

Residential Customer Story

Winter Storm Elliott led to first ever TVA blackouts

- Two energy shortfall events: 2.9 GW Dec 23rd & 4.8 GW Dec 24th
- ~2M single speed heat pumps + backup resistance heating $\approx$ 3GW in peak demand

Affordability

- Customers choose lowest up-front cost despite operational savings
 - Education & Financing options needed (e.g. TVA's Home Uplift program)

Reliability

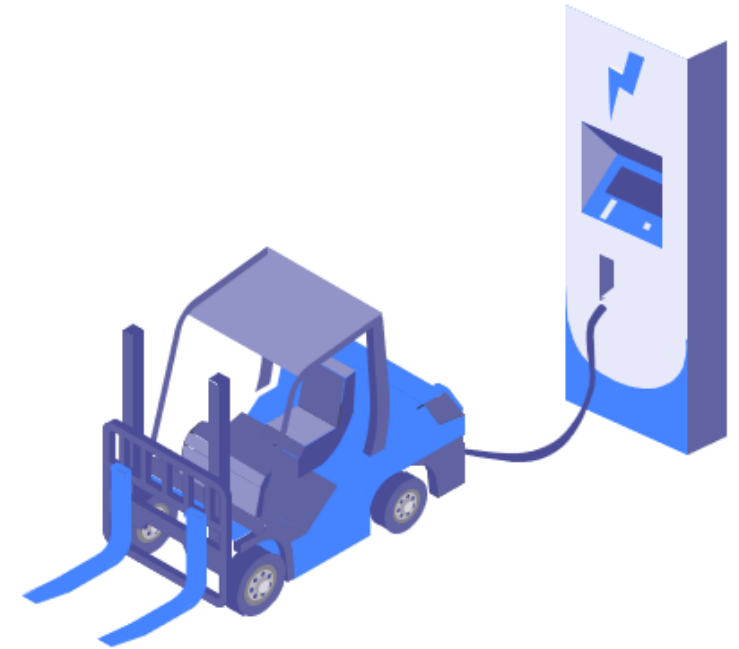
- EPRI+TVA variable speed heat pump (VSHP) pilot ride out the entire event at a balmy 78F
- VSHP ~35% more power reduction for same cooling reduction
- Inherently flexible technologies keep the grid operating



Customer Choice matters!

Industrial Customer Story

- Port of Los Angeles exploring decarbonization thru electrification
- 2000+ fleet of fossil fuel cargo handling equipment
 - 100% conversion to battery → 3x peak load increase (300MW) & \$200M in grid infrastructure
 - *Managed Charging* → 1.5x peak load (150MW) & \$30M reduction in grid costs
- **Affordability**
 - Lower the customer OpEx & grid CapEx
 - Quicker adoption and grid connection
- **Reliability**
 - Creating energy resources the grid can leverage



Demand Flexibility strategies unlock benefits!