EVs2Scale 2030™

Metropolitan Washington Council of Governments (COG)

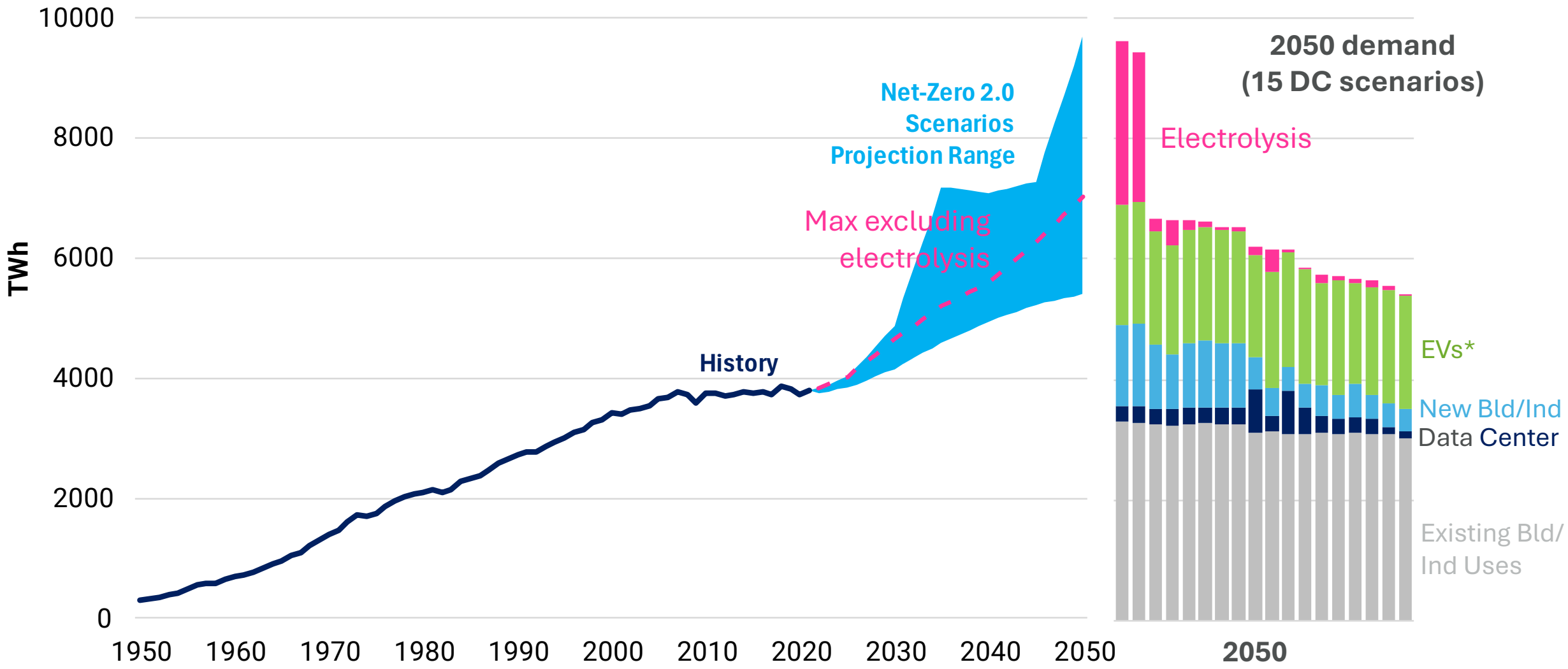
Regional Electric Vehicle Deployment (REVD) Working Group

July 2025

Britta Gross

EPRI, Director of Transportation

EVs are a Bigger Driver of Load Growth in the Long-Run



Source: LCRI Net-Zero Scenarios 2.0 Report, lcri-netzero.epri.com

** Assumes: significant data center efficiencies, 1 EV scenario, 80-90% EV market share in 2050 (LDV and HDV). Other non-EPRI studies show similar results.*

