

Your community. Your co-op. Your choice.

Demand Response in Action

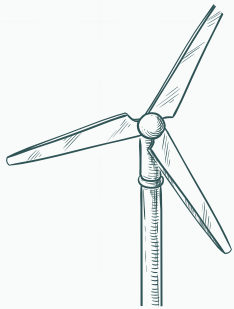
Bryan Hannegan – June 12, 2023





Holy Cross Energy is leading the responsible transition to a clean energy future

Holy Cross Energy (HCE) provides safe, reliable, affordable and sustainable energy and services that improve the quality of life for our members and their communities.



In 2022, 50% of our power supply came from wind, solar, biomass and hydroelectric power, as well as coal mine methane recovery.

Founded in 1939, we serve more than 46,000 members in scenic Western Colorado with:

**265 MW
Peak
Demand**

**3,100 Miles
Distribution
Lines**

**120 Miles
Transmission
Lines**

**165
Employees**



Our Journey to 100% Clean Energy

These actions will allow HCE to achieve its vision of:

- 100% carbon-free power supply by 2030
- Carbon-neutral or better across the enterprise by 2035

in a way that ***does not sacrifice affordability, safety, or reliability*** for the sake of sustainability.



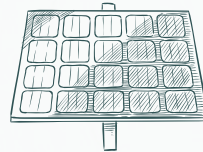
Energy Efficiency

Obtain an additional 0.25% per year in reduction of electric sales from existing uses.



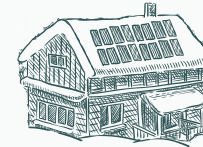
Cleaner Wholesale Power

Incorporate new, clean, dispatchable resources into HCE's power supply mix.



Local Clean Energy Resources

Continue our existing agreements for energy from local biomass, hydro, solar, & coal mine methane projects



Distributed Energy Resources

Support installation of at least 4 MW per year of new rooftop solar systems.



Smart Electrification

Encourage the expanded use of electricity for transportation, building heating and cooling, and industrial processes.



HCE is Supporting Renewable Energy

New Resources Developed or Under Contract:

