Status and Trends in the Voluntary Market (2021 data)

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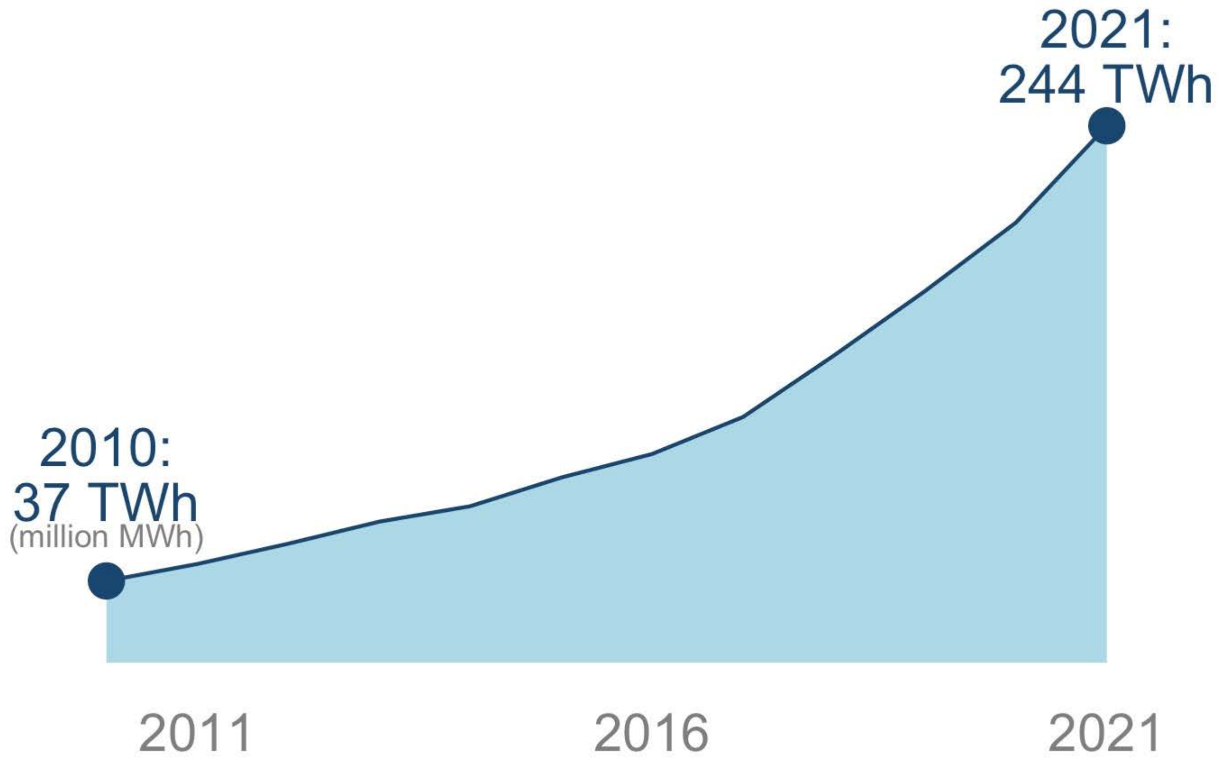
Voluntary Market Context

In 2021, about **8 million customers** (8% increase y/y) procured about **244 million MWh** (22% increase y/y) of voluntary green power.



Total green power sales 2010-2021 (million MWh)

That represents about:

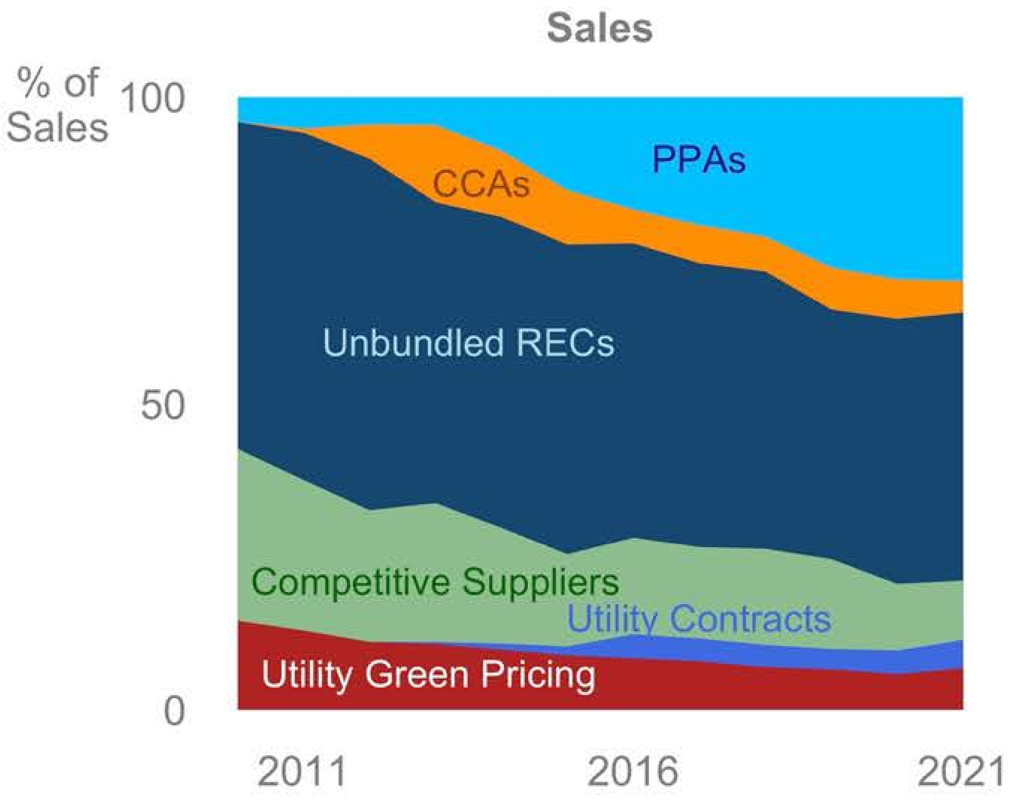
1 in 20
U.S. retail electricity customers

