




The Future of Electric Water Heating

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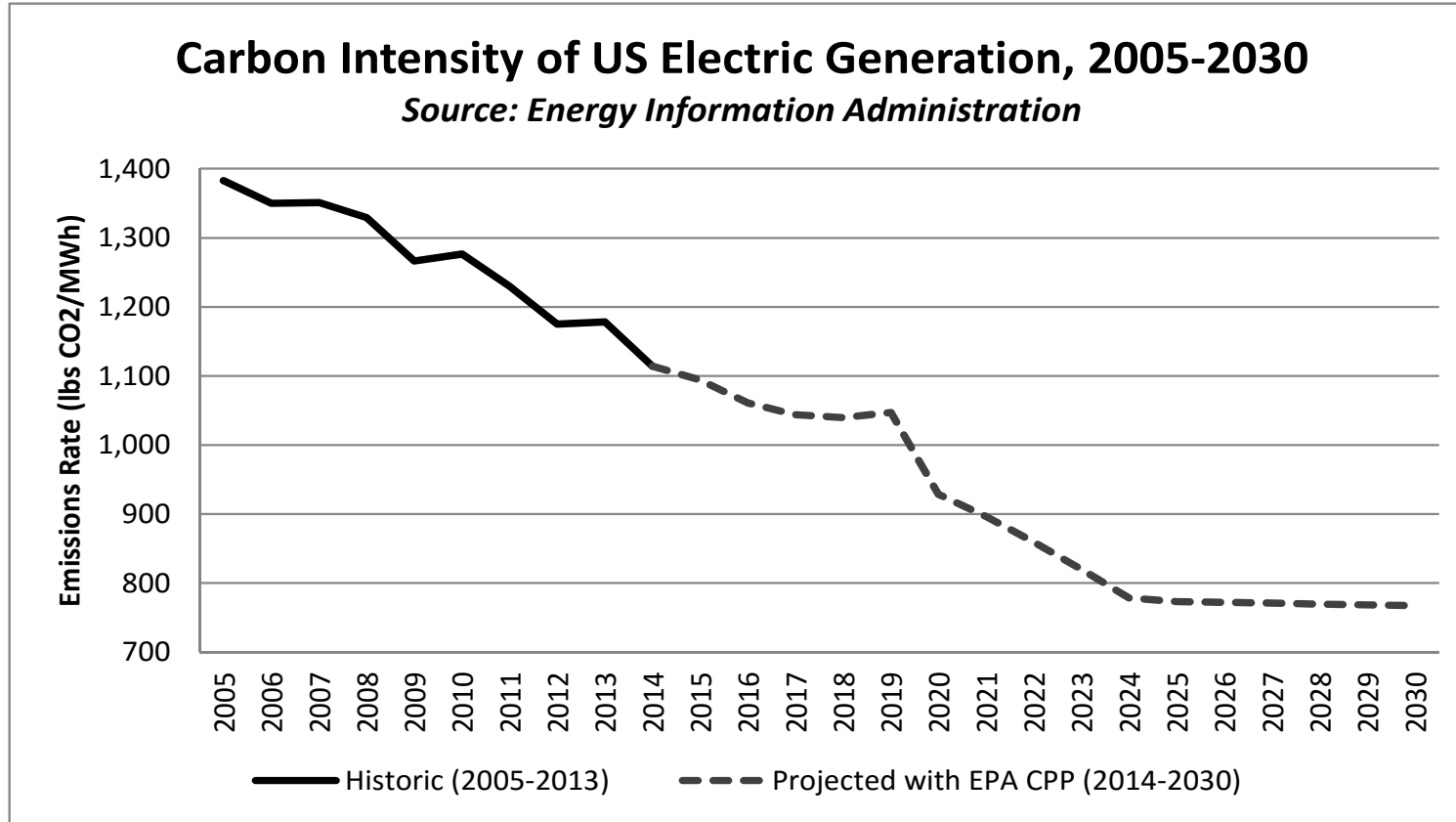
NRECA

