

Managing Winter Loads



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Midwest Energy Solutions Conference 1/28/2026

Global advisory, technology services provider

50+ years in the energy business

Over 1,100 energy experts across North America, UK, India, China, and Ghana

250+ utility energy programs and **\$3.1B** in rebates

Top 60 utilities in North America

Largest implementer of electrification programs in the U.S

15+ DR programs aggregating **smart thermostats, EVs, batteries, water heaters**



Managing Rising Winter Loads



Electrification

- + Building
- + Transportation
- + Industrial



Large Loads

- + Data centers
- + Manufacturing
- + Industrial



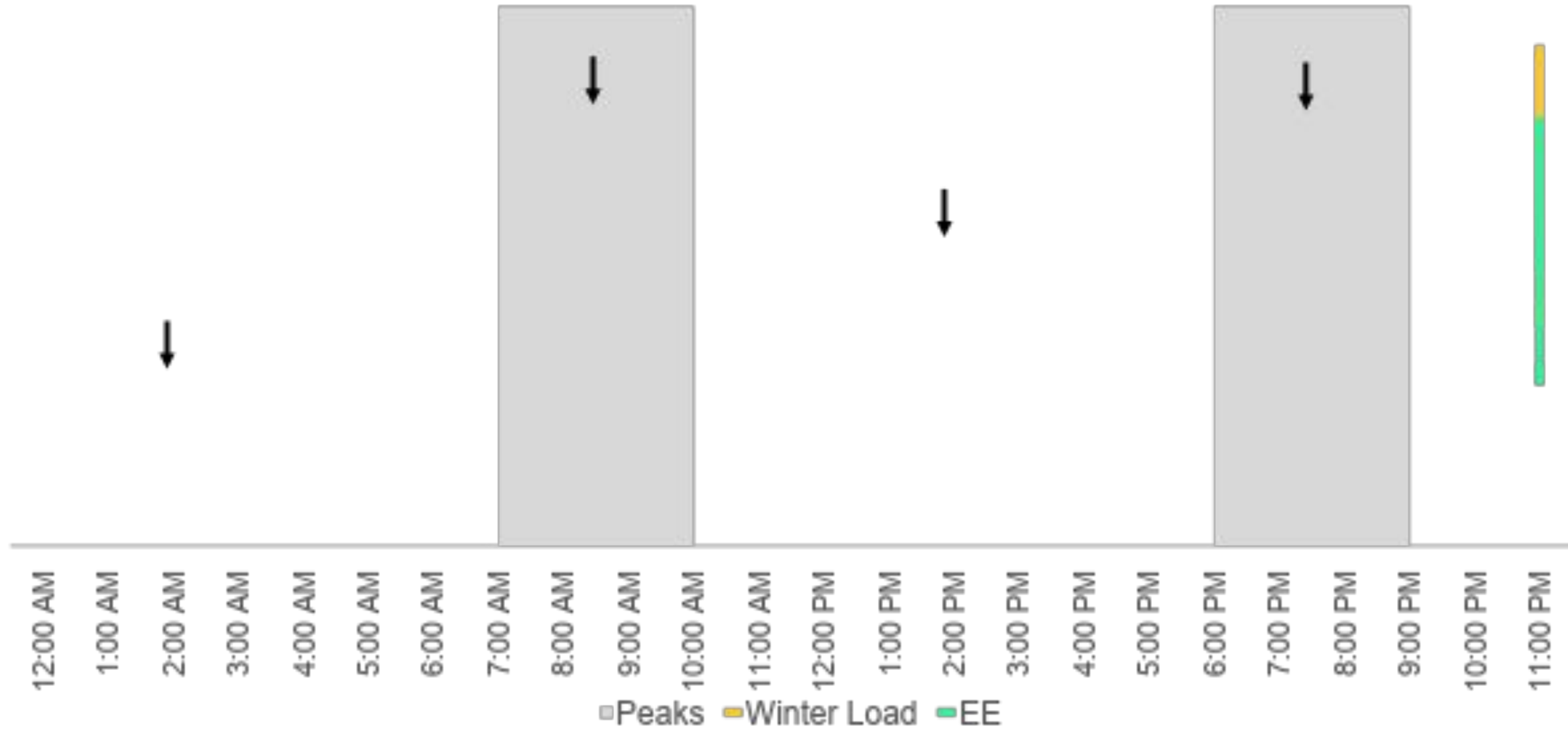
Extreme winter weather

- + Winter storms
- + Arctic events

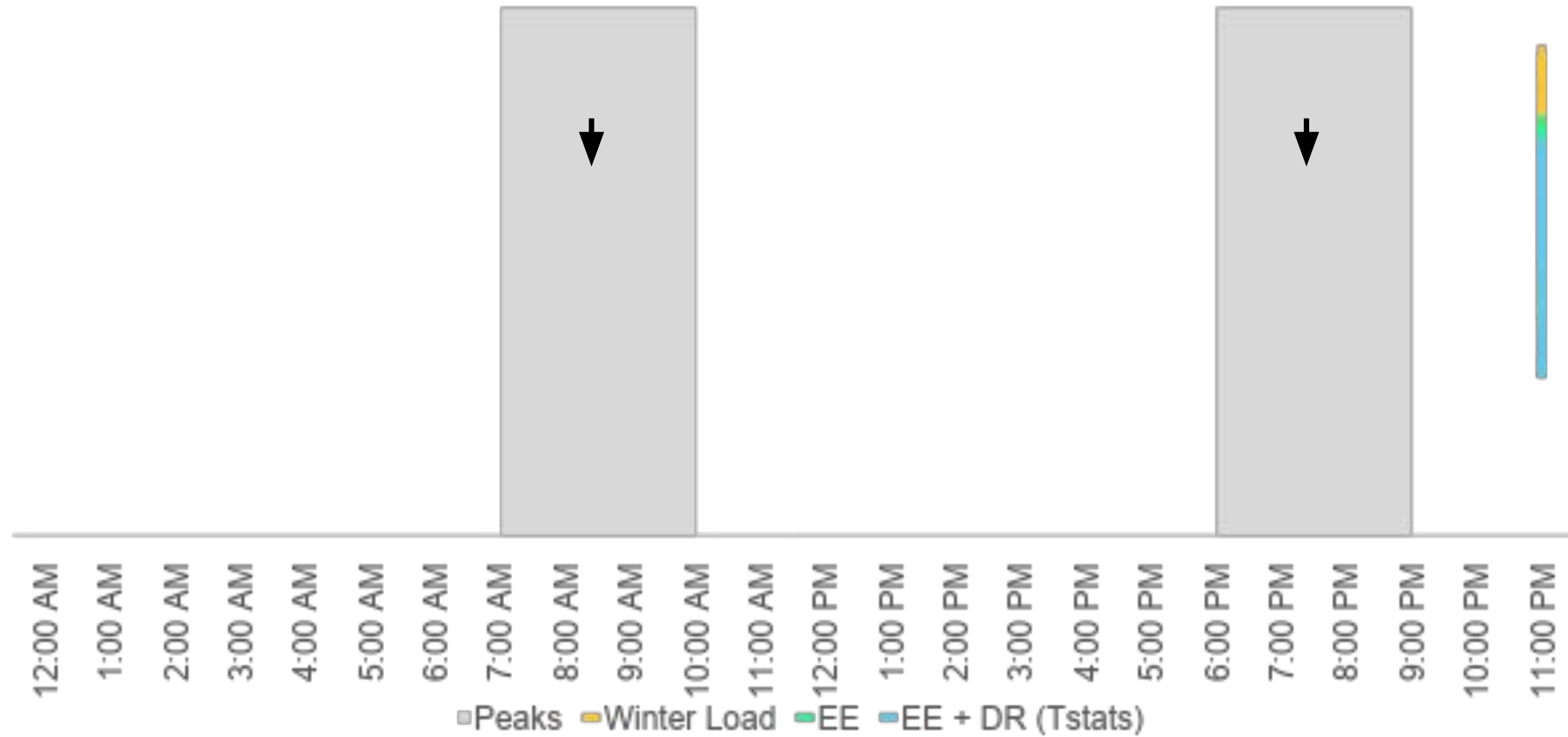
Bulk System Peaks

Distribution System Peaks

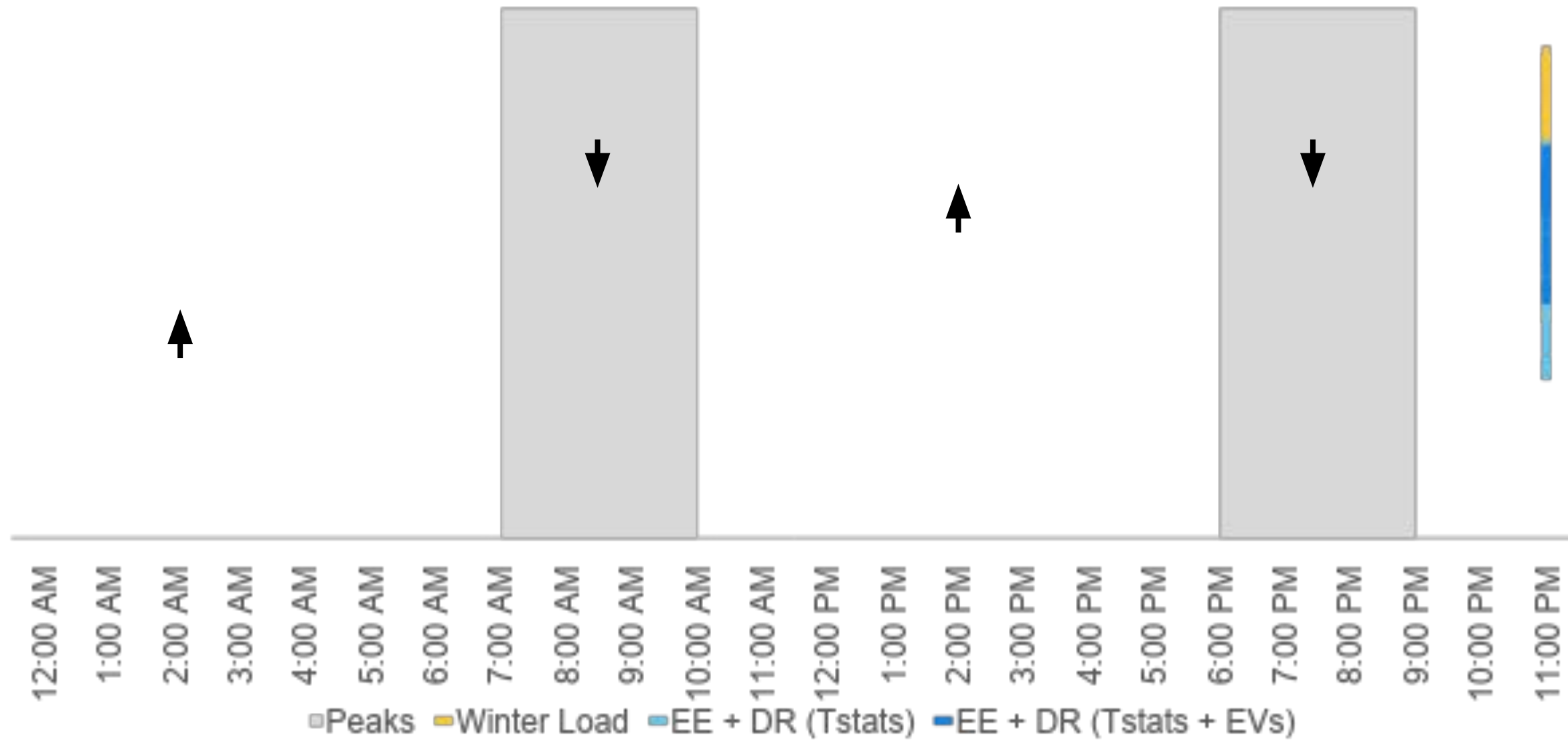
Leveraging EE for Managing Winter Loads



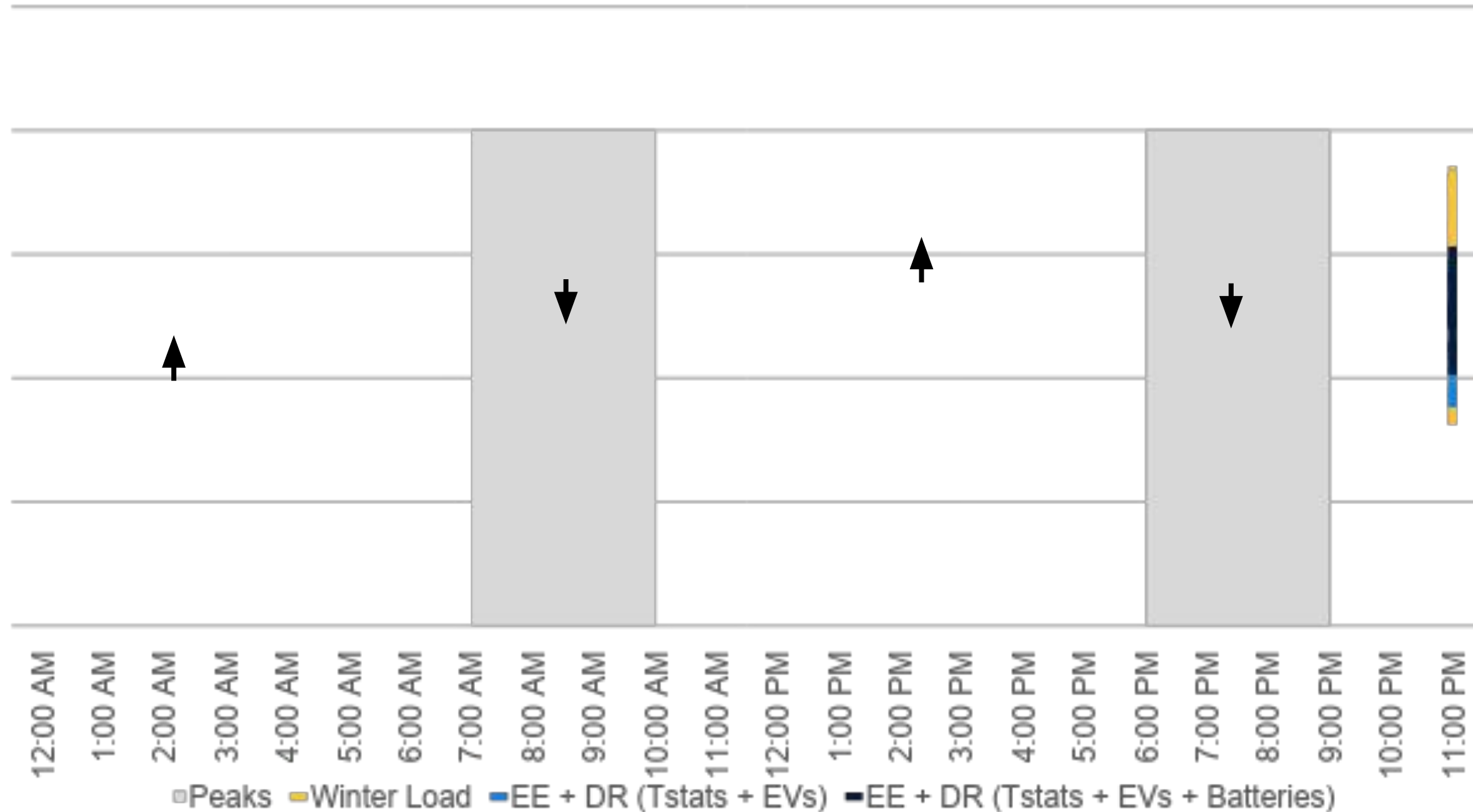
Leveraging EE plus DR for Managing Winter Loads



Leveraging EE plus DR for Managing Winter Loads



Leveraging EE plus DR for Managing Winter Loads



Motivations to Start Managing Winter Loads



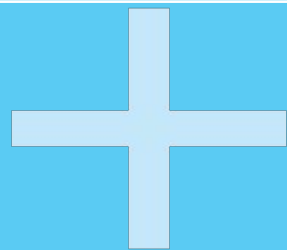
Preparing for future winter peaks

- Initially electrification-driven



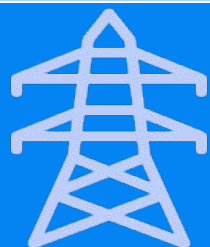