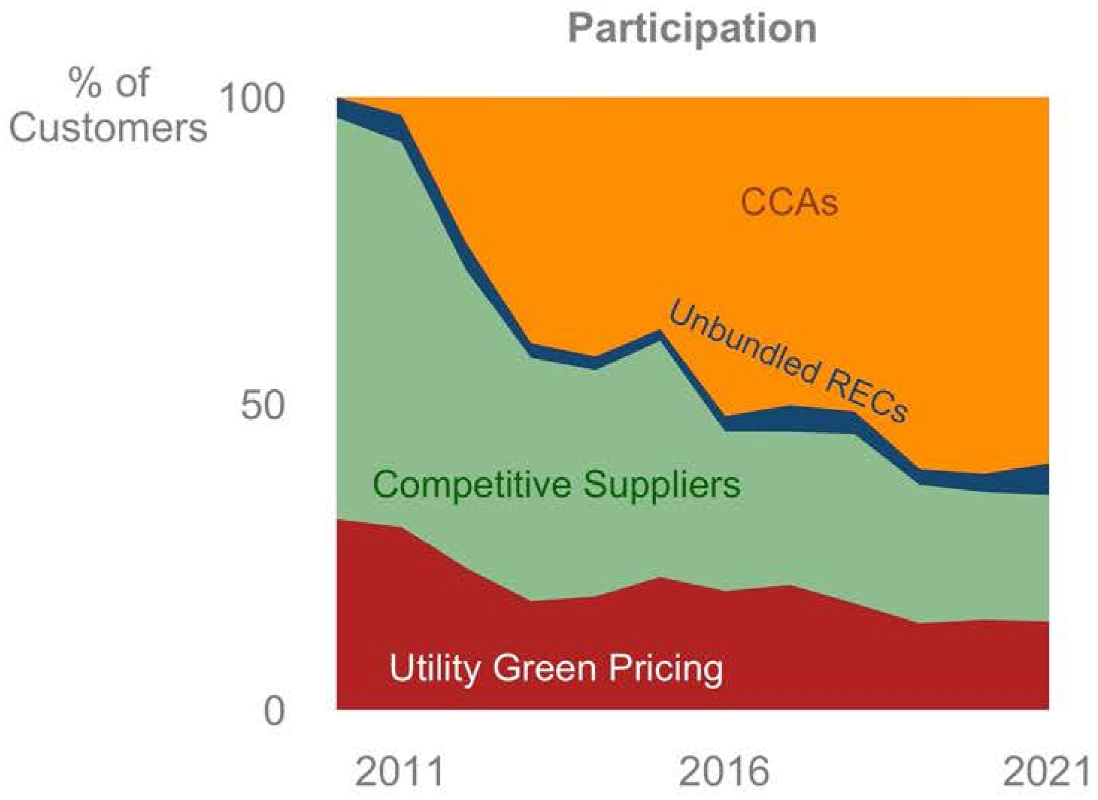
6%
of U.S. retail electricity sales

38%
of U.S. non-hydro renewable energy generation

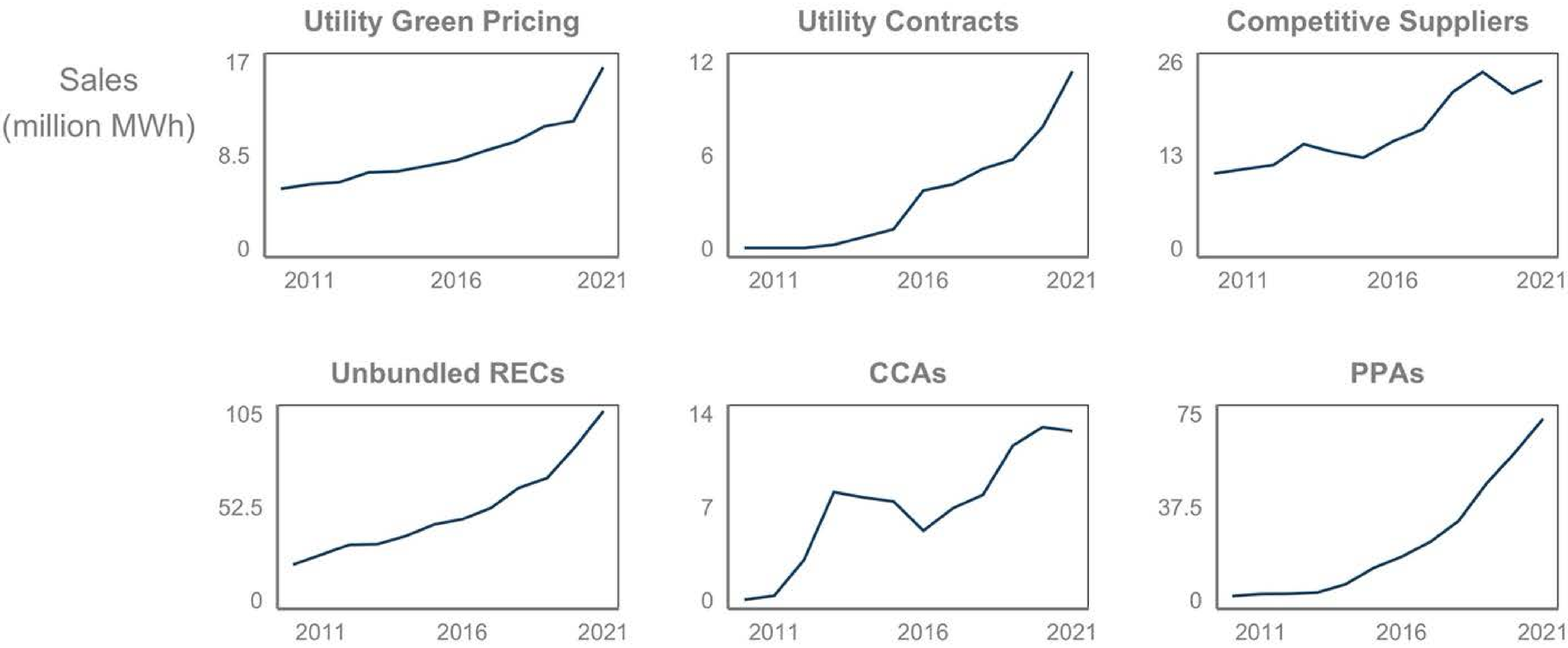
Green Power Sales and Customers by Mechanism

In 2021, the most voluntary sales were via unbundled RECs, while the most customers were via community choice aggregation (CCA) programs. Unbundled RECs purchases are dominated by C&I customers who purchase large volumes, while CCA customers are typically residential customers purchasing low volumes.