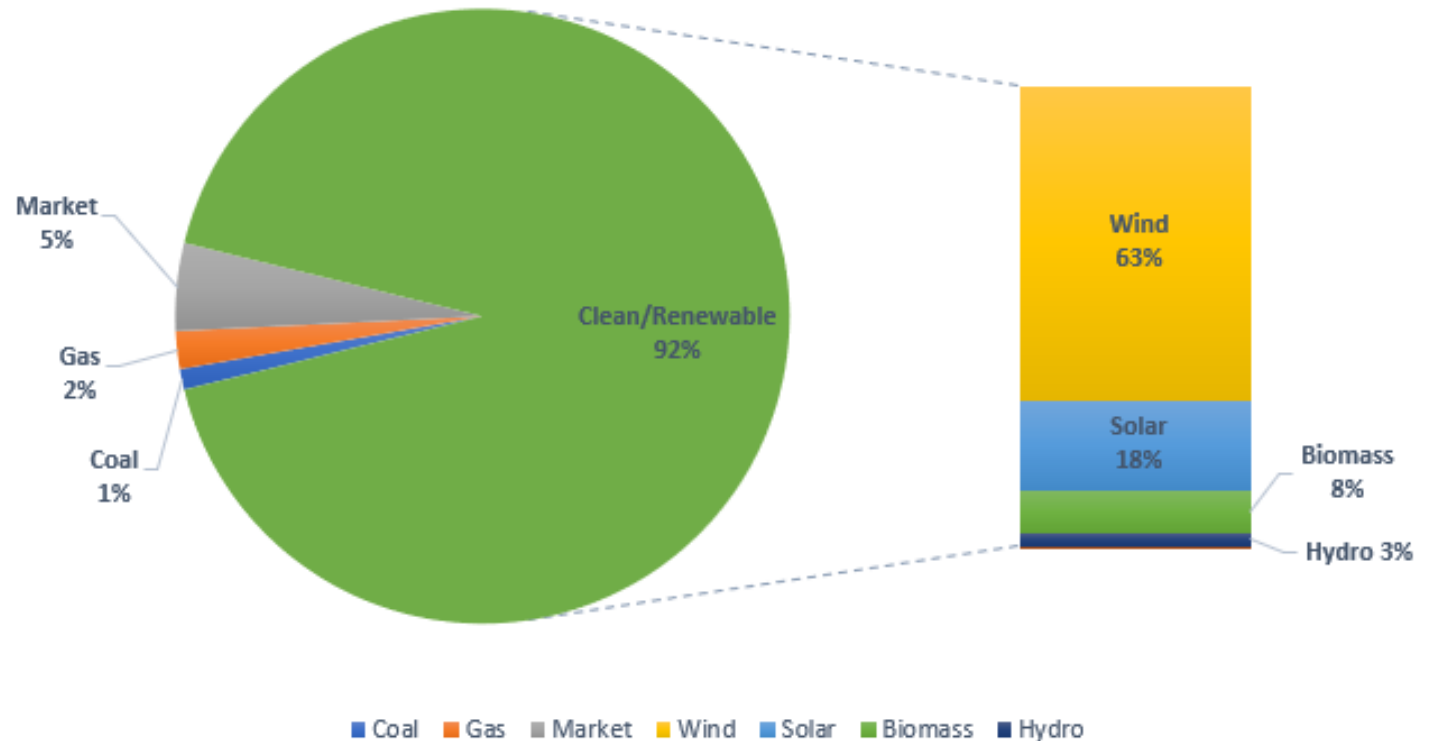
Eastern Colorado

- 150 MW wind
- 30 MW solar

HCE Service Area

- 5 MW solar
- 4.5 MW hydro
- 4.5 MW/15 MWh solar+storage
- 10 MW/20 MWh solar+storage
- 10 MW/20 MWh solar+storage

