CAMUS
Zero Carbon Grid Orchestration

Smarter DER Interconnection and Grid Management

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Unlocking grid capacity through orchestration

Enabling utilities and developers to flexibly interconnect resources and better utilize local grid capacity

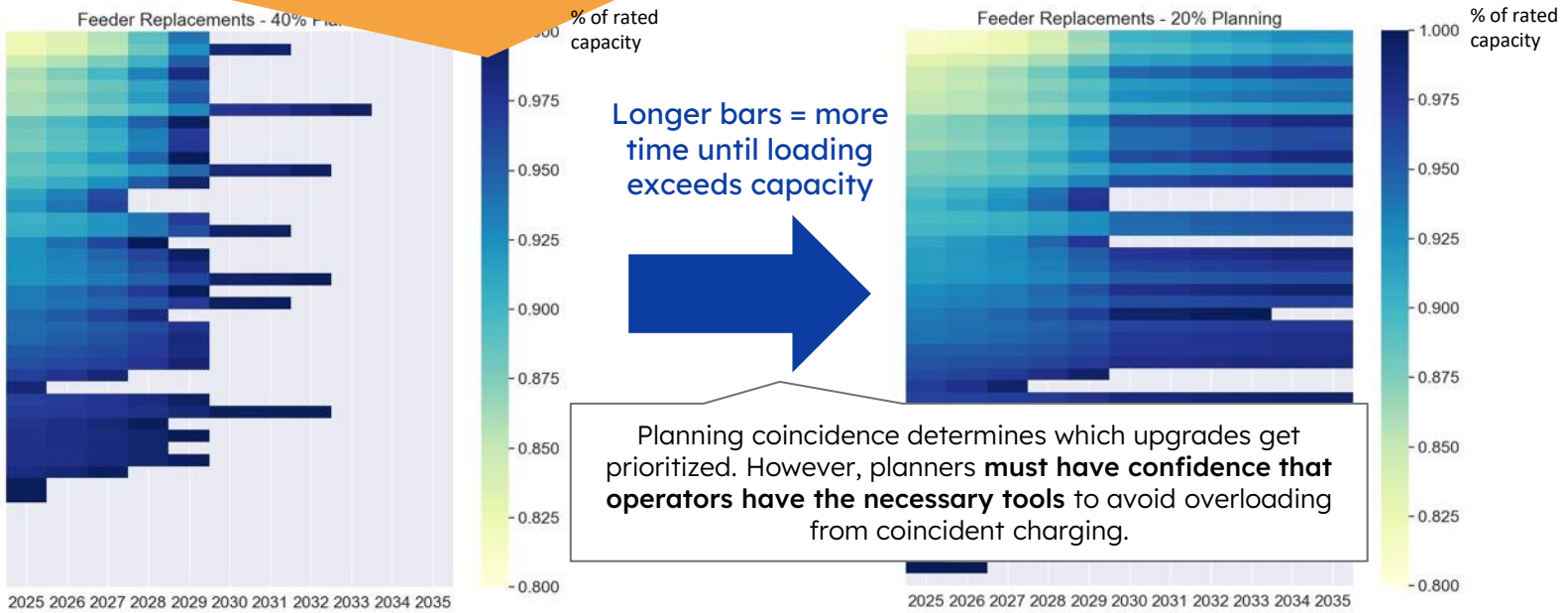
aes DLC DUQUESNE LIGHT CO. ppl VERMONT ELECTRIC COOP

HOW WE HELP

- Grid-wide visibility & forecasting
- Flexible interconnections (loads, gen)
- Grid-aware DER orchestration

Quantifying the value of grid-aware DER management

Example: By analyzing real-world residential EV charging + available grid capacity, we **identified the tipping point (5% EV adoption)** after which investments in visibility and grid-optimized managed charging provide positive ROI.



Planning coincidence determines which upgrades get prioritized. However, planners **must have confidence that operators have the necessary tools** to avoid overloading from coincident charging.

Source: www.aes.com/ev-tipping-point

Proving grid-aware DER management works in the field

Control residential chargers constrained to capacity limits of distribution transformers

