Co-ops Added Record New Renewable Capacity in 2020

Key Findings

- Co-ops added nearly 1.6 gigawatts of new renewable capacity in 2020, more than any previous year, despite some slowdowns caused by the COVID-19 health crisis.
- Growth is set to accelerate in the next three years, driven in part by large solar projects.
- Most capacity growth has been through power purchase agreement, rather than direct ownership.

Electric Cooperatives and Renewable Energy – A Long History

Electric cooperatives have been involved with renewable energy since the very beginning, as the growth of rural electrification was intertwined with the growth in federal hydropower, both resulting from economic development "New Deal" programs of the 1930s. Today, co-ops and NRECA's public power members purchase the output from roughly 10 gigawatts of hydroelectric plants sold by the four federal Power Marketing Administrations and the Tennessee Valley Authority. Most of this power is purchased under the "preference principle," wherein not-for-profit co-ops and public utilities are given first right of purchase at the lowest possible cost, which provided an early source of affordable power for rural electrification. While co-ops across the U.S. purchase federal hydro, co-ops in the Pacific Northwest are particularly reliant on this resource for the majority of their power supply.

Co-ops Added More Renewables in 2020 Than Any Previous Year

In 2020, electric cooperatives added nearly 1.6 gigawatts of new renewable capacity,[1] more than in any previous year. By the end of 2020, co-ops had more than 11.4 gigawatts of renewables in their resource portfolios, in addition to 10 gigawatts of federal hydro. These resources include non-federal hydroelectric resources, as well as wind, solar, biomass, and heat capture technologies.[2] More than 80% of this capacity is owned or contracted for by generation & transmission cooperatives.

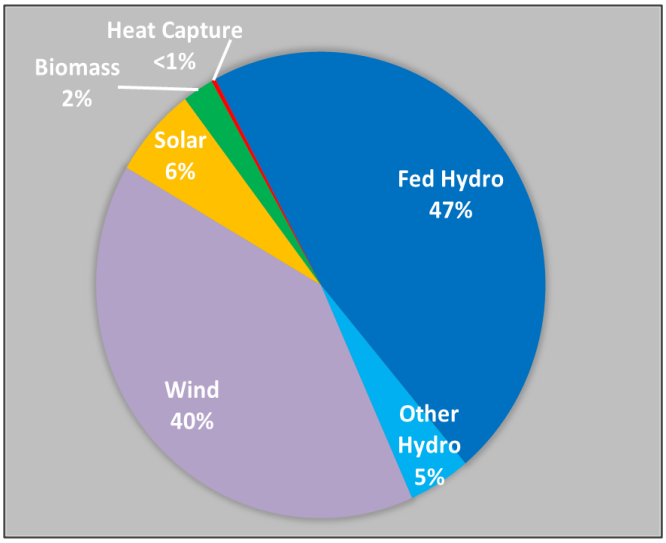

Figure 1: Co-op Renewable Portfolio, Including Federal Hydro, 21.4 gigawatts (2020)

[1] Data on cooperative renewable resources are based on NRECA research using a variety of public sources.

[2] Some co-ops sell the environmental attributes of power generated using renewable resources.

Wind has Dominated Growth Since 2004, but Solar Growth has Accelerated

Wind has made up the vast majority of renewable additions since 2004, with nearly 8.6 gigawatts of wind capacity online by the end of 2020, and more than 1.6 gigawatts planned through 2023. Most co-op wind projects are located in the Midwest and Texas, where wind resources are concentrated. Solar energy has grown rapidly in the last five years, exceeding 1.3 gigawatt in total capacity in 2020, with projects in nearly every state. With over 4.8 gigawatts of new capacity planned to come online through 2024, solar projects now account for the majority of planned renewable capacity. Solar capacity growth has accelerated in large part due to the increasing size of recent and planned co-op solar projects, including several of 100 megawatts or larger. Co-op solar resources have seen particular growth in the Southeast and the West, though many large projects are now planned in the Midwest as well.