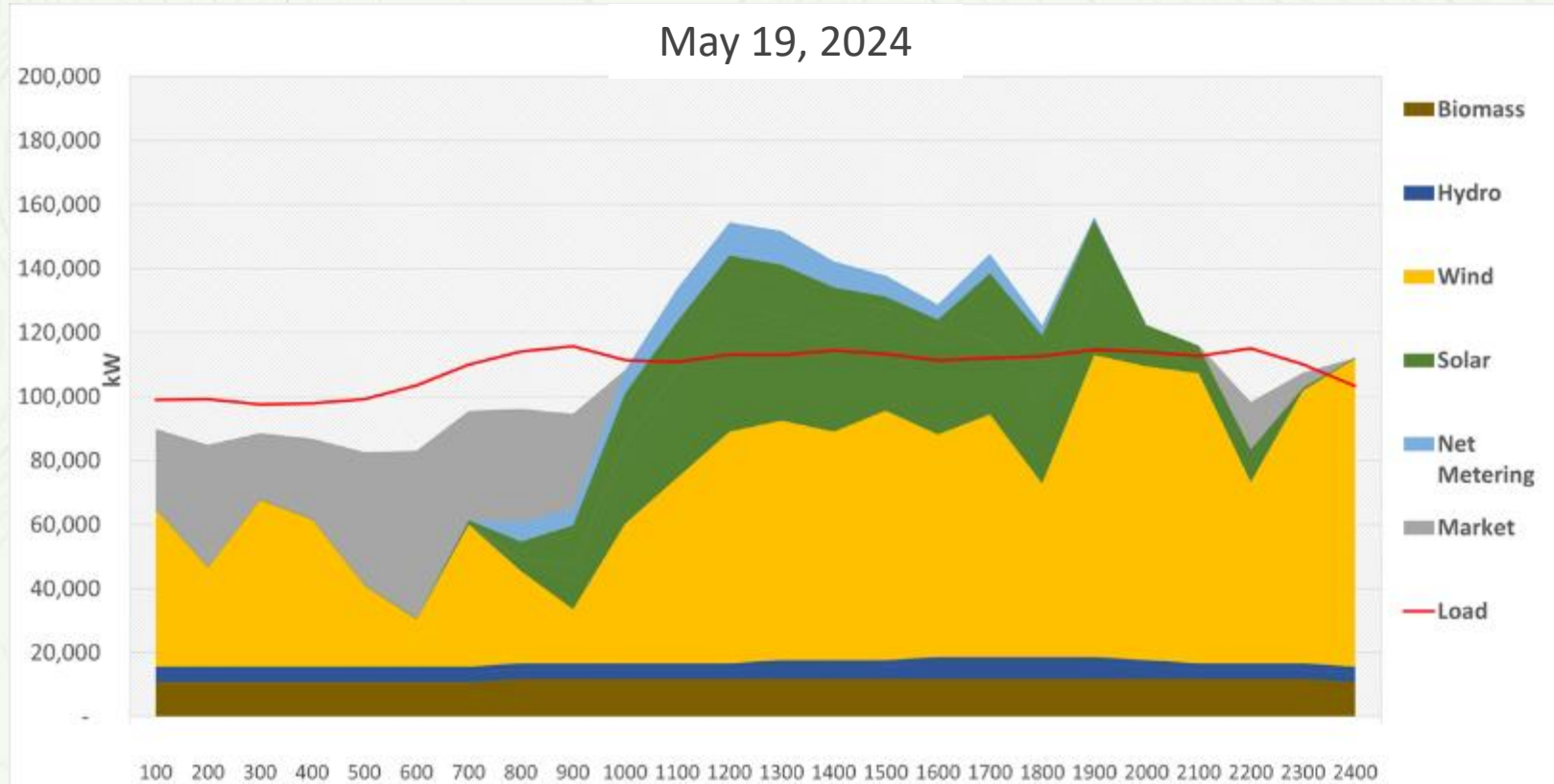
2024 Projected Energy by Fuel





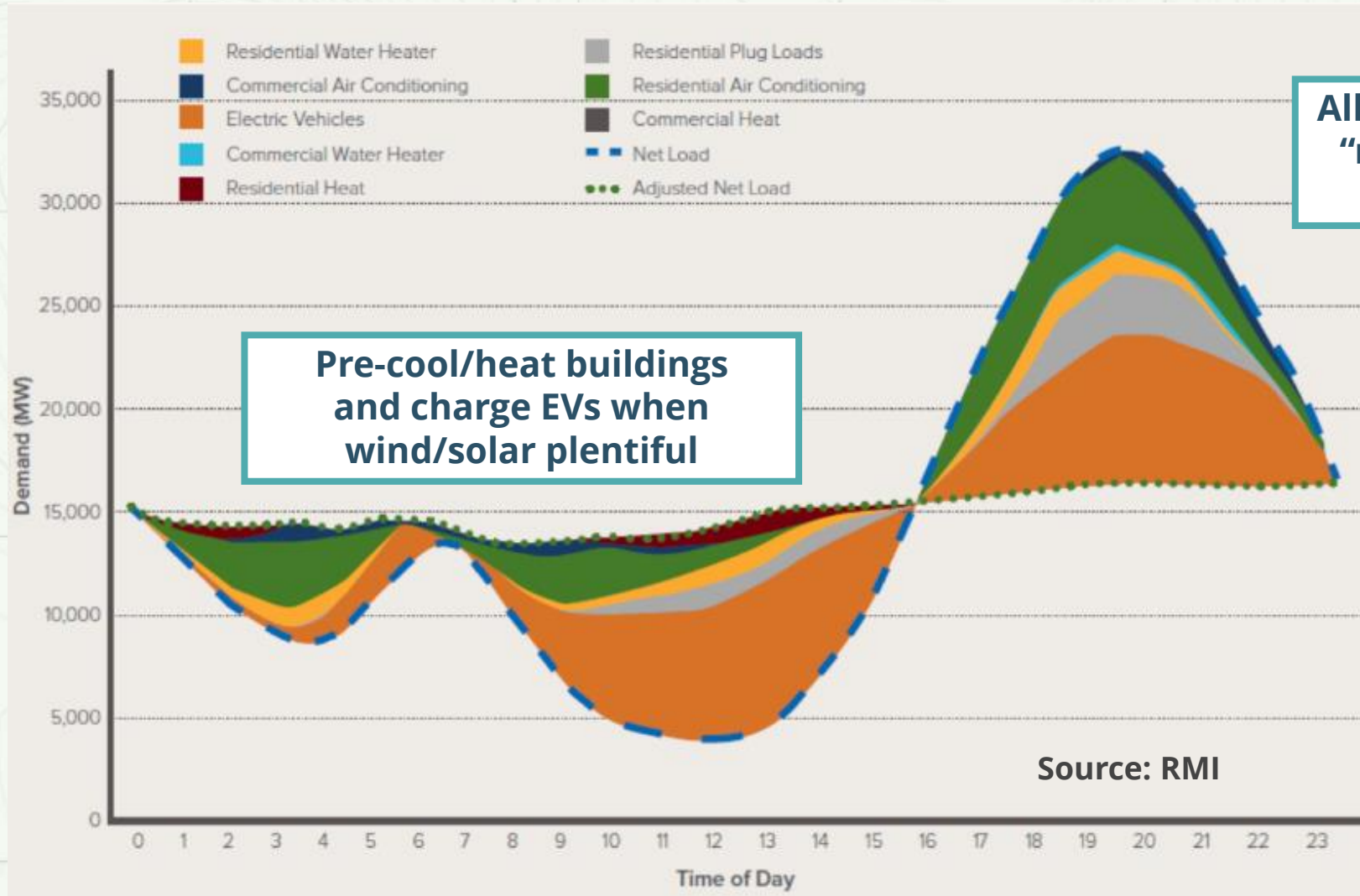
Implications of High Renewables

- At high % of renewables, the variability of wind and solar is often mismatched with electric demand
- This means higher costs to store or curtail the excess energy during midday
- New renewables need to be paired with storage to avoid making this challenge worse





DERs Provide Needed Flexibility





HCE Flexibility Programs

- **Peak Time Payback (PTP)**, where members can receive bill credits in exchange for voluntarily reducing their electricity consumption during times of high system consumption (> 2500 members enrolled)
- **Time of Use (TOU) Rates**, where members can voluntarily sign up for an electric rate option that charges less for electricity consumed in “off-peak” hours compared to “on-peak” hours (4-9 pm daily)
- **Power+**, where members can earn a monthly Distribution Flexibility credit in exchange for allowing HCE to utilize their battery energy storage system for demand response, within certain limits