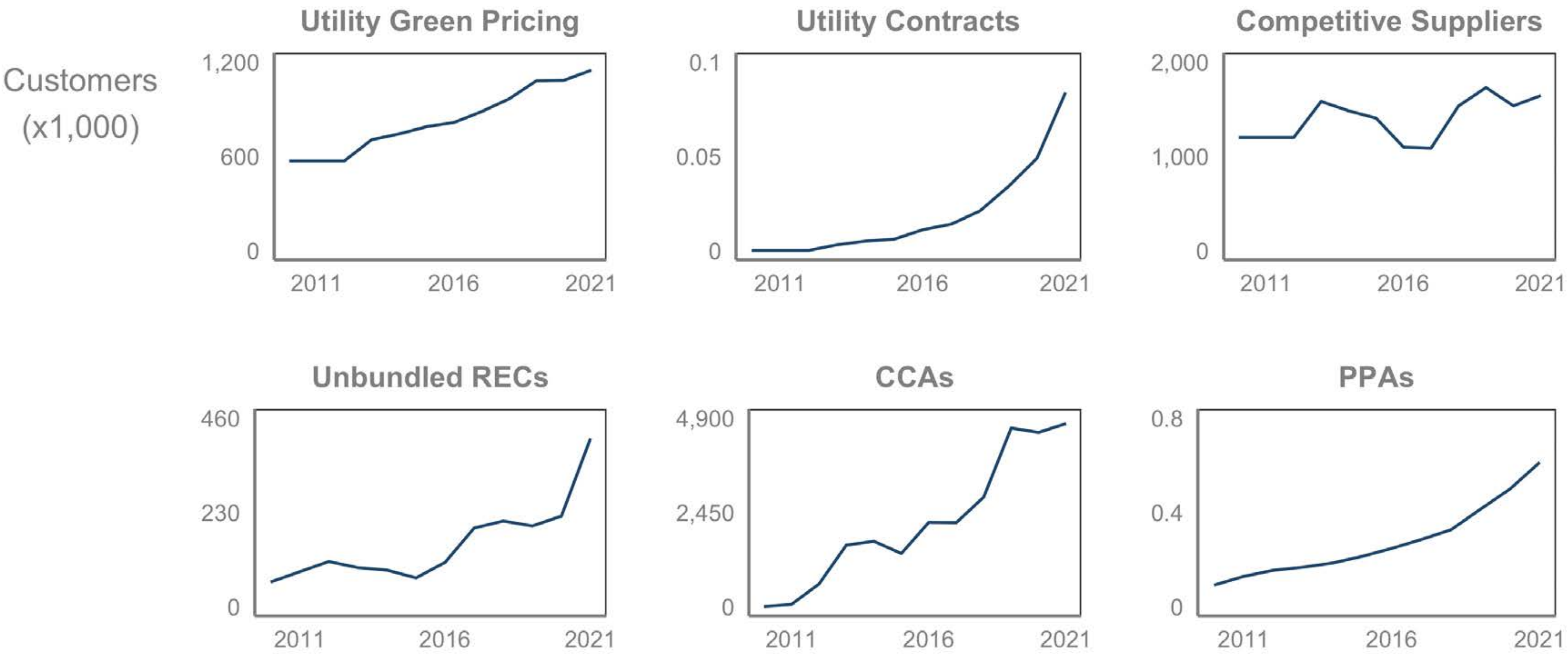




Voluntary Sales Continue to Increase



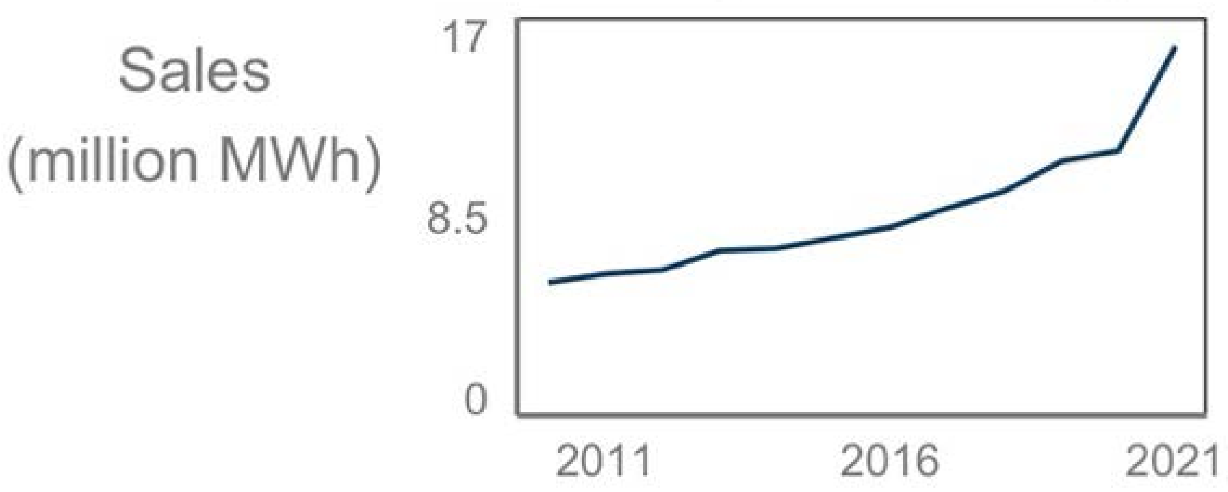
Voluntary Customers Grew in Most Market Segments