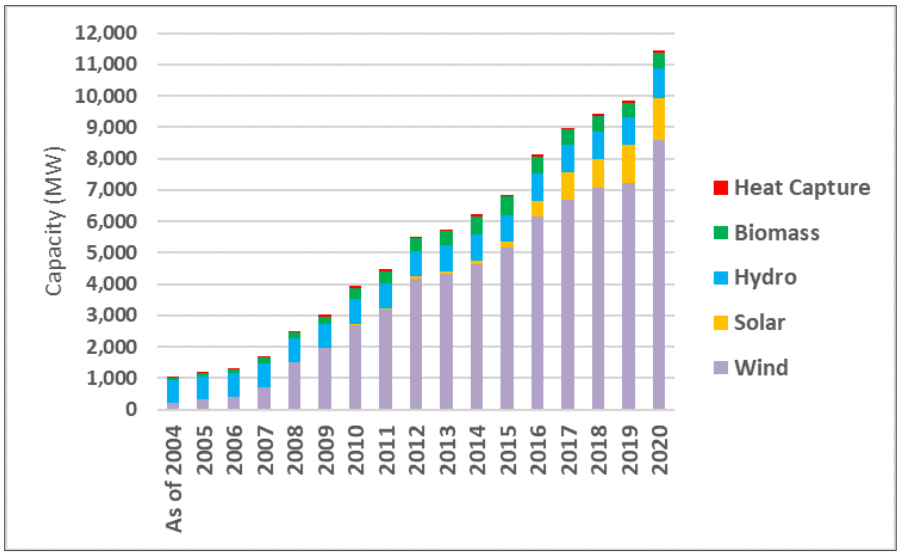

Figure 2: Cumulative Co-op Renewable Capacity Online (By Type, Excl. Fed Hydro)

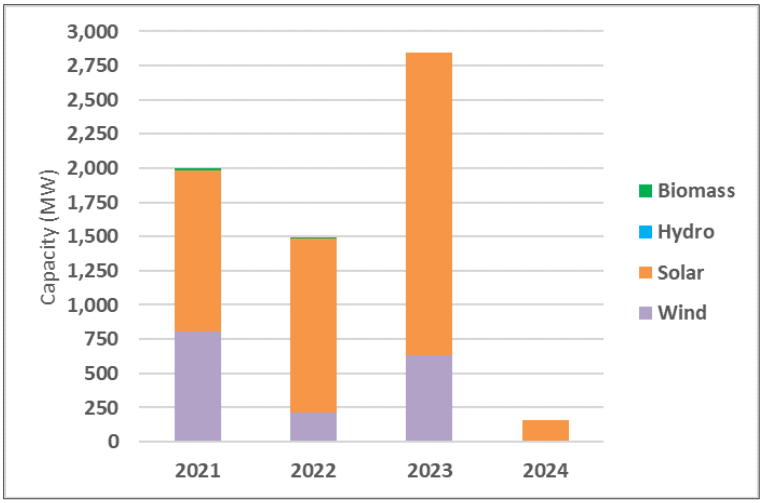

Figure 3: Planned Capacity by Year (By Type)

Most Growth has Come through Power Purchase Agreements

Most electric cooperatives are not-for-profit, making it difficult to directly access federal tax credits for renewable project development. For this and other reasons (e.g. lack of experience with operations & maintenance), co-ops have primarily used power purchase agreement (PPA) contracts to add new renewable

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resources, capturing the benefits of the tax credits through negotiated contract rates. Of the more than 11.4 gigawatts of non-federal co-op renewable capacity, 9.8 gigawatts are under PPAs, with most planned new capacity also from contracted projects. This is of course in addition to purchasing the output from about 10 gigawatts of federal hydro facilities annually.

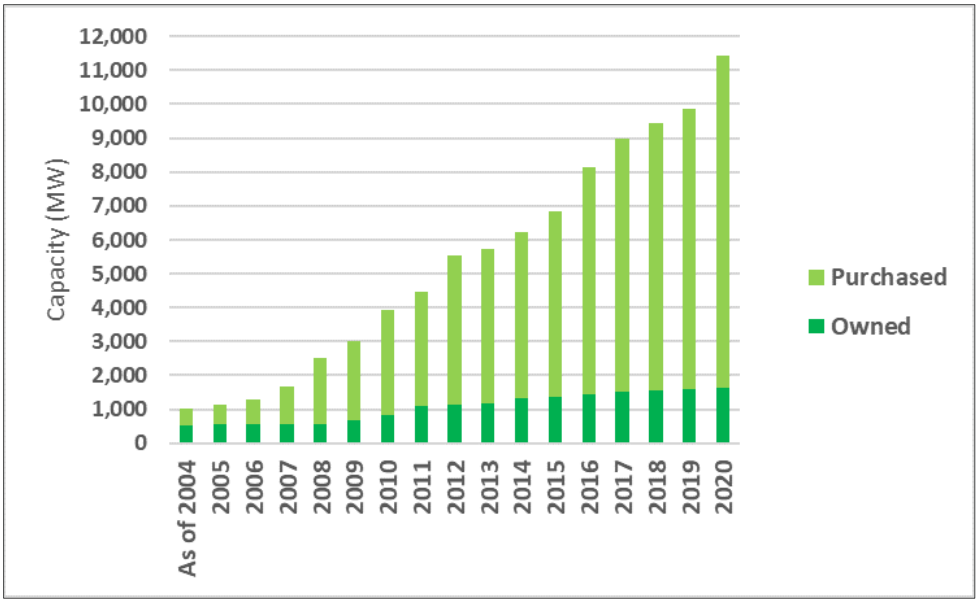

Figure 4: Cumulative Co-op Renewable Capacity Online (By Owned or Purchased through PPA, Excl. Fed Hydro)