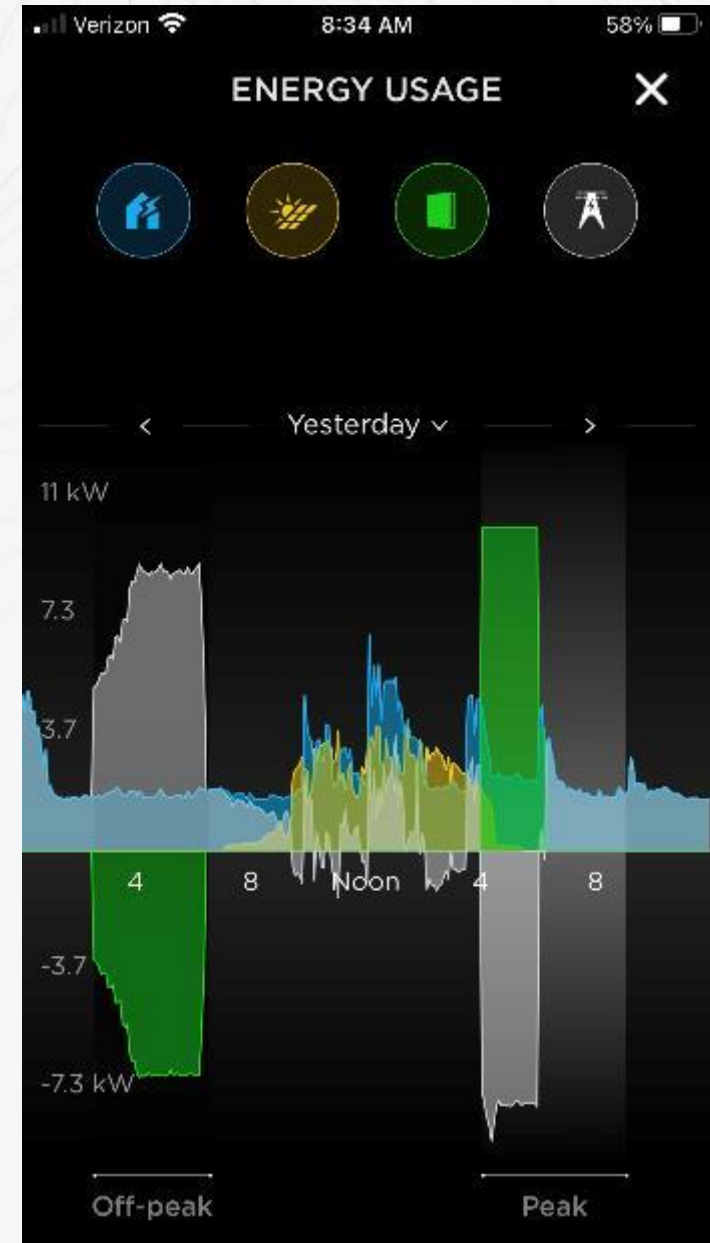
“Power+” Energy Storage



2.2 MW of “behind the meter” battery storage since 2021

Zero-down, interest free lease repaid on utility bill
(plus \$10/kW-month credit from HCE)

Target consumer cost: \$40-50/month for 10 years





“Electrify Your Ride” EV Programs

FREE L2 EV chargers to every residential (limit 2) or commercial (limit 4) member

DER Service Agreement allows payments over time for up-front installation costs

Community DC Fast Charging supported by \$150k upgrades and engineering support

Transit and school buses supported with TOU rates, no demand charge, on-site solar