A Touchstone Energy® Cooperative 

Greenhouse Gas Emission Reduction Goals

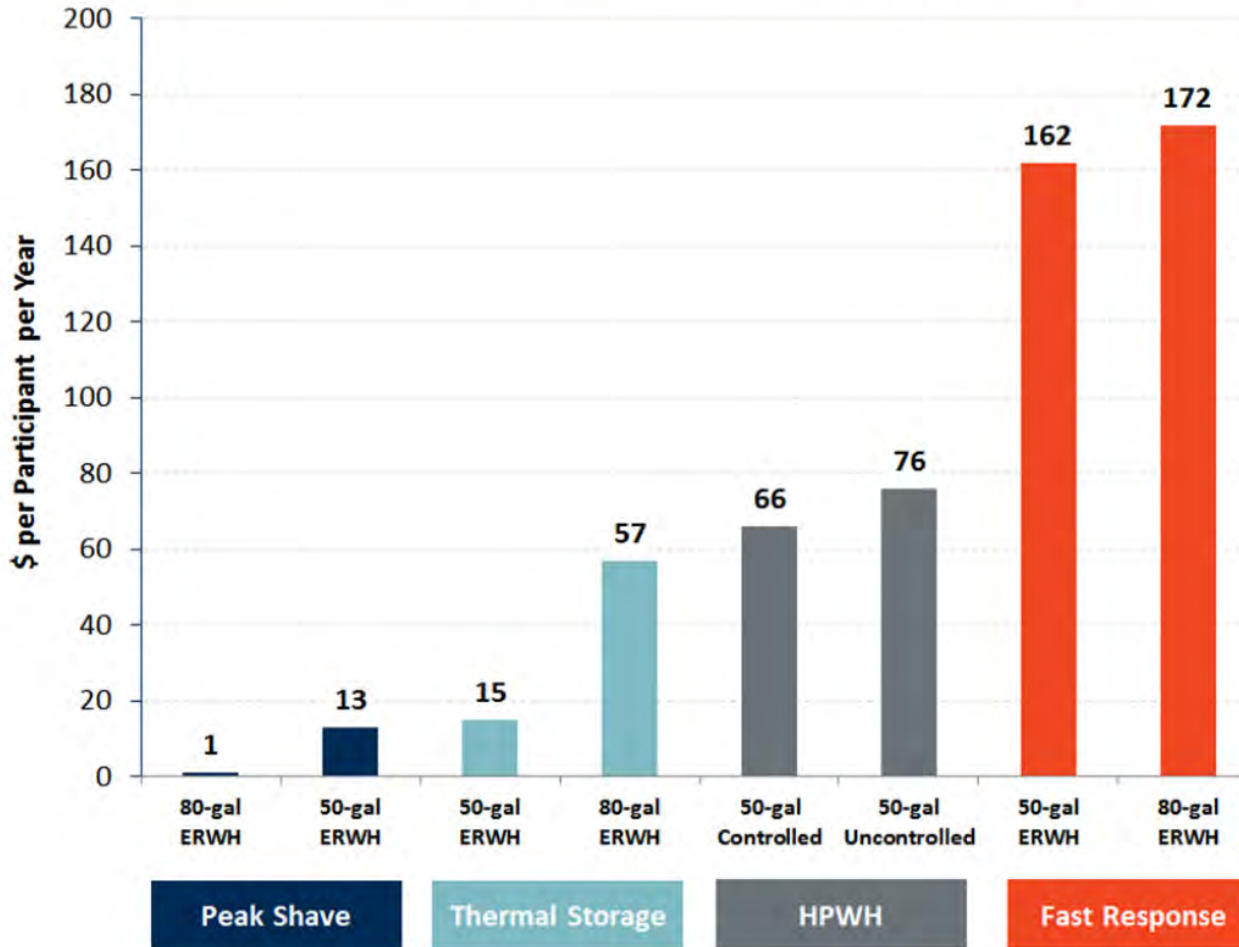
- Established on local, state, national, and international levels
- **U.S. Goal:** Reduce greenhouse gas emissions in the range of 17% below 2005 levels by 2020
- EPA Clean Power Plan (111d) Goal is 32% for our the electric sector by 2030.
- **Minnesota's Goal:** reduce emissions 30% below 2005 emissions by 2025 and 80% below 2005 emissions by 2050

