

## Co-op Renewables Continue to Grow, with Solar Accelerating

### Key Findings

- Cooperative renewable capacity has grown steadily since 2004, especially wind.
- 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.
- The COVID-19 health crisis is expected to cause delays in renewable projects that were scheduled to come online in 2020 due to labor and supply chain disruptions.

### Co-op Renewable Resources Exceeded 20 Gigawatts in 2019

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 New Deal programs. Today, co-ops and NRECA's public power members purchase the output from roughly 10 GW 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 were given first right of purchase at the lowest possible cost, providing 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.

Since the early 2000s, co-ops have steadily grown their renewable capacity, and by the end of 2019, co-ops had about 10.1 GW of other renewables in their resource portfolios in addition to federal hydro. These resources include non-federal hydroelectric resources, as well as wind, solar, biomass, and heat capture technologies.<sup>1</sup> More than 80% of this capacity is owned or contracted for by generation & transmission cooperatives.

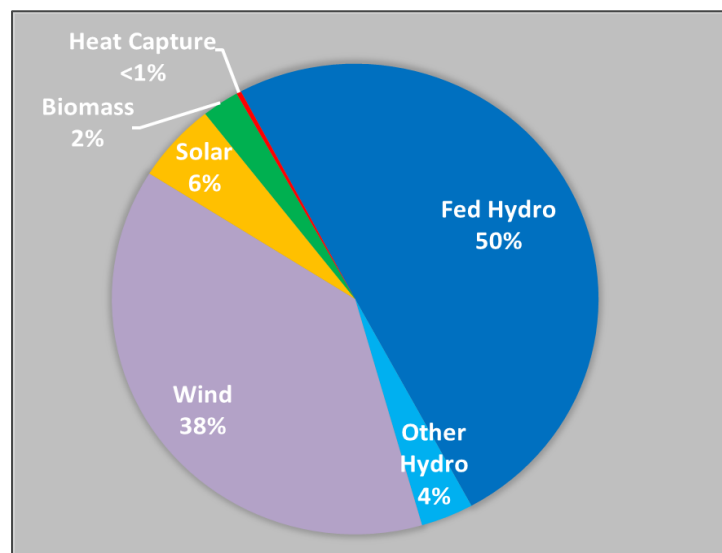


Figure 1: Co-op Renewable Portfolio, 20.1 gigawatts (2019)

<sup>1</sup> 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 additions since 2004, with over 7.5 gigawatts of wind capacity online by the end of 2019, and another 1.8 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 gigawatt in total capacity in 2019, with projects in nearly every state. With over 4.3 gigawatts announced through 2023, 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 MW 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.

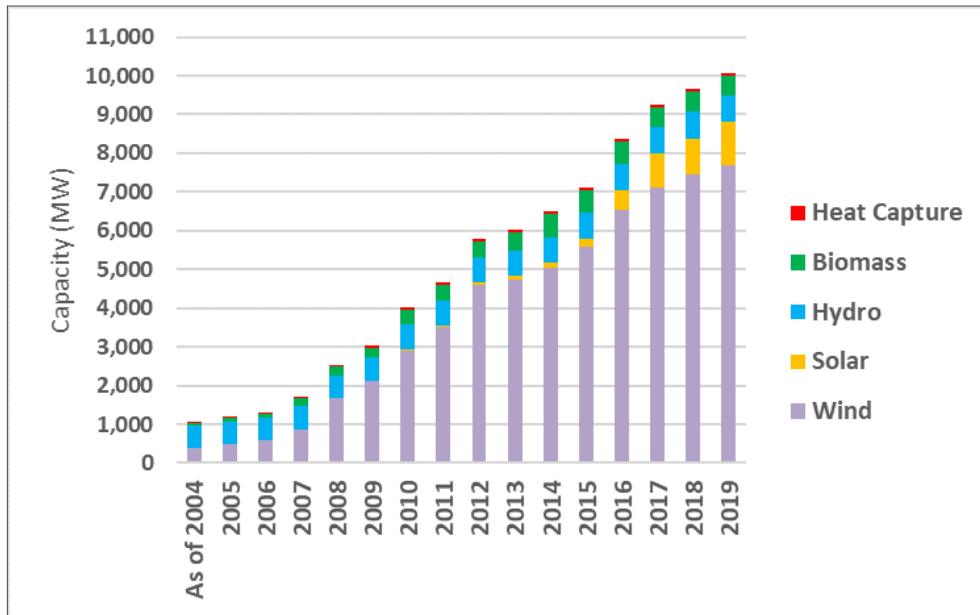


Figure 2: Cumulative Co-op Renewable Capacity Online (By Type, Excl. Fed Hydro)