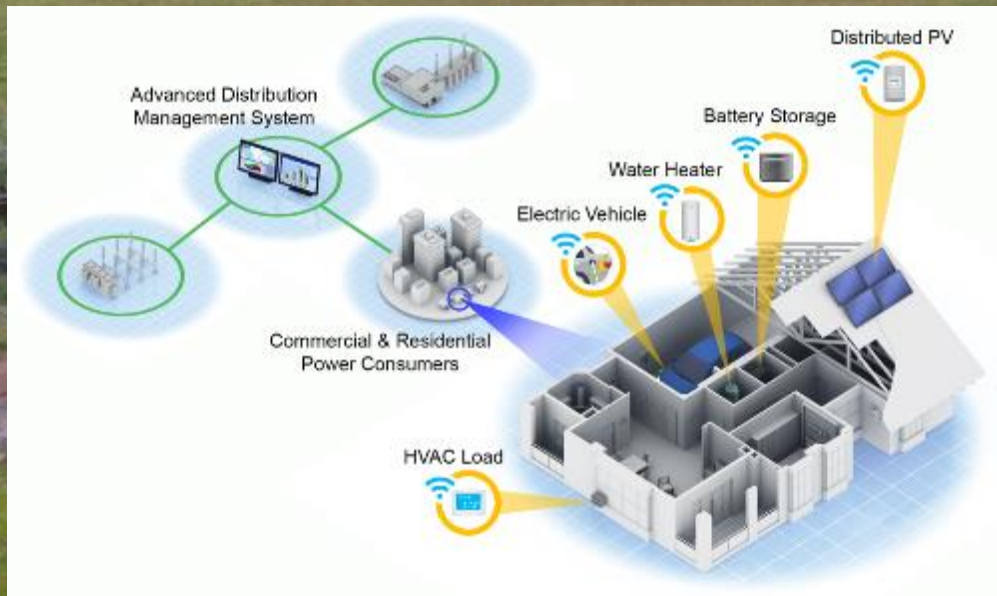


“Basalt Vista” Affordable Housing Project

- Habitat for Humanity, Pitkin County, Basalt School District
- 27 homes for teachers and local service workers
- Designed net-zero energy with *all electric* construction
- Adjacent to Lake Christine Fire affected area
- Cost-shared partnership with NREL and DOE Office of Electricity
- Demonstrate value of DERs to consumer *and* grid

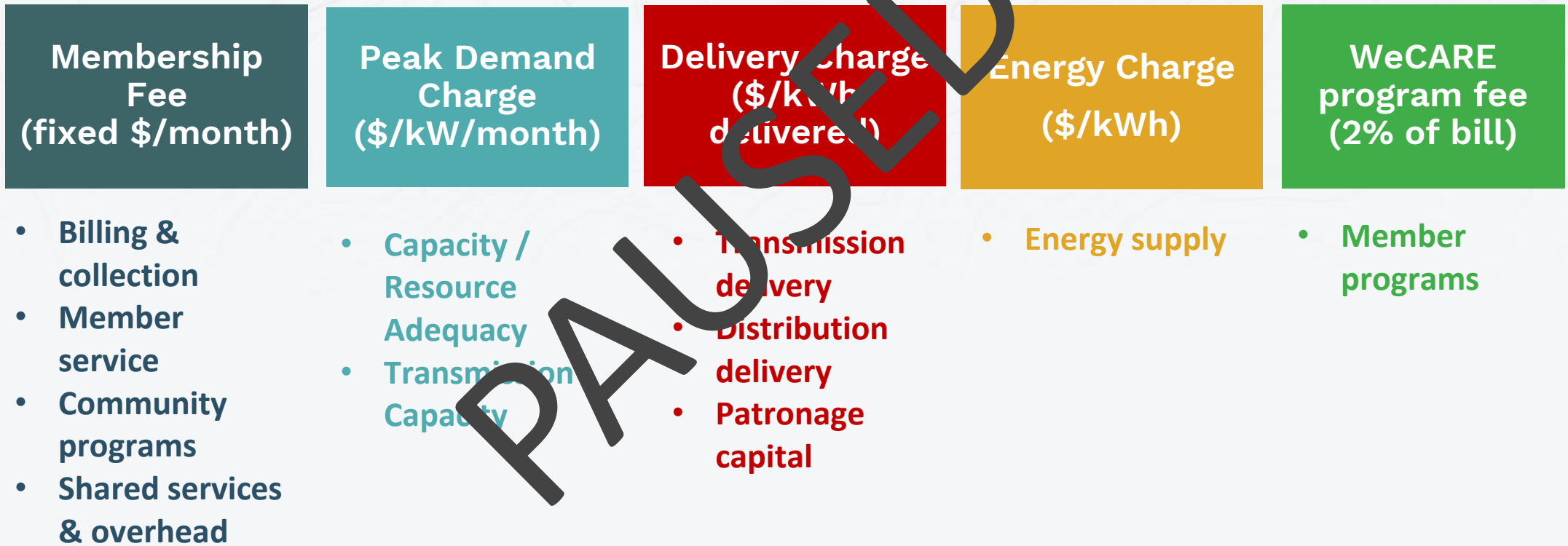
Four homes with controllable loads

- 8kW rooftop solar PV
- Battery storage
- L2 EV charging
- Heat pump water heater
- Air source heat pump





Electric Rate Restructuring



PAUSED

Allocates costs of service more equitably across all cooperative members
Enables increased net metering caps, more demand response, dynamic price options



Join us on our Clean Energy Journey

For more information –

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