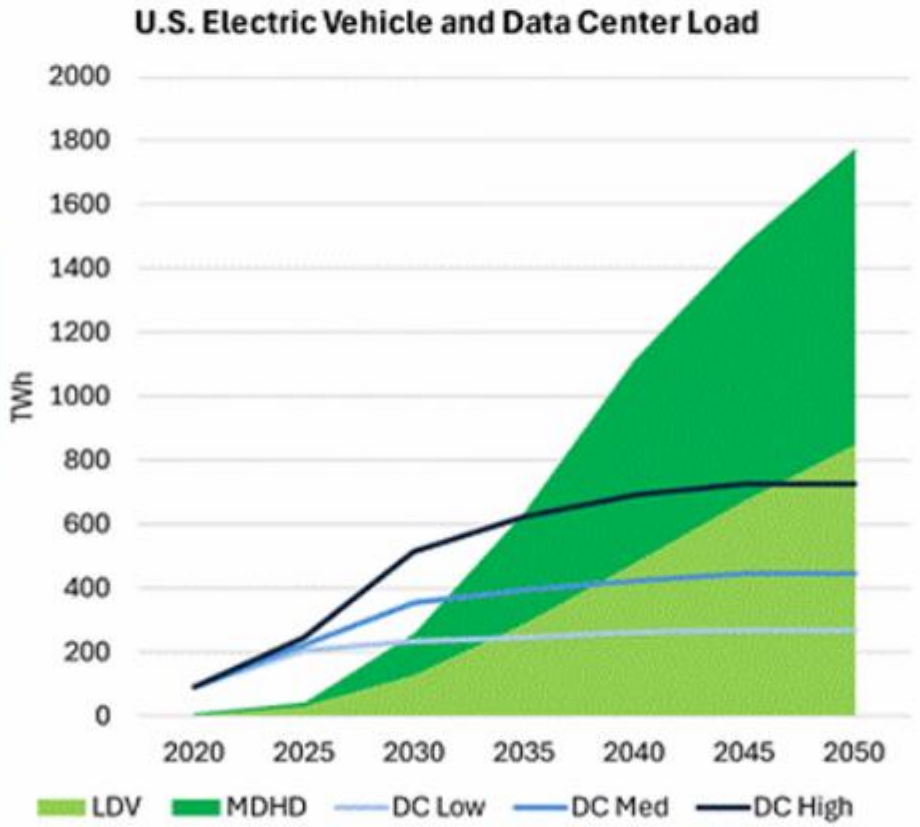
EVs are a Bigger Driver of Load Growth in the Long-Run

First Look

Another look: What about load from Data Centers?

Draft EPRI analysis shows a range of loads from EVs and data centers

Preliminary results



The Electrical Grid Challenge

- There are **3,200 utilities in North America (+145 in Canada)** – each with different processes, tools, regulators
- **Planning and integrating new electrical loads** on the grid is typically a **multi-year process**
- **Uncertainty** in where/when loads are expected **prevents utilities (and utility regulators) from being able to plan**
- Utilities (and regulators) **must have confidence in when and where loads** are coming in order to accelerate interconnection times

Early engagement with utilities is critical

EVs2Scale 2030™

PROJECT PARTNERS

BROAD INDUSTRY SUPPORT

amazon

Ameren

AUSTIN ENERGY®

CATERPILLAR

CenterPoint Energy

conEdison

Consumers Energy
Count on Us

DUKE ENERGY®

exelon℠

FirstEnergy

GREAT RIVER ENERGY

JEA
Building Community®

nationalgrid

New York Power Authority

Your Energy Partner
OPPD
Omaha Public Power District

PGE

PG&E®

Seattle City Light

SOUTHERN CALIFORNIA EDISON®

Southern Company

SMUD®

SRP

Xcel Energy®

Collaboration + Partnerships

Ongoing Engagement

EVs2Scale 2030

UTILITY INDUSTRY

EPRI
LPPC Large Public Power Council
EEI
NRECA America's Electric Cooperatives
American Public Power Association
Alliance for Transportation Electrification
NASUCA National Association of State Utility Consumer Advocates
NARUC National Association of Regulatory Utility Commissioners