Carbon Intensity of US Electric Generation 2005-2030



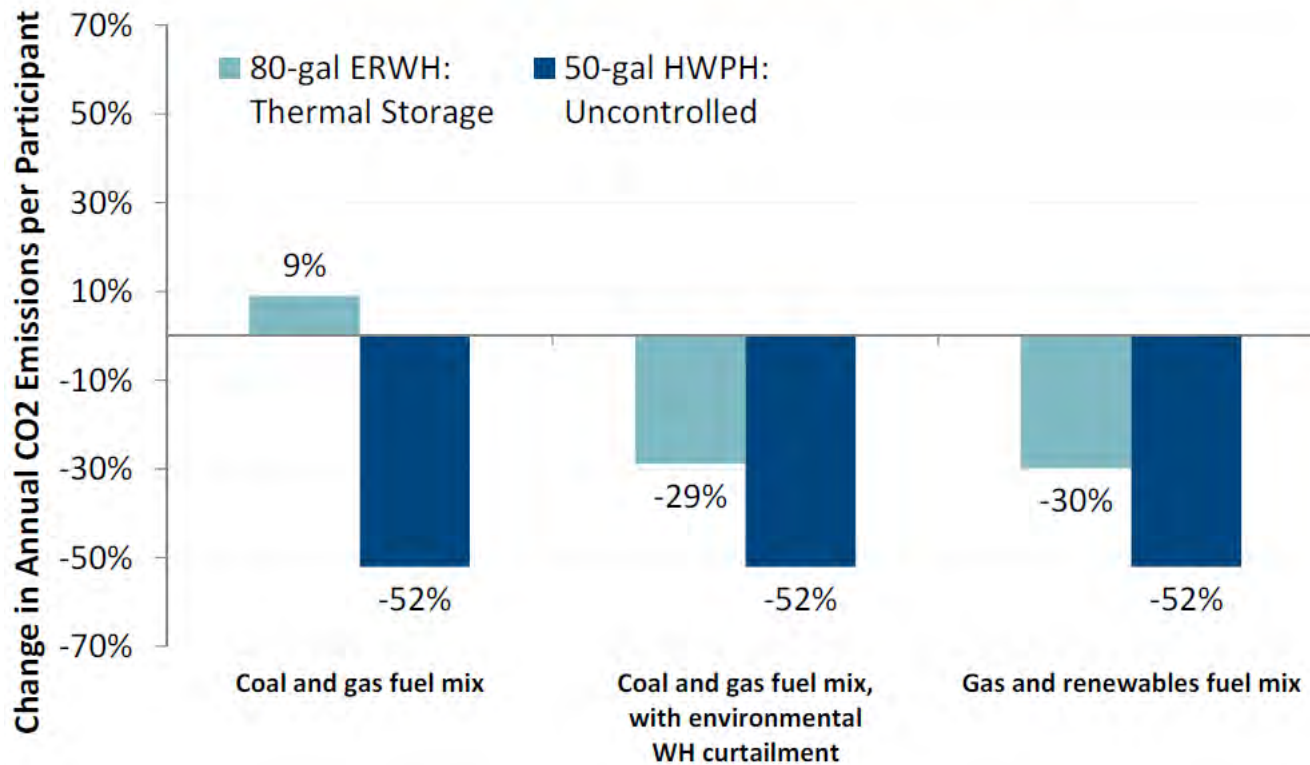
Brattle Report – Lots of Options to Save \$

Figure ES-1: Annualized Net Benefits of Water Heating Strategies (PJM 2014)




Potential for CO₂ Reductions Load Control

Figure ES-2: Change in Water Heater CO₂ Emissions
(Relative to Baseline Uncontrolled 50-gallon ERWH)




Time to Implement! – The “Community Storage Initiative”

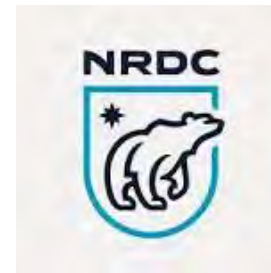


Five blue water droplets are arranged in a horizontal row above the text.

Your electric storage water heater is a thermal battery that can help integrate renewable energy into the grid.



America's Electric Cooperatives

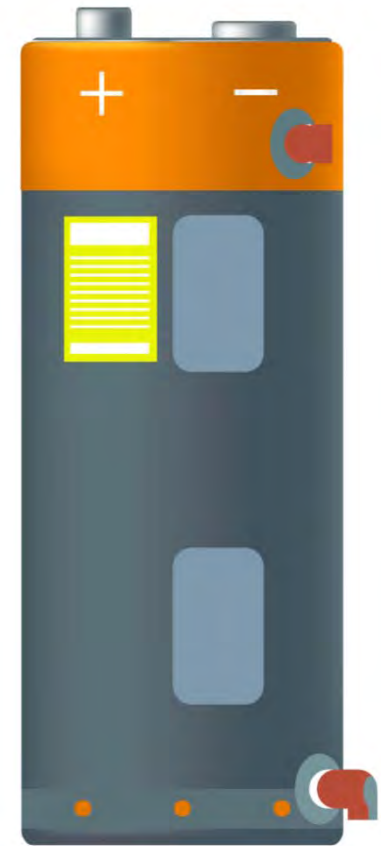


More to come?....



The “Community Storage” Concept

Storage Technology	Utility	Incentive
<i>Electric Water Heater</i>	<i>Steele-Waseca</i>	<i>Free water heater, discounted community solar panels</i>
<i>Electric Vehicle</i>	<i>Great River Energy</i>	<i>Free wind power upgrade, discounted charging station</i>
<i>Tesla Powerwall Battery</i>	<i>Green Mountain Power</i>	<i>Discounted energy services, Powerwall battery and/or installation</i>



Community Storage Initiative Founding Supporters



Supporting Community Storage Initiative

COMMUNITY STORAGE INITIATIVE

The co-founders of the community storage initiative ask for your support:

- › Show your support for the initiative through endorsement via a joint press release in April
- › Promote an "above the baseline" approach to electric water heating, electric vehicle charging, and residential battery use marketed as "Community Storage"
- › Share your business model and best practices around "Community Storage"