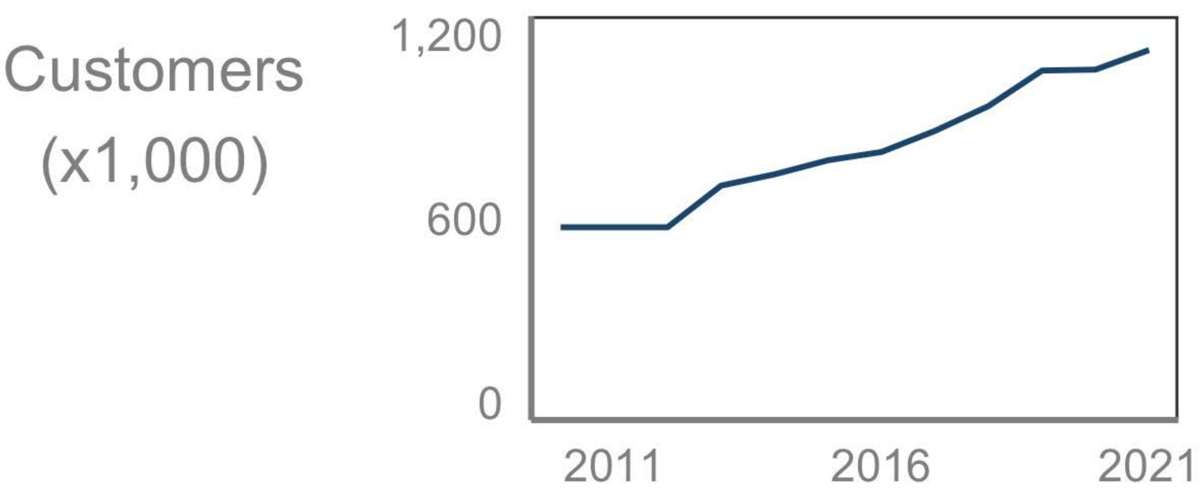


Utility Green Pricing Trends

About **1.2 million customers** procured about **16.5 million MWh** of voluntary green power through utility green pricing programs in 2021.

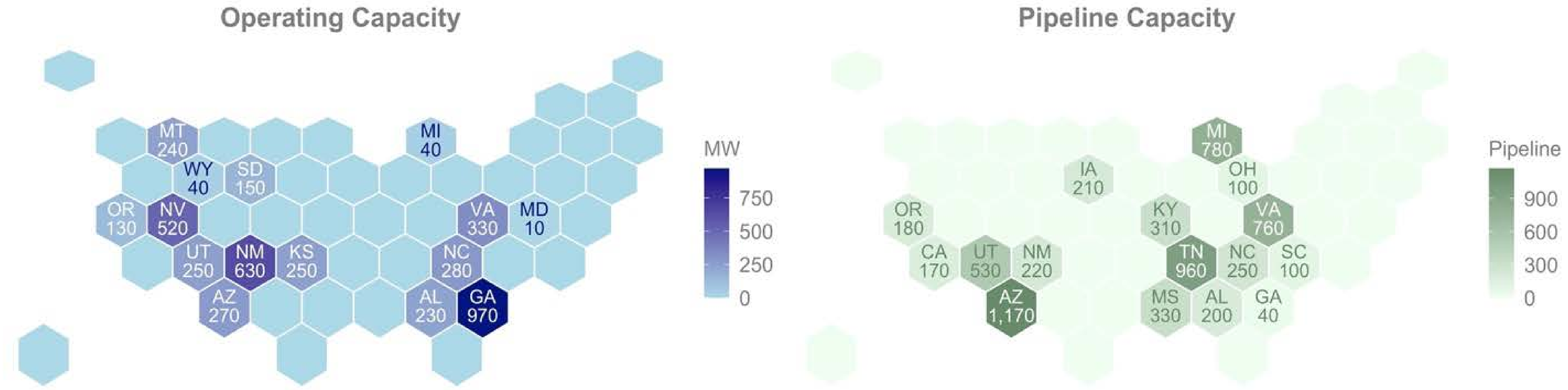
The market recovered after a relatively flat year in 2021, increasing sales by 42% (‘20-’21) compared to only 5% (’19-’20). While sales increased 42% (’20-’21), customers only increased by 6%, indicating that larger per-customer volumes are driving sales growth.