AUTO & TRUCKING INDUSTRY

Ford
Tesla
BMW
Audi
Toyota
Mercedes-Benz
Volvo
PACCAR
GM
Rivian
Daimler
Honda
Alliance for Automotive Innovation
Volkswagen
NACFE
NADA

FLEET OPERATORS

amazon
FedEx
Enterprise
US Foods
DHL
Uber
Lyft
Walmart Save money. Live better.
Pitt Ohio Supply Chain • Ground • LTL • TL
Penske
J.B. Hunt
element
NAFA Fleet Management Association
WHEELS Together Let's Go Far

CHARGING PROVIDERS AND FUELING RETAILERS

Circle K
electrify america
flo EV Charging
chargepoint
EVgo FAST CHARGING
bp
Shell

NGO & STANDARD-SETTING ORGANIZATIONS

NRDC
EDF Environmental Defense Fund
MARMI
CHARIN
SAE International
ATLAS Public Policy
Plug In America
Electric Vehicle Association

GOVERNMENT

- Joint Office of Energy & Transportation (JOET)
- US DOE
- US DOT
- National Labs
- FERC/NERC
- State DOEs, DOTs, DEQs
- State PUCs
- League of Cities
- Climate Mayors

Addressing the Barriers to Achieving EVs at Scale

A Three-Pillar Strategy to Address the Key Industry Gaps

EVs2Scale2030

1 COALITIONS & ROADMAPS

Industry Forum Convenings
- Utility-OEM Forum
- Utility-Fleet Forum

National EV Driver Research Board

2 **50-state eRoadMAP™ to 2030** outlining EV loads, grid impacts, leadtimes, workforce, costs

2 STRUCTURAL SYSTEM REFORMS

Charging Infrastructure
- Reliability: Benchmarking, Standards
- Charging Innovation & Affordability

Grid Readiness
- Streamlined Grid Interconnect
  - Flexible Interconnect Solutions
- Managed Charging at Scale
- Interconnect Standards for V2H/V2B/V2G

3 UNIFYING TOOLS & PILOTS

1
- Approved Product List (APL)
- NEVI/NEHC Coordination with EEI

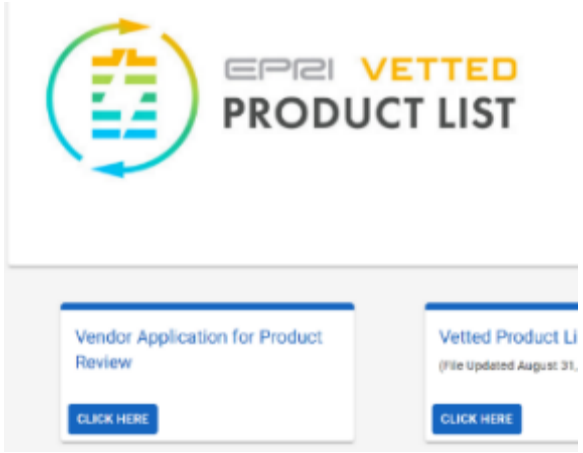
3
- GridFAST™ Online Data Exchange
- OEM/Utility V2H/V2B Pilot
- EV Resilience/Evacuation Pilot

4 **Enabling Regulatory and Oversight Framework**

Equity Blueprint **Workforce Development**

4 Major EVs2Scale Deliverables now Released

1



- 105 vendors and 750 products "listed"
- Vendors now have access to over $1.8B in utility and state grant programs

2

- Visualization of planned/expected EV loads
- Cited in over 10 state proceedings to date

3

GridFAST

- Industry portal for early project planning (and ultimately service requests)

4

50-State GridREADY

- Promotes a common data-based understanding of need for proactive grid planning
- Available to all NGOs and state leaders
- No state left behind