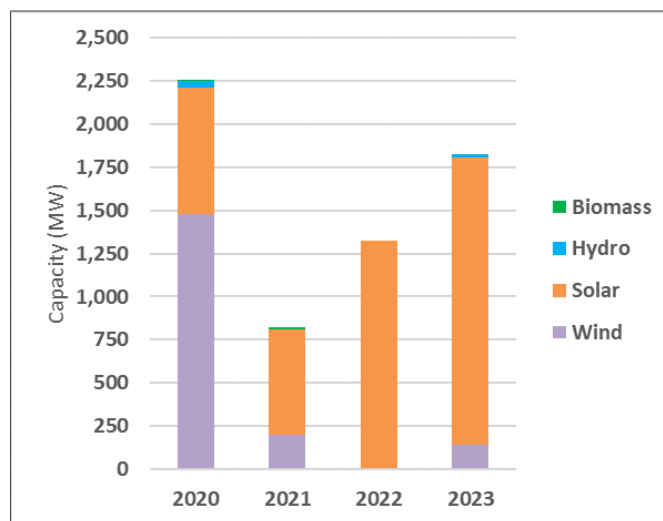
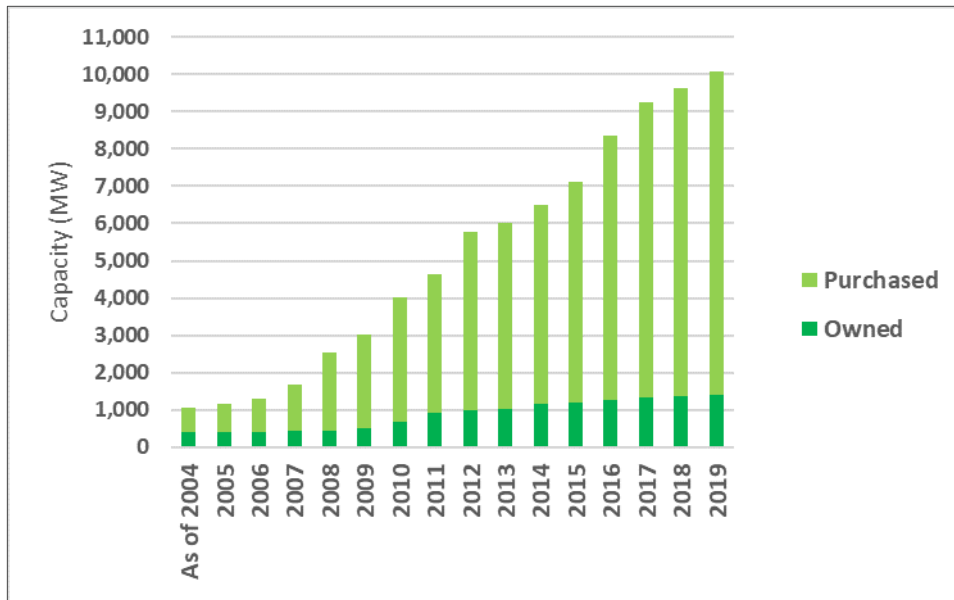


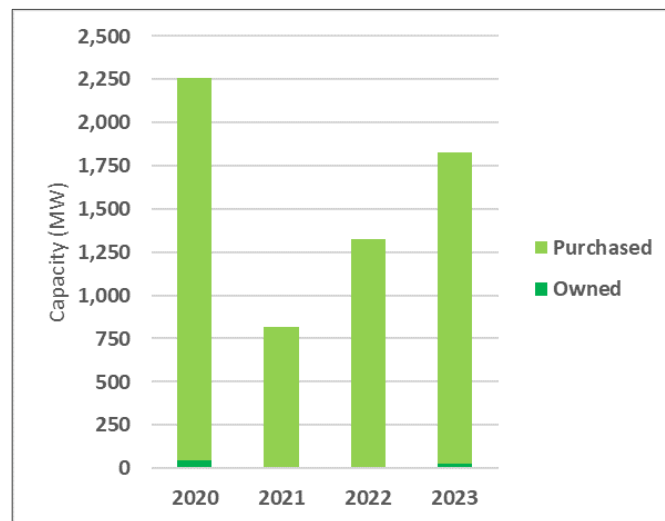
Figure 3: Planned Capacity by Year (By Type)

## 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 resources, capturing the benefits of the tax credits through negotiated contract rates. Of the 10.1 GW of co-op renewable capacity, more than 8.6 GW are under PPAs rather than owned.



**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)**

While the sunset 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 include combinations of multiple renewable technologies or renewable technologies 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

The COVID-19 pandemic is expected to cause disruptions in the renewable energy market due to social distancing requirements and supply chain issues. Wind and solar projects tend to come online late in the year, so in the short term, this will likely mean that many renewable projects planned to come online in 2020 will be delayed to 2021.<sup>2</sup>

In May, the IRS released a notice to address these challenges and provide extensions for renewable projects eligible for tax credits that will be delayed by the pandemic. This notice adds an extra year to the four-year “Continuity Safe Harbor” for certain projects that began construction in 2016 or 2017. Relief is also provided for more recent projects that have commenced construction and have already incurred 5% of project costs.<sup>3</sup>

## Other Resources

NRECA posts data and interactive maps of co-op renewable resources [here](#).

## Contacts for Questions

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<sup>2</sup> In January 2020, before the pandemic hit, the U.S. Energy Information Administration expected 32.2 gigawatts of new wind and 28.3 gigawatts of new solar capacity to come online in 2020. Of this, 65% of new wind and 53% of new solar was expected online by the last three months of the year. See <https://www.eia.gov/todayinenergy/detail.php?id=42495>.

<sup>3</sup> IRS Notice 2020-41 can be found here: <https://www.irs.gov/pub/irs-drop/n-20-41.pdf>.