Large Pipelines of Utility Contracts Exist Across the Country

In 2021, utility contracts served 11.4 million MWh; nearly the size of the utility green pricing market. Sales increased 46% from 2020 and a substantial share of projects are in the pipeline.

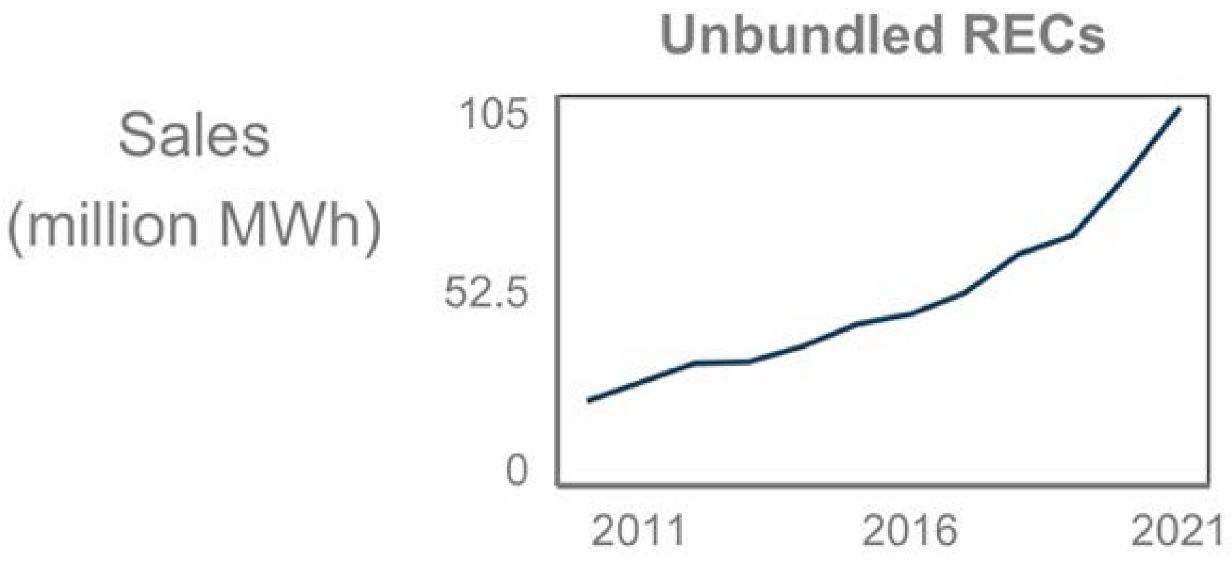


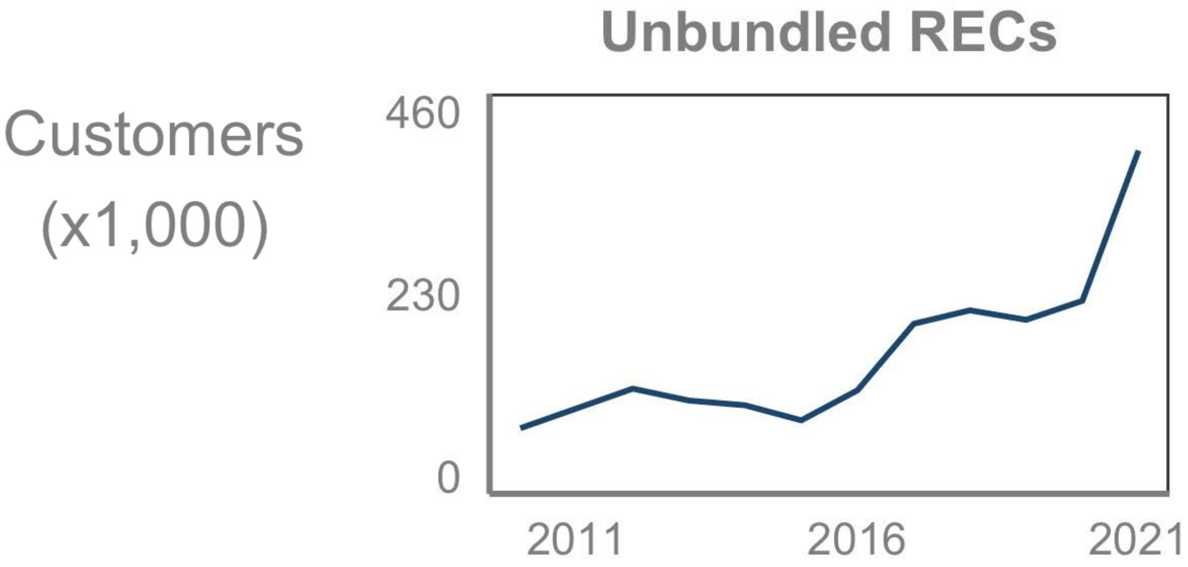
Data compiled by NREL and supplemented by BNEF (2022).