Mitigating high costs & reliability concerns

- Particularly from winter storm events



Maximizing value from existing assets

- Utilizing same assets for summer & winter



Addressing non-coincident local constraints

- Shedding load on stressed areas of distribution system

Summer versus Winter

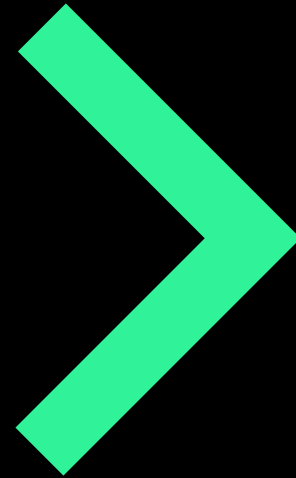
Similarities

- Program/portfolio design
 - DER assets
 - Customer classes
 - Program types
 - Channels
 - Partners
- Dispatch & customer considerations
 - Minimizing load increases before and after an event
 - Smart thermostats
 - Comfort thresholds & thermal envelopes
 - EVs
 - Driving schedules & needs
 - Batteries
 - Backup reserve

Differences

- Winters often have two daily peaks – morning & evening
- Dispatch & customer considerations
 - Smart thermostats
 - Different comfort thresholds
 - Electric heat identification
 - Backup/auxiliary heating for heat pumps
 - EVs
 - Reduced range
 - Batteries
 - Throttled charge and discharge rates

Key Takeaways



- It's not always just about the bulk system winter peaks
- Different demand-side resources bring different values & different capabilities
- It's never too early to start managing winter loads
- Apply best practices from managing summer loads, but don't forget that winter is its own unique snowflake



Thank You!

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