

# Potential Electric Vehicle Impacts on NPPD Infrastructure Update

NPPD Board of Directors Meeting  
**Strategic Session**  
July 8, 2021

Dave Rich  
Sustainable Energy Manager



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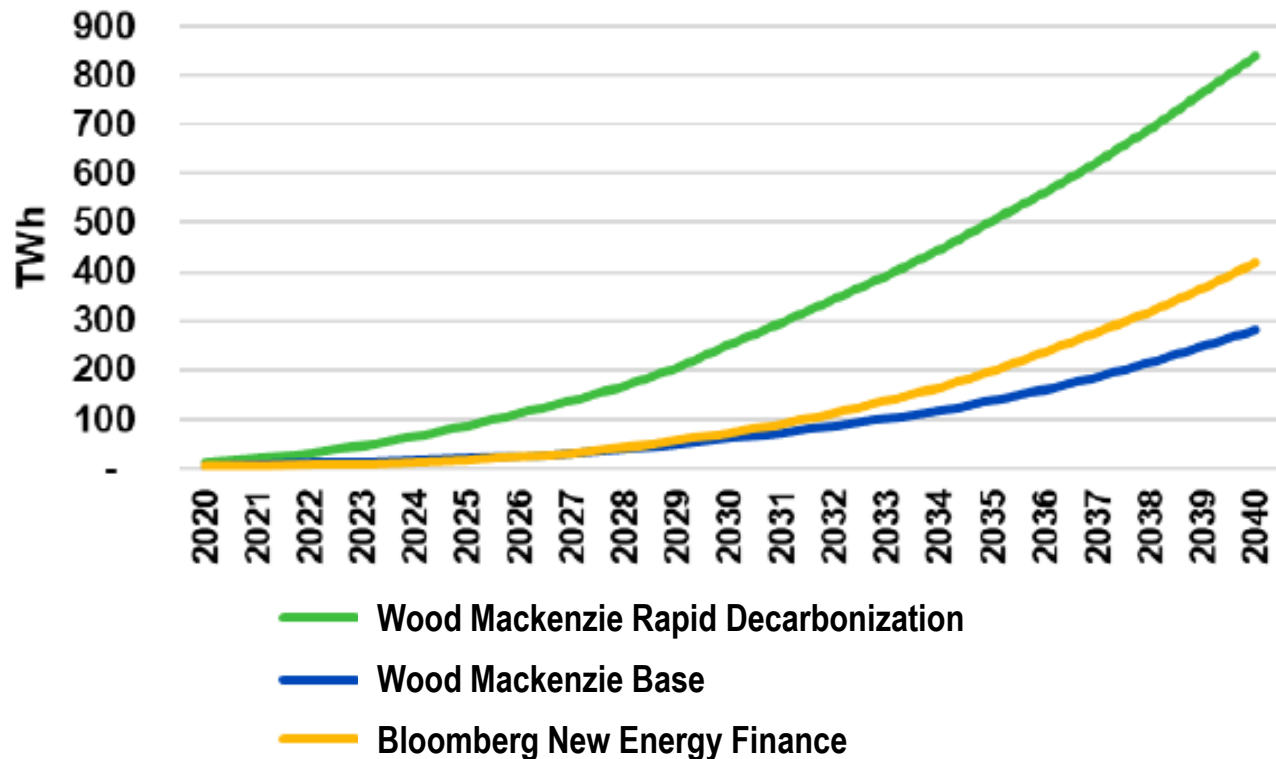
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# Agenda

- **Forecasts for EV growth – U.S.**
  - The Energy Authority (TEA) suggested sources (Wood McKenzie, Platt, & Bloomberg New England Finance)
- **Load growth for NPPD**
  - Sustainable Energy & EPRI
- **Comparison to irrigation and electric heating/AC kWh**
- **Plans for DC Fast Charger installations**