Unbundled RECs

Unbundled RECs represented **44% of total market sales** in 2021. Higher REC prices in 2021 did not translate into slower growth; the market grew 23% from 2020-2021, similar to growth trends in previous years.

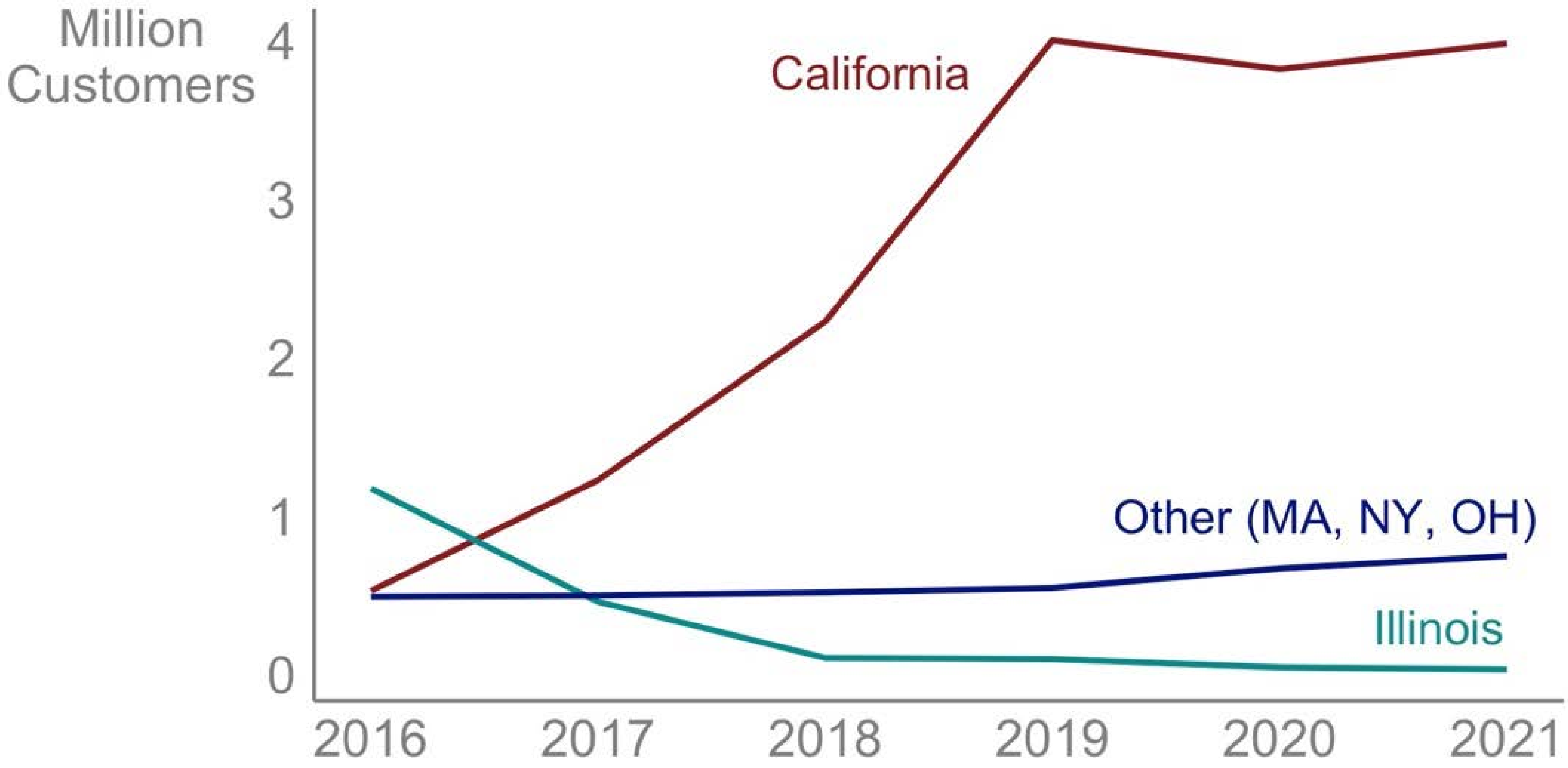
Unbundled REC customers increased sharply in 2021, to more than 400k.