EPRI VETTED PRODUCT LIST

EVs2Scale 2030

- **>700 EVSE products and 50 networks** from **over 100 vendors** vetted
- Updated monthly
- Routinely adding new vendors and user organizations
- Full transparency of vetting process and data

Available for use today

Vendors Using the VPL

Learn more at: www.epri.com/vpl

EPRI

Impact & Value

- Vendor access to >**$1.8 billion** in program funding incentives
- Reduced vendor frustration with product qualification
  - The VPL is a one-stop shop for product qualification across a dozen programs vs. individually interacting with each organization
- Reduced labor hours and costs for utilities and other participating organizations
  - Burden of product qualification and knowledge of up-to-date industry practices has been taken on by EPRI

Organizations Using the VPL

comed AN EXELON COMPANY

People. Power. Possibilities. Central Hudson A FORTIS COMPANY

JOINT UTILITIES OF NEW YORK

NYSEG

Georgia Power

conEdison

Orange & Rockland

NYSERDA

nationalgrid

RG&E

Oregon Department of Transportation

PACIFICORP

PG&E

PGE

SOUTHERN CALIFORNIA EDISON

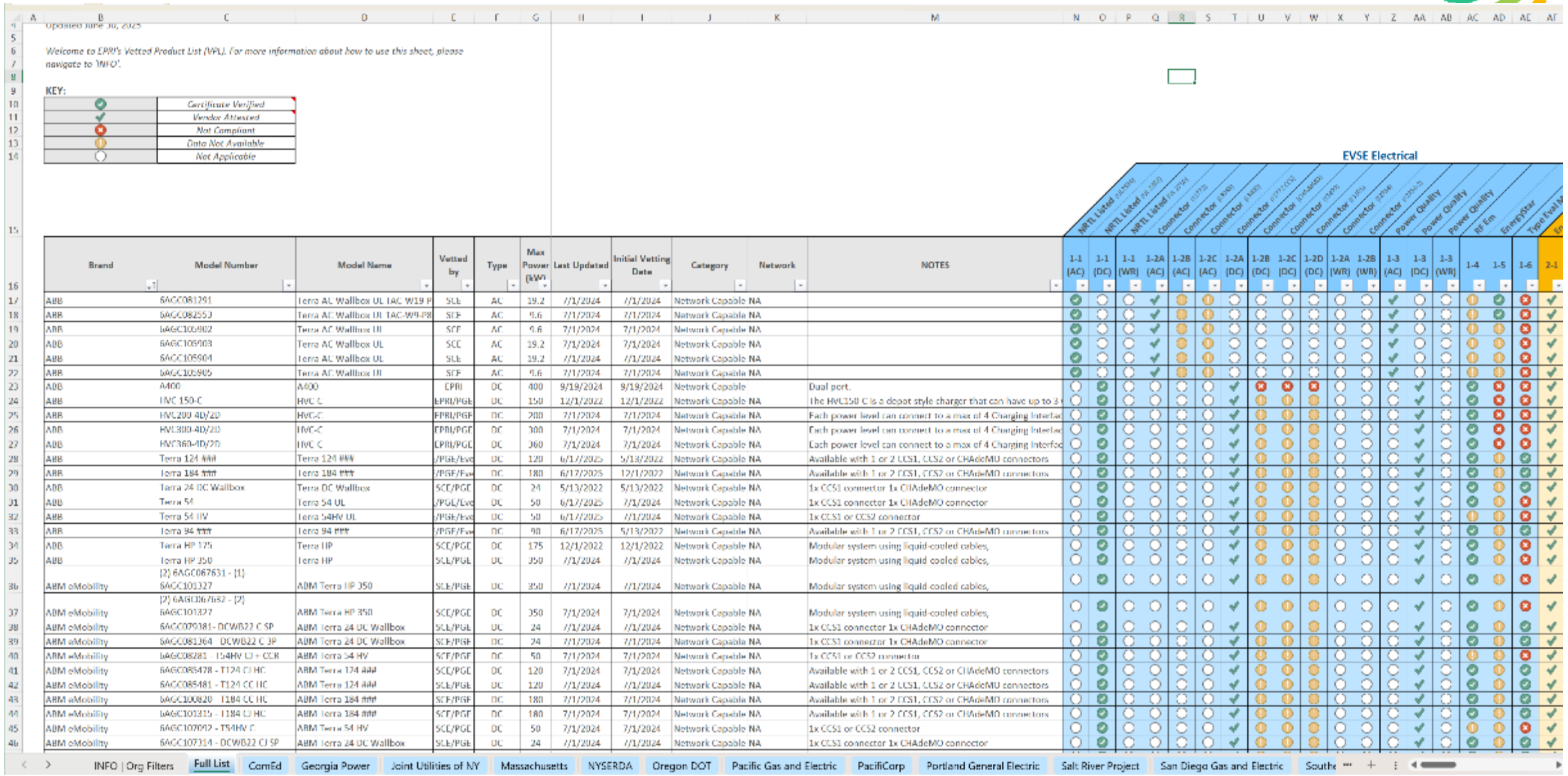
SDGE

SRP Delivering water and power

Learn more at: www.epri.com/vpl

VPL | Download the Table

EVs2Scale 2030



Updated June 30, 2025