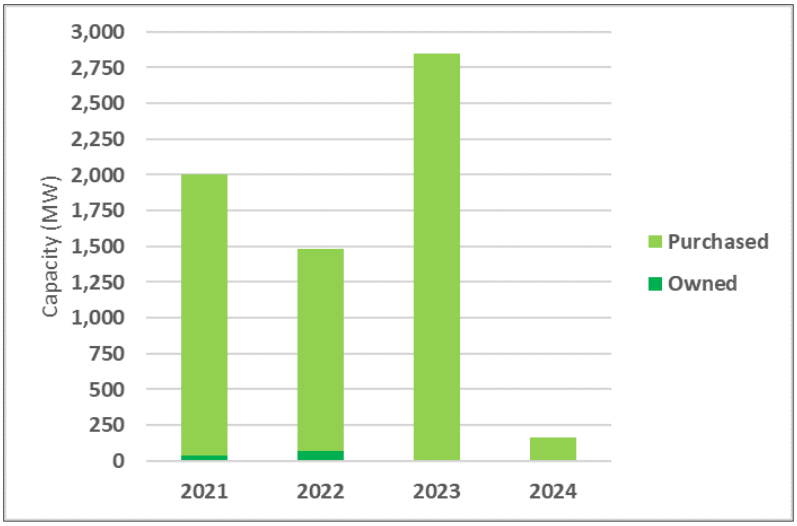

Figure 5: Planned Capacity by Year (By Owned or Purchased through PPA)

In December 2020, Congress passed an extension of federal tax credits for wind and solar development as part of the *Consolidated Appropriations Act of 2021*. Onshore wind projects received a one-year extension, allowing projects begun in 2021 to receive a 60% production tax credit (2.5 cents per MWh) or, alternatively, an 18% investment tax credit (ITC). There was also an extension of ITC for projects utilizing small wind turbines (limited to one turbine of 100 kilowatts or smaller), with a 26% ITC available for projects started in 2021 and 2022, declining to 22% for projects started in 2023. Special provision was included for offshore wind, with the full 30% ITC rate available to any offshore wind farm commenced after 2016 and before 2026.

The ITC for solar energy was also extended, with the 26% ITC available for projects started in 2021 and 2022, and a 22% credit for projects started in 2023. After 2023, commercial and utility projects will continue to receive a 10% tax credit, but residential projects will no longer receive a credit. All tax credits include a requirement for continuous construction and a time limit for completion.[3]

While the reduction and sunsetting of federal tax credits for wind and solar might lead some co-ops to reconsider direct ownership of renewable resources, in the near term nearly all planned capacity additions are for PPA projects. A growing number of recent and planned projects are hybrids, which include combinations of multiple renewable technologies or renewables paired with on-site battery storage. PPAs have been the method of choice for co-ops adding these complex projects as well.

The Impact of COVID-19 on U.S. Renewable Development

The COVID-19 pandemic was expected to cause disruptions in the renewable energy market due to social distancing requirements and supply chain issues. Renewable projects tend to come online late in the year, in part due to tax credit requirements. According to preliminary data from the U.S. Energy Information Administration (EIA), more than 3.4 gigawatts of wind and over 900 megawatts of solar originally expected to come online in 2020 were pushed back to 2021, likely at least partly attributable to impacts of the health crisis. Nevertheless, 2020 was still a record-setting year of growth for both renewable technologies, with an additional 14.2 gigawatts of wind and 11.1 gigawatts of solar coming online nationwide.[4]

In May 2020, the Internal Revenue Service (IRS) released a notice providing extensions for tax-credit eligible renewable projects impacted by the health crisis. This notice added an extra year to the four-year "Continuity Safe Harbor" for certain projects that began construction in 2016 or 2017. Relief was also provided for more recent projects that have commenced construction and have already incurred 5% of project costs.[5]

Other Resources

NRECA maintains interactive maps of co-op renewable resources here.

Contacts for Questions

General

Michael Leitman
Director, System Optimization
michael.leitman@nreca.coop

Regarding Renewable Tax Credits

Russ Wasson
Senior Director of Tax, Finance and Accounting Policy
russell.wasson@nreca.coop

[3] For more information on these extensions, see https://home.kpmg/us/en/home/insights/2020/12/tnf-favorable-tax-provisions-renewable-energy-industry-enacted.html.

[4] EIA reporting is for utility-scale wind and solar facilities (1 megawatt or greater). Data from EIA's Short-Term Energy Outlook for February and March 2021. Can be found here: https://www.eia.gov/outlooks/steo/outlook.php#issues2021.

[5] IRS Notice 2020-41 can be found here: https://www.irs.gov/pub/irs-drop/n-20-41.pdf. The KPMG report above also discusses how the tax credit extension interacts with the earlier IRS safe-harbor policy.

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