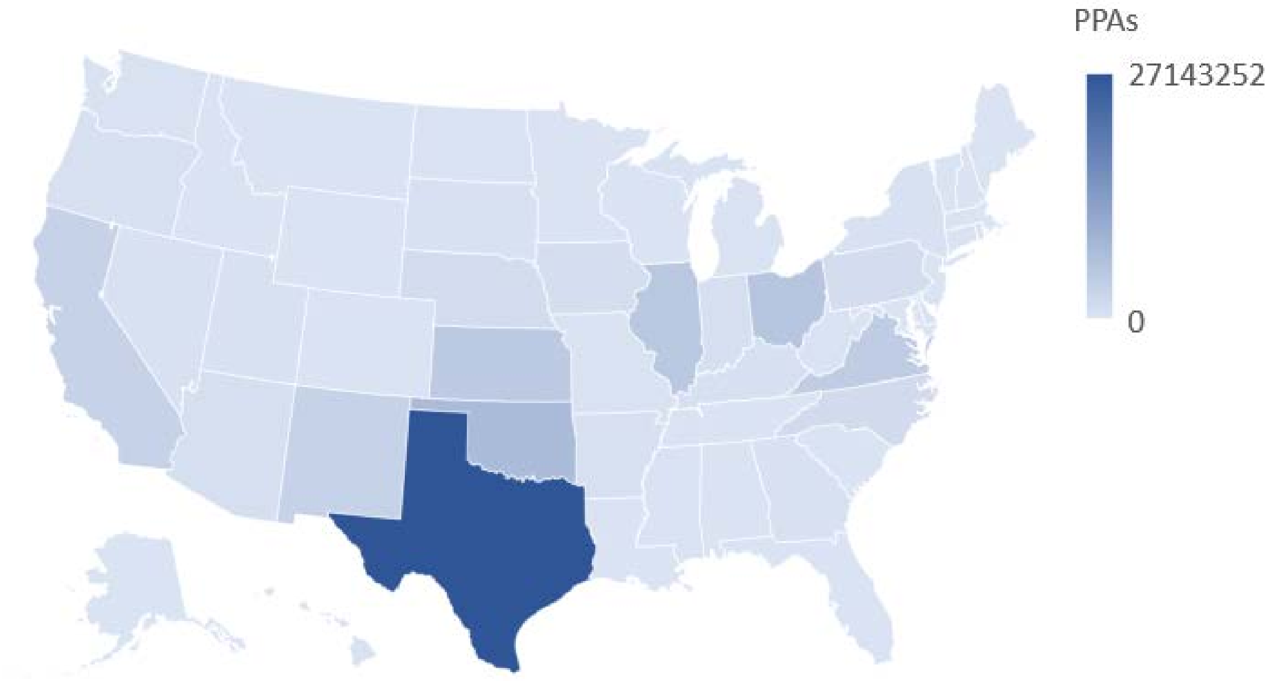
CCA Trends

About **4.8 million customers** procured about **12.8 million MWh** of voluntary green power through CCAs in 2021; largely the same as in 2020.



PPA Trends

- More than **600 offtakers** procured about **73.0 million MWh** of voluntary green power through PPAs in 2021.
- These figures include only PPA sales where we estimate that the purchaser has retained the RECs.
- Sales grew by around 23% from 2020 to 2021.
- Texas continues to dominate PPA supply, serving



2021 Summary Trends

- Market sales grew 22% and customers grew by 8% in 2021
- Unbundled REC purchasing represents 44% of market sales and continues to grow, despite higher prices than in previous years
- Community choice aggregation (CCA), which greatly expanded residential customer access, has flatlined in California, the leading CCA market
- Utility renewable contract (“green tariffs”) supply is similar in scale to green pricing, but far behind the power purchase agreement supply.

Other 2021 Trends

- **Purchasing**: Executive Order for federal purchasing: 100% carbon pollution-free electricity by 2030; 50% of that on a 24/7 basis
- **Disclosure**: SEC proposed climate-related disclosure requirements for public companies
- **Impact**: Increasing interest in purchasing with *social* impacts
- **New Focus Areas**: Renewable fuels (renewable natural gas, green hydrogen), international procurement, supply chain products

Additional NREL Resources

Find additional resources, including our data files, at the NREL Voluntary Green Power Procurement landing page:

www.nrel.gov/analysis/green-power.html

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