Welcome to EPRI's Vetted Product List (VPL). For more information about how to use this sheet, please navigate to 'INFO'.

KEY:

✅	*Certificate Verified*
✔	*Vendor Attested*
❌	*Not Compliant*
◐	*Data Not Available*
○	*Not Applicable*

EVSE Electrical

Brand	Model Number	Model Name	Vetted by	Type	Max Power (kW)	Last Updated	Initial Vetting Date	Category	Network	NOTES	1-1 (AC)	1-1 (DC)	1-1 (WR)	1-2A (AC)	1-2B (AC)	1-2C (AC)	1-2A (DC)	1-2B (DC)	1-2C (DC)	1-2D (DC)	1-2A (WR)	1-2B (WR)	1-3 (AC)	1-3 (DC)	1-3 (WR)	1-4	1-5	1-6	2-1
ABB	6AGC081291	Terra AC Wallbox UL IAC W19 P	SLE	AC	19.2	//1/2024	//1/2024	Network Capable	NA		✅	○	○	✔	◐	◐	○	○	○	○	○	○	✔	○	○	◐	✅	❌	✔
ABB	6AGC082553	Terra AC Wallbox UL IAC-W9-P8	SCE	AC	9.6	7/1/2024	7/1/2024	Network Capable	NA		✅	○	○	✔	◐	◐	○	○	○	○	○	○	✔	○	○	◐	✅	❌	✔
ABB	6AGC105902	Terra AC Wallbox UL	SCE	AC	9.6	7/1/2024	7/1/2024	Network Capable	NA		✅	○	○	✔	◐	◐	○	○	○	○	○	○	✔	○	○	◐	◐	❌	✔
ABB	6AGC105903	Terra AC Wallbox UL	SCE	AC	19.2	7/1/2024	7/1/2024	Network Capable	NA		✅	○	○	✔	◐	◐	○	○	○	○	○	○	✔	○	○	◐	◐	❌	✔
ABB	6AGC105904	Terra AC Wallbox UL	SLE	AC	19.2	//1/2024	//1/2024	Network Capable	NA		✅	○	○	✔	◐	◐	○	○	○	○	○	○	✔	○	○	◐	◐	❌	✔
ABB	6AGC105905	Terra AC Wallbox UL	SCE	AC	9.6	7/1/2024	7/1/2024	Network Capable	NA		✅	○	○	✔	◐	◐	○	○	○	○	○	○	✔	○	○	◐	◐	❌	✔
ABB	A400	A400	EPRI	DC	400	9/19/2024	9/19/2024	Network Capable		Dual port.	○	✅