FOR MORE INFO CONTACT: Keith Dennis (NRECA), Keith.Dennis@nreca.coop or Steve Koep (PLMA): skoep@vaughncorp.com or Robin Roy (NRDC): rroy@nrdc.org



Supporting Community Storage Initiative

COMMUNITY STORAGE INITIATIVE

We ask you to follow the principles of the initiative:

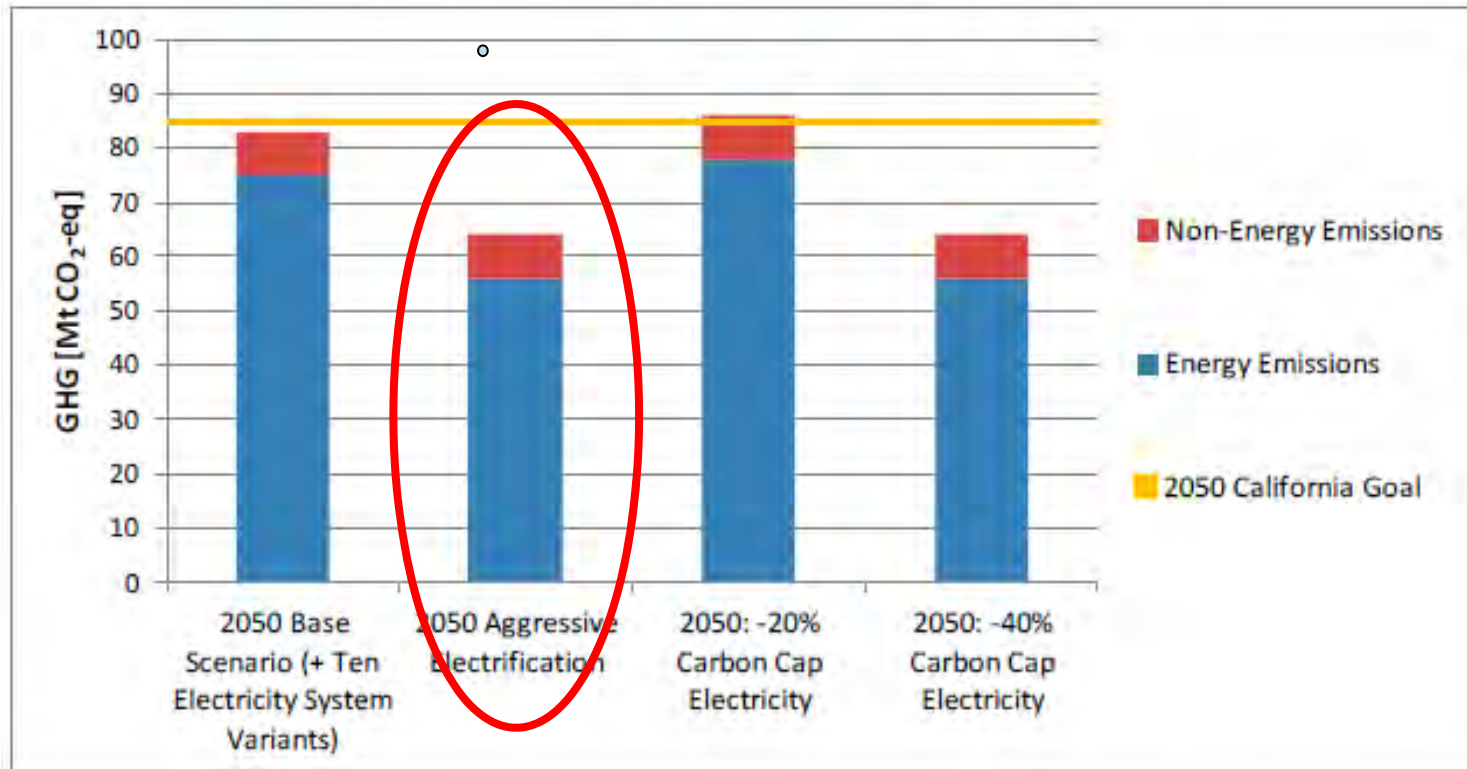
1. Voluntary Participation (by the utility, home, business or individual)
2. Education & Training (information resources, program templates, quick-start guides, etc.)
3. Market Acceptance (locally, regionally and nationally)
4. Economic Equity (shared investments/shared benefits, multi-sided win-win)
5. Renewables Integration & Environmental Stewardship
6. Community Vitality (Community is the key!)

FOR MORE INFORMATION GO TO: communitystorageinitiative.com



“Beneficial Electrification” to Meet CO₂ Goal

Figure ES.1: Overall GHG Emissions for All Scenarios



- A highlighted strategy to meet CA's 80% GHG reduction goals is through aggressive electrification.

Electric Water Heating is an Important Part of our Future!

Keith Dennis

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