. This push is translating into the growth we are seeing in renewables currently and over the next 30 years, as well as advances in electric vehicles, battery storage, and transmission that must also take place for a true green economy. The table to the right details the 18 states, as well as the District of Columbia and Puerto Rico, that have enacted such clean energy goals.

► **3. Off-Shore Wind Picks Up:** Utility-scale wind generation is seen as necessary to meet clean-energy goals, and now off-shore wind developments are becoming a reality. The highest wind-producing states are currently in the Midwest and Texas (*see map on page 4*), but East Coast states are moving quickly to develop wind projects. The 800-MW (megawatt) Vineyard Wind project off the coast of Massachusetts was the first commercial-scale facility to win a federal construction permit in early 2021. Growth is benefiting our industry: *ENR* noted this June that revenue grew 195% between 2015 and 2019 among firms ranked on its Sourcebook wind market list.

"Renewables remain the success story of the Covid-19 era. Demand for renewables grew by 3% [worldwide] in 2020 and is set to increase across all key sectors... demand for renewables is on course to expand by more than 8%... the largest year-on-year growth on record in absolute terms.

- International Energy Agency, 2021

► **4. Focus on Transmission Improvements:**

Transmission constraints are impacting development for growing renewable energy projects. A Federal Energy Regulatory Commission (FERC) commissioner noted at a July 27, 2021 congressional hearing that 93% of 750 gigawatts of power projects now waiting for transmission connections are for renewable energy. Limitations stem from technology, as well the need to advance outdated planning and permitting processes.

► **5. ESG - Potential Opportunities and Burdens:**

Energy, Social and Governance (ESG) services present opportunities for engineering firms, as well as potential burdens as firms plan to comply with future rules themselves. Many clients now need to document ESG progress, with drivers from boards, investors, clients, and the threat of lawsuits. And on May 20, 2021 the Biden Administration released an executive order directing federal officials and major federal contractors to disclose risks and develop comprehensive climate risk strategies within 120 days.

State/Territory	Clean Energy Goal
Arizona	100% carbon-free electricity by 2070
California	100% carbon-free electricity by 2045
Colorado	100% carbon-free electricity by 2050 for Xcel Energy
Connecticut	100% carbon-free electricity by 2040
District of Columbia	100% renewable energy by 2032 through the Renewable Portfolio Standards (RPS)
Hawaii	100% renewable energy by 2045 through RPS
Louisiana	Net zero greenhouse gas emissions by 2050
Maine	100% clean energy by 2050
Massachusetts	Net-zero greenhouse gas emissions by 2050
Michigan	Economy-wide carbon neutrality by 2050
Nevada	100% carbon-free electricity by 2050
New Jersey	100% carbon-free electricity by 2050
New Mexico	100% carbon-free electricity by 2045
New York	100% carbon-free electricity by 2040
Oregon	Greenhouse gas emissions reduced 100% below baseline emissions by 2040
Puerto Rico	100% renewable energy for electricity by 2050
Rhode Island	100% renewable energy electricity by 2030
Virginia	100% carbon-free electricity by 2045 for Dominion Energy and 2050 for Appalachian Power Company
Washington	100% zero-emissions electricity by 2045
Wisconsin	100% carbon-free electricity by 2050

Source: Clean Energy States Alliance

Infrastructure Bill: Key Legislation

On August 10, 2021 the U.S. Senate passed the bipartisan Infrastructure Investment and Jobs Act (H.R. 3684). The legislation passed 69-30 and now heads to the House of Representatives for passage. The bill included \$944 B in spending over five years, with \$550 B in new spending. The legislation includes several authorizing bills, including the Energy Infrastructure Act (S. 2377) and the Drinking Water and Wastewater Infrastructure Act (S. 914).

Detailed below are aspects of the bill which are key to the energy and utilities market.

- ▶ **Power and Grid, \$65 B:** Includes the bipartisan, U.S. Senate Committee on Energy and Natural Resources -passed Energy Infrastructure Act, which includes funds for: grid reliability and resiliency, including support for a new federal entity called the Grid Deployment Authority; critical minerals and supply chains for clean energy technology; key technologies related to carbon capture, hydrogen, direct air capture, and energy efficiency; and energy demonstration projects detailed in the bipartisan Energy Act of 2020.
- ▶ **Broadband, \$65 B:** Funds for: grants to states for broadband deployment; expansion of private activity bond projects to include broadband infrastructure; and support for middle-mile deployment efforts.
- ▶ **Water Infrastructure, \$55 B:** Includes \$23.4 B in funds for the bipartisan Drinking Water and Wastewater Infrastructure Act of 2021. Also included is \$15 B for lead service line replacement and \$10 B to address Per- and Polyfluoroalkyl Substances (PFAS). Legislation includes the Senate Drinking Water and Wastewater Infrastructure Act (S. 914). Passed by the Senate in April 29, 2021, this bill reauthorizes \$35 B in existing programs, and creates new programs to support drinking water and wastewater infrastructure projects. A majority of this funding is allocated to the existing Drinking Water State Revolving Fund and the Clean Water State Revolving Fund, both administered by the U.S. Environmental Protection Agency (EPA).
- ▶ **Resiliency, \$47.2 B:** Funds for: cybersecurity to address critical infrastructure needs; waste management; flood and wildfire mitigation; drought; coastal resiliency; ecosystem restoration; heat stress; and weatherization.
- ▶ **Western Water Infrastructure, \$8.3 B:** Funds for Bureau of Reclamation western water infrastructure, including for: aging infrastructure; water storage; water recycling and reuse; waterSMART; and drought contingency plans.

Business Development Insight

Understanding the players in the growing private water utility market

About 12% of the U.S. population is served by private water systems, with about 14 publicly traded companies serving customers in 33 states in 2019, according to analysis by the U.S. Government Accountability Office (GAO) and the University of North Carolina.

Although some have expressed hesitancy over private utilities providing critical public services connected to providing safe drinking water, the need for significant investment in water systems has many communities looking beyond municipal-owned models.

The March 2021 GAO study, "Private Water Utilities: Actions Needed to Enhance Ownership Data" details that the estimated 50,000 drinking water utilities in the United States face more than \$470 billion in costs over the next 20 years to repair and replace drinking water infrastructure, and calls for EPA to update and correct inaccuracies regarding ownership information in its Safe Drinking Water Information System. EPA provided over \$500 million in Drinking Water State Revolving Fund assistance to for-profit utilities for 226 projects from January 2010 through June 2020.

Let's take a look at some of the larger private water utilities operating in the United States:

American Water Works Company Inc. (NYSE: AWK) - Headquartered in Camden, NJ, the largest private water utility domestically, with subsidiaries in 14 states: CA, IL, IN, IA, KY, MD, MI, MO, NJ, NY, PA, TN, VA & WV.

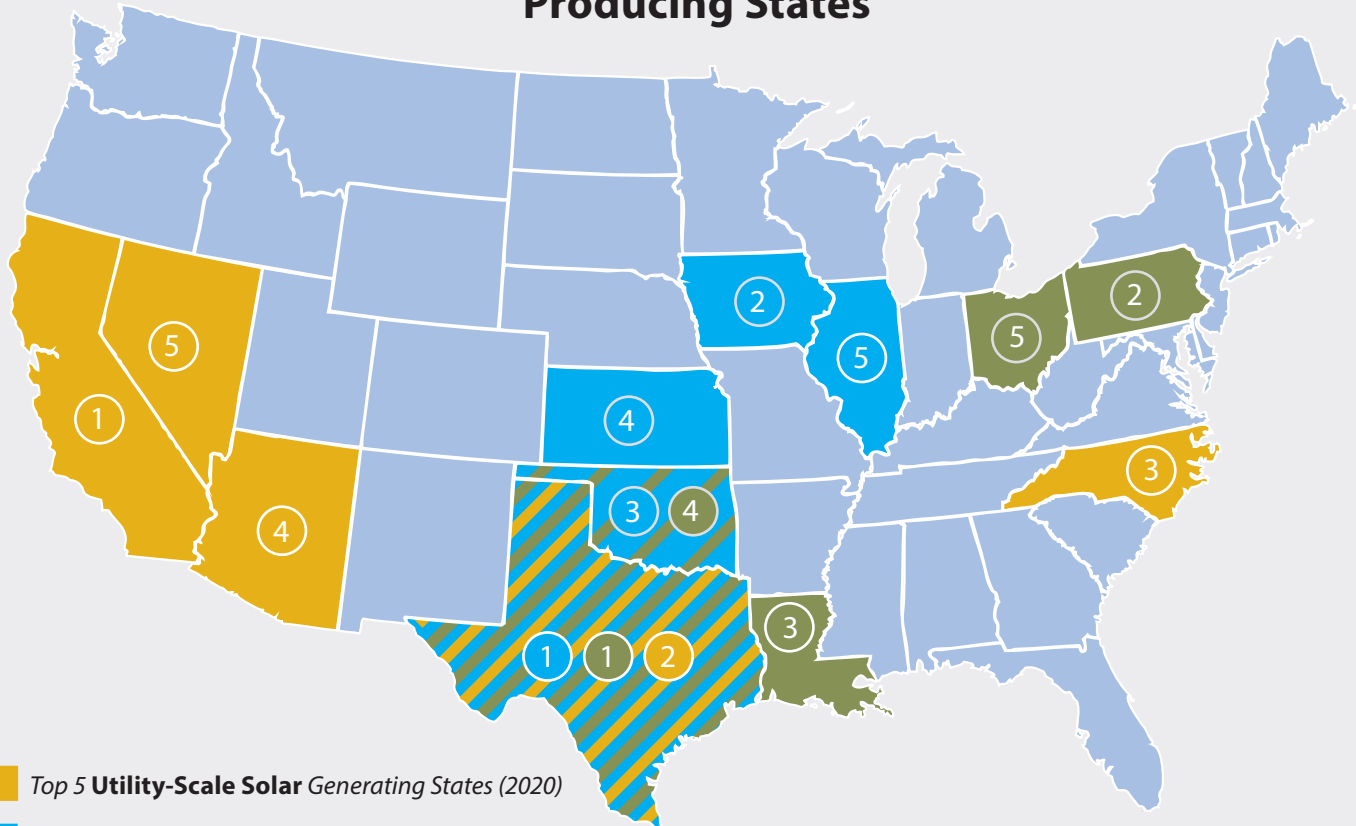
Aqua America Inc. (NYSE: WTRU) - Headquartered in Bryn Mawr, PA, there are Aqua subsidiaries in eight states: IL, IN, NJ, NC, OH, PA, TX & VA.

SJW Group (NYSE: SJW) - Headquartered in San Jose, CA, the company has subsidiaries in four states: CA, CT, ME & TX.

Suez (Paris stock exchange: SEV) - French-based international company with its North American headquarters in Paramus, NJ, Suez owns 16 regulated water utilities domestically.

Veolia North America LLC - Privately held subsidiary of the French-headquartered Veolia Group, listed as Veolia Environnement (Paris stock exchange: VIE). The Veolia North American head office is in Boston, and it has government water clients in 24 states.

Top Renewable Energy Producing States



Top 5 Utility-Scale Solar Generating States (2020)

Top 5 Utility-Scale Wind Producing States (2020)

Top 5 Natural Gas Producing States (2019)

Source for map information: EIA

Private Market Symposiums:

Kicking off in December 2021

Kicking off in December 2021, ACEC's new Private Market Symposiums will convene clients, economists, policy makers and engineering leaders in different cities throughout the country for an in-depth look into each private market.

Future Symposiums include:

Intermodal & Logistics - December 2-3, 2021 in Charleston, SC

Commercial & Residential Real Estate - March 3-4, 2022 in Scottsdale, AZ

Health Care & Science+Technology - April 28-29, 2022 in Boston (Cambridge), MA

Subscribers to the Private Industry Briefs will receive alerts when Symposium registration opens. To subscribe visit:

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Further coverage can be found in *Engineering Inc.*'s regular column "The Private Side" as well as ACEC's quarterly economic reviews.