GIS
- Grid components
- Connectivity
- Transformer capacity rating

EVSE Telemetry
- Chargepoint API

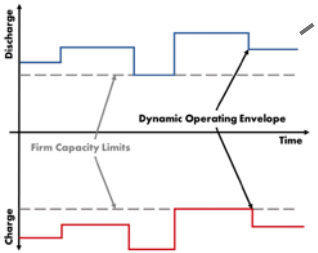
Timeseries DB

Resources DB

Forecast Service

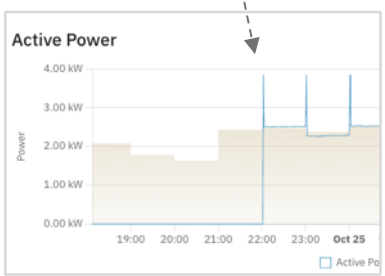
Envelope Generation Service

Control Service



Platform UI

Flexible Interconnection w/ Control



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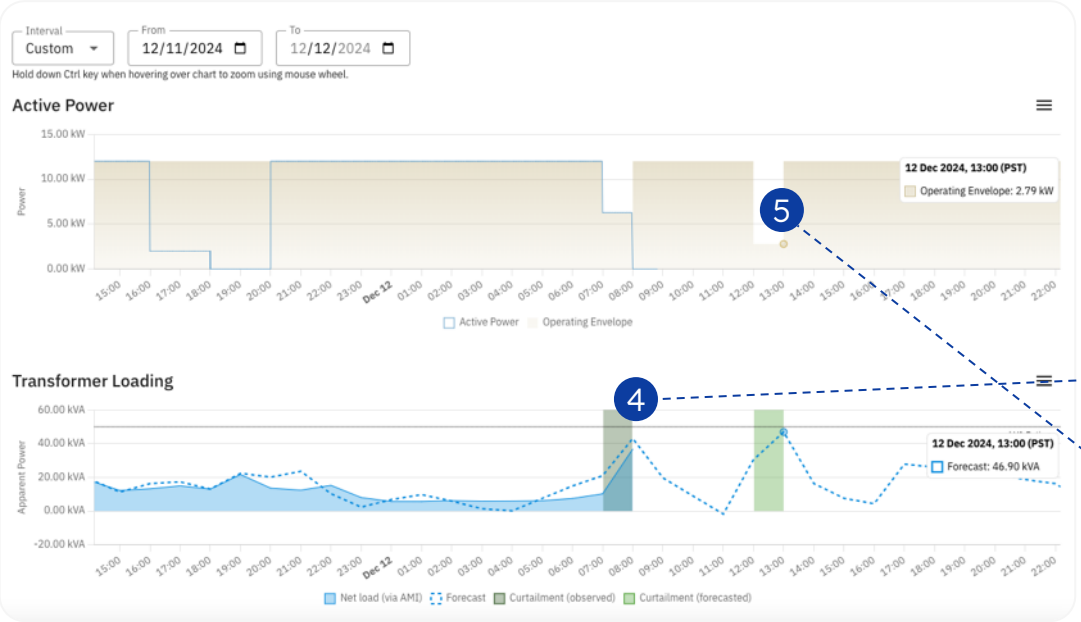
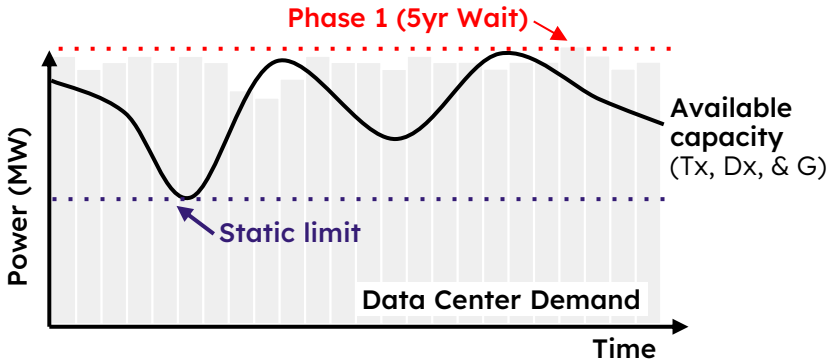


How grid-aware charging works:

1. Establish connectivity via GIS
2. Disaggregate controllable EV load by using EVSE telemetry
3. Estimate net loading for each transformer via aggregated AMI
4. Predict when curtailment may be required (hour blocks)
5. Send operating envelope (hourly max setpoint) for next 24 hours
6. Update envelope hourly
7. EVSE limits power in real-time

Bringing flexible interconnection to large loads & generation

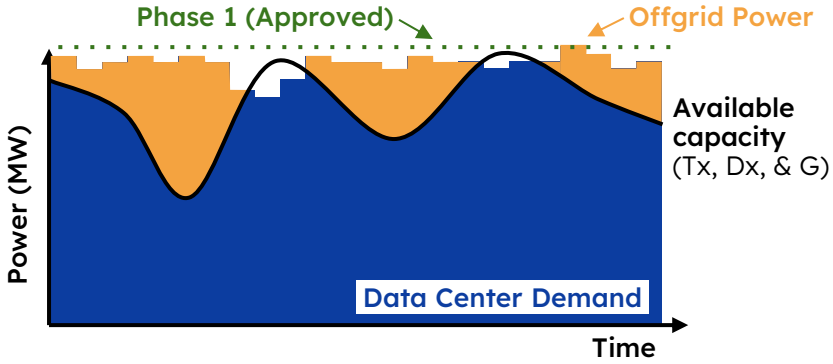
Static Interconnection



Interconnection Delayed ✗

New grid connection date:	2030 (post-upgrade)
Upgrade cost (phase 1):	$20 million
On-site generation:	100% through 2029

Flexible Interconnection



Interconnection Approved ✓

New connection date:	2026	FASTER
Initial cost:	$3 million	LOWER COST
Off-grid required:	5-20% annually	LESS CO2

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THANKS!
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