# U.S. EV Energy Forecast





# Forecasts – U.S. EV GWh as % Total Annual GWh National and International Firms

## 2040

- Wood Mackenzie – 6 to 10%
- S & P Global Platts – 7.6%
- Bloomberg NEF – 10%

## 2050

- S & P Global Platts – 12.7%



# Number of EVs in Nebraska / NPPD Service Territory

	2018	2019	2020
State	922	1,217	2,062
NPPD (Service Territory)	212	237	290

*Includes Battery Only (No hybrid)*

*Based on Nebraska Department of Motor Vehicles Registrations*



# EV Energy Use

Car	3 miles/kWh	4,000 kWh/year
Truck	2.2 miles/kWh	5,500 kWh/year

Using 12,000 miles/year

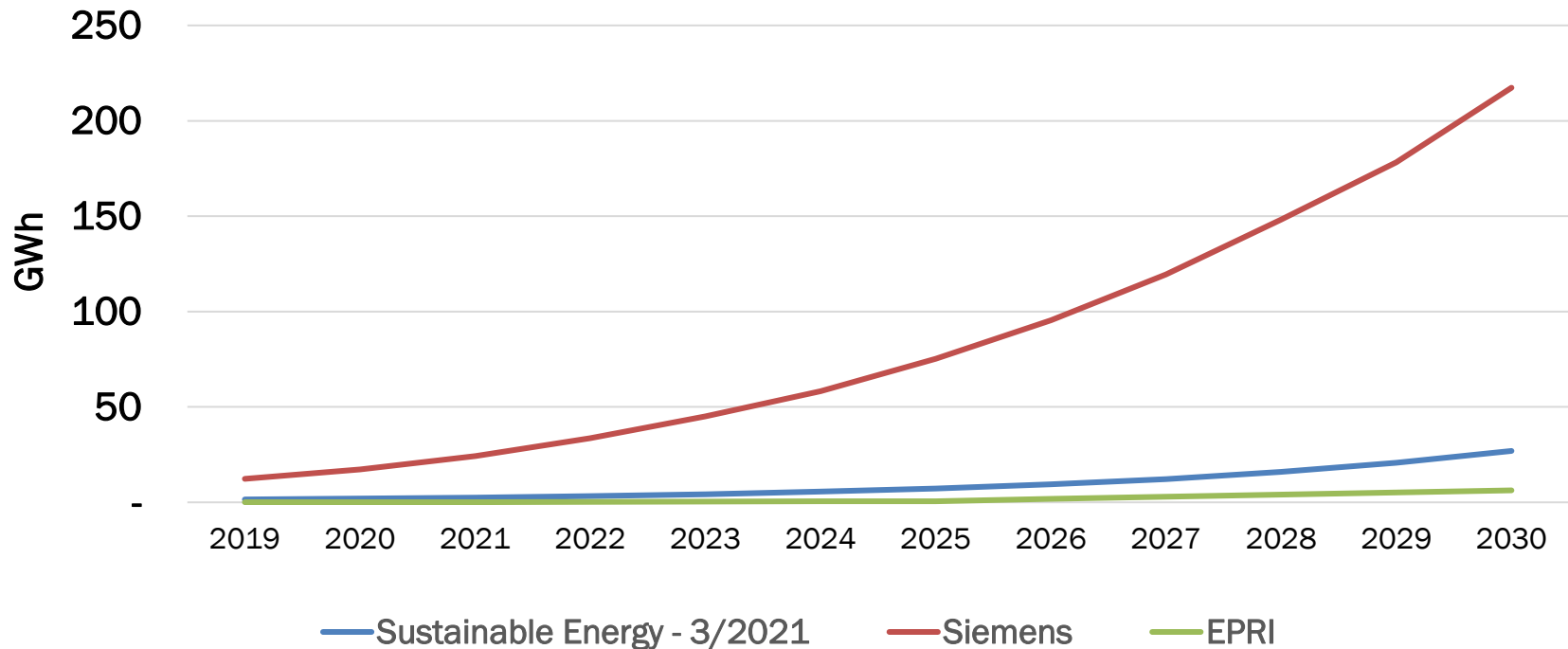
*Compared to:*

**Residential Electric Heat and AC 3,905 kWh/year\***

\*NPPD Planning and Risk estimate

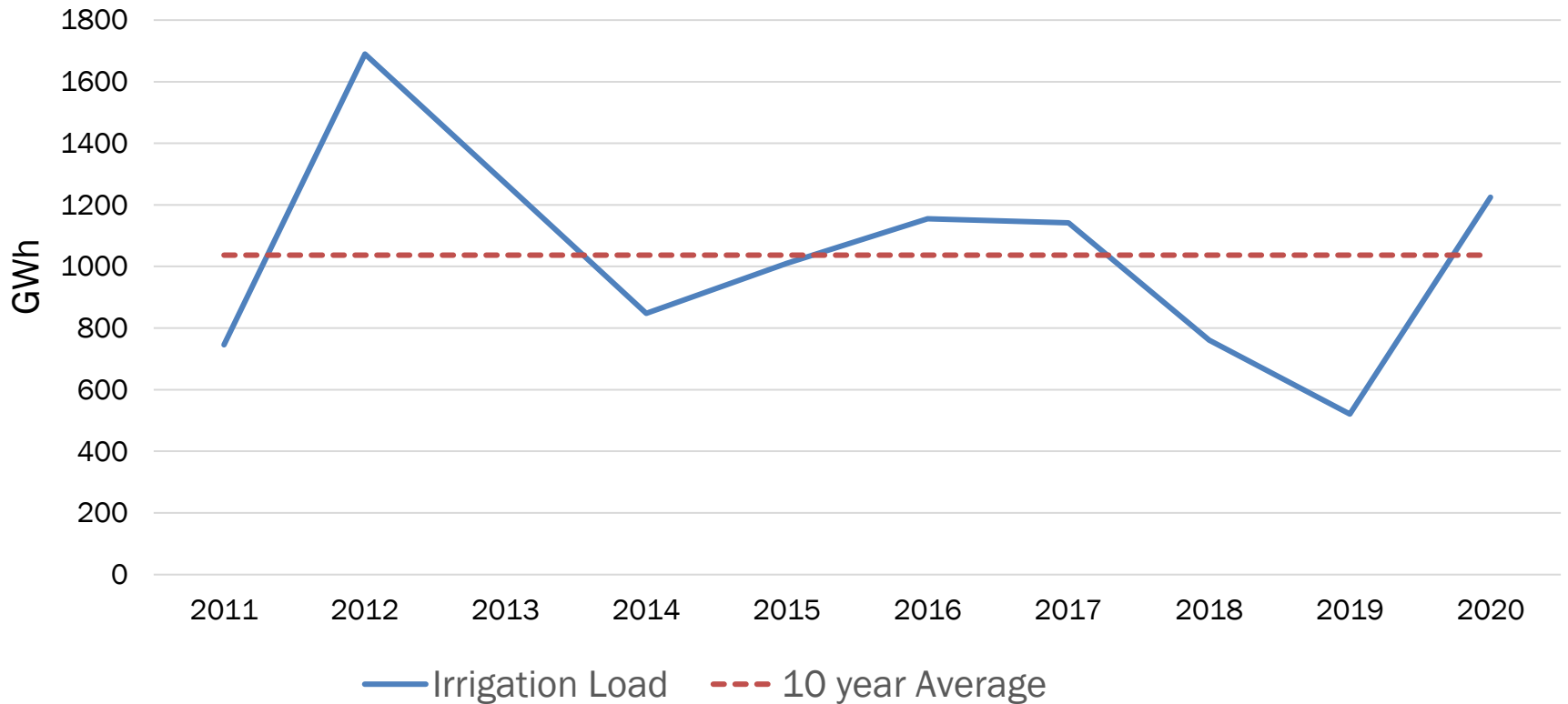


# EV GWh Forecast for NPPD Native Load



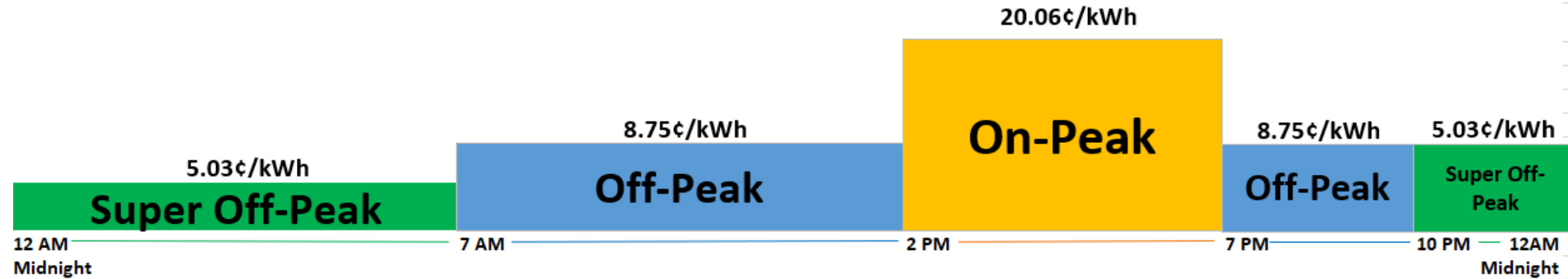


# NPPD Annual Irrigation Load (GWh)

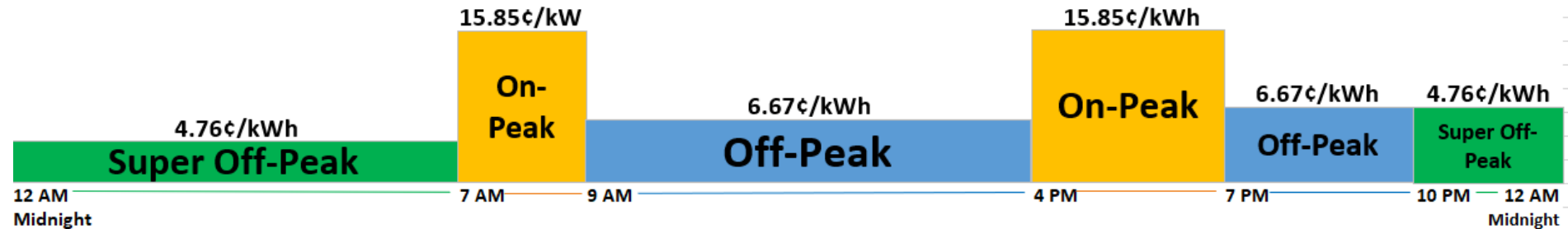


