

Natural Gas and Renewables Increased their Share of the Co-op Fuel Mix in 2022

Key Findings

- Electric cooperative retail sales grew significantly in 2022, rising by 4.8% over 2021 levels.
- Natural gas exceeded coal as the largest source of power for cooperatives in 2022.
- The share of non-hydro renewable resources in the cooperative fuel mix set a new high.

National Demand and Generation Trends

National retail electricity (MWh) sales grew by 3.1% in 2022, up from 2.3% in 2021. Natural gas generation set a new record in 2022, supplying 39% of electricity in the United States despite high gas prices for much of the year, with gas to coal generation shifting limited due to coal plant retirements and coal supply and transportation issues. High fuel costs put upward pressure on wholesale electricity costs across much of the country. Renewable generation also set a new record in 2022, surpassing coal generation for the first time after surpassing nuclear generation in 2021. Most renewable growth was driven by new wind and solar capacity, though hydroelectric generation also rose slightly above 2021 levels, as water conditions improved in the West and Pacific Northwest. Nuclear generation also declined slightly due to the May retirement of the Palisades Nuclear Plant in Michigan.¹

What is the impact on electric cooperatives?

Electric cooperative² retail sales growth exceeded national growths, rising by 4.8% in 2022, up from 3.6% in 2021.³ About 8 in 10 distribution cooperatives are members of a generation and transmission (G&T) cooperative, and co-op owned plants supply approximately 40% of the electricity sold at retail. The remainder is purchased through bilateral and organized wholesale markets, exposing co-ops to the same trends affecting the larger electric utility industry. NRECA's analysis of the 2022 electric cooperative retail fuel mix, a blended estimate of co-op owned generation and power purchases, shows that the co-op power supply mix continued to follow national trends. See Figure 1.

After falling below coal in 2021, natural gas was the largest source of power for co-ops in 2022 at just over 32%, though still slightly below its 2020 share. Natural gas and coal are often directly competing resources, so it is not surprising that the share of co-op power coming from coal generation dipped below 30% for only the second time, though slightly higher than its 2020 share. Hydroelectric generation was down somewhat in 2022 due primarily to lower production in the Southeast, but non-hydro renewables (primarily wind and

¹ There is now potential for a first of its kind restart of Palisades Nuclear Plant, due in large part to the involvement of two G&T cooperatives, see <https://www.wolverinepowercooperative.com/palisades/>.

² Including public power districts and other distribution utilities that are members of NRECA.

³ NRECA members can access the 2022 [Vital Signs](#) report for more information on energy sales and other performance statistics.

solar) continued to grow, hitting a new high and offsetting the decline in hydro. In total, more than 70% of cooperative power supply came from low- and non-emitting sources in 2022. Non-hydro renewables are expected to grow rapidly in coming years due to an acceleration in new and planned co-op projects, especially new solar projects.⁴