# Time of Use Rates will Encourage Off Peak

## Summer (June - Sept) Weekdays



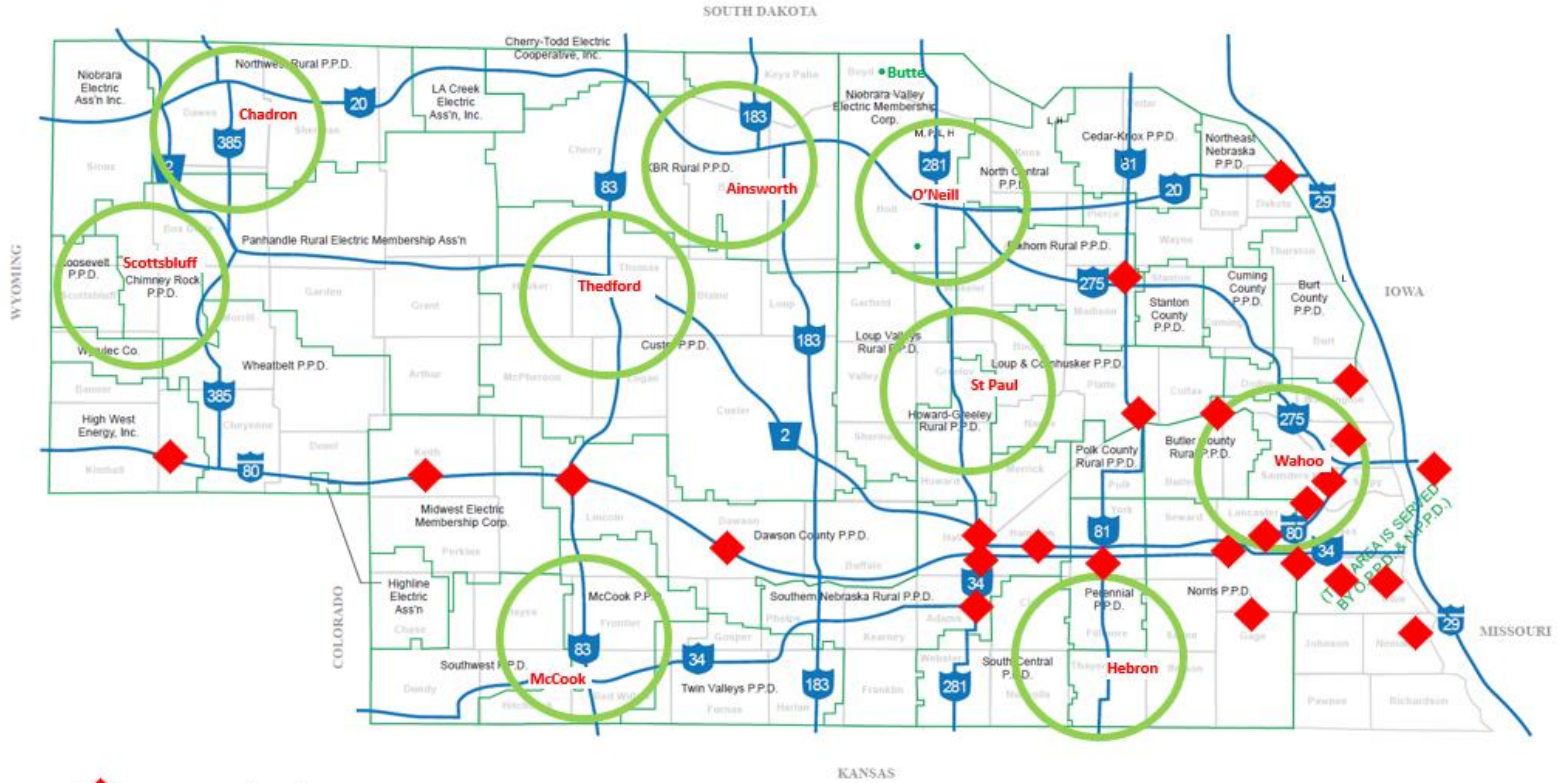
## Winter (Oct - May) Weekdays



NPPD Retail Residential TOU Rate



# DC Fast Charger – Priority Locations



◆ Existing or Planned DCFC

— Based on June 11, 2021 meeting with Wholesale Customers

# Questions?

Stay connected with us.



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