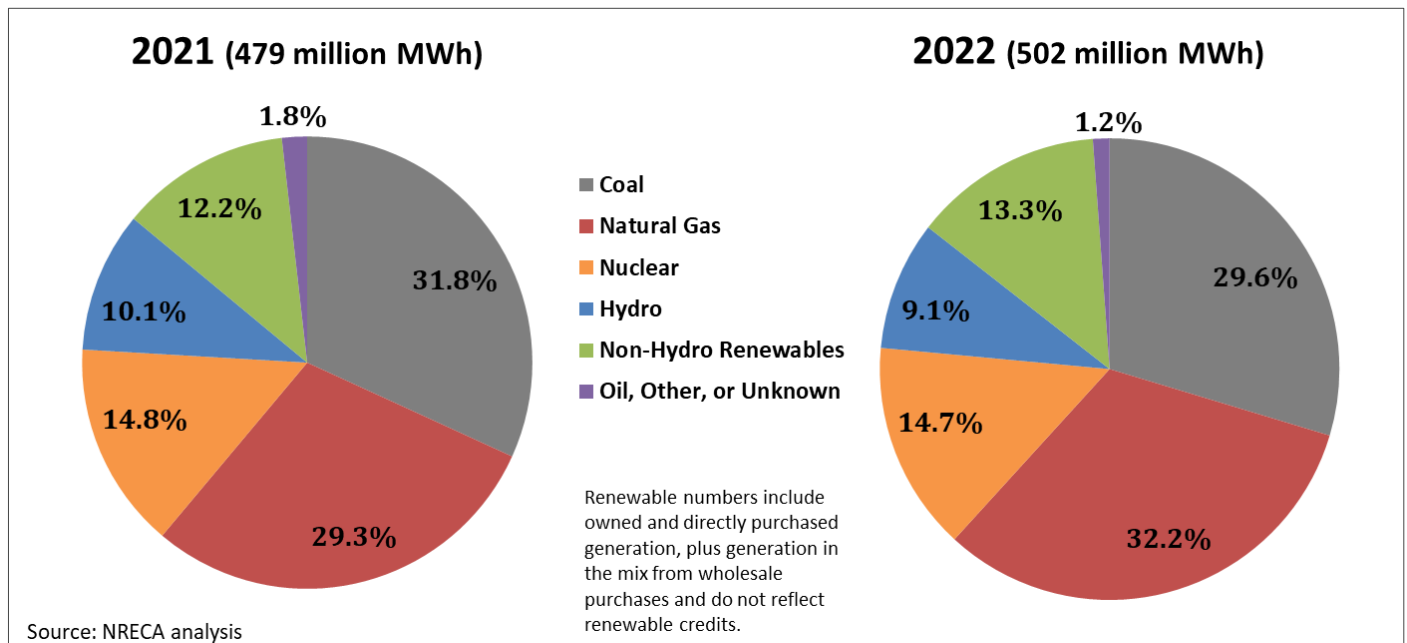


Figure 1: Cooperative Retail Electric Fuel Mix, 2021 and 2022

Looking Forward

Natural gas prices spiked in 2022 after the Russian invasion of Ukraine in February, which led to a significant surge in U.S. liquified natural gas (LNG) exports to Europe at a time when domestic natural gas production was still catching up to demand growth. A mild winter in both the U.S. and Europe and steady increases in natural gas production led to prices falling sharply at the end of 2022 back down to pre-pandemic levels. Natural gas generation, which had set a record in 2022 despite high fuel prices, again set a new record in 2023 as prices lowered, while coal generation fell due largely to plant retirements and some associated coal supply and transportation issues.

As shown in Figure 2, in 2024 and 2025, EIA forecasts the share of coal in the U.S. generation mix will continue to decline due to retirements, while the

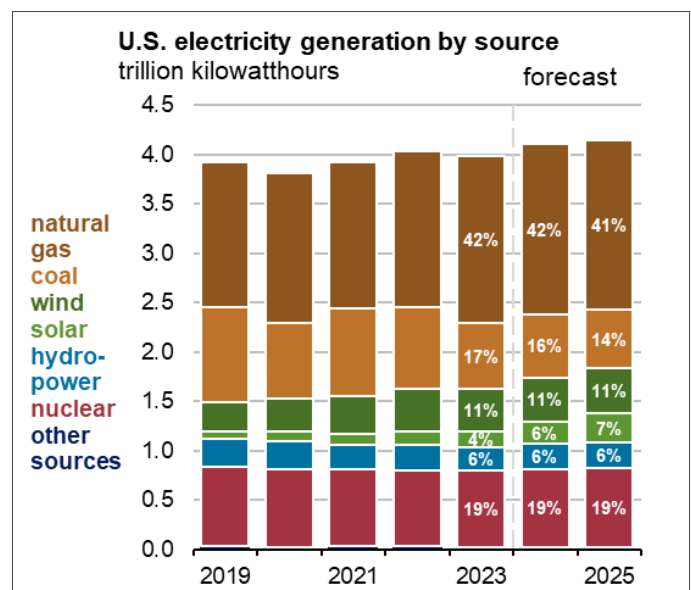


Figure 2: U.S. Electricity Generation by Source
Source: EIA Short Term Energy Outlook, May 2024

⁴ For more information on co-ops' growing renewable portfolio, see this advisory: <https://www.cooperative.com/topics/distributed-energy-resources/Pages/Co-op-Renewable-Growth-Update-2023.aspx>

share from natural gas will remain near current levels. The share of electricity coming from renewables is also forecasted to grow steadily, driven primarily by new solar installations, while the share of energy from wind and hydropower are expected to remain fairly flat. Nuclear generation, which had been declining somewhat year-to-year due to retirements is also set to remain fairly flat going forward, helped in part by the two new units coming online at Plant Vogtle (Unit 3 in 2023 and Unit 4 in 2024).⁵

Contacts for Questions

Michael Leitman

Director, System Optimization

Michael.Leitman@nreca.coop

(703) 907-5864

Lauren Khair

Sr. Director, Energy Research & Resilience

Lauren.Khair@nreca.coop

(703) 907-6845

⁵ For more information on these units, which are 30% owned by Oglethorpe Power, see <https://opc.com/2024/04/29/oglethorpe-power-celebrates-completion-of-the-vogtle-expansion-project/> and <https://www.eia.gov/todayinenergy/detail.php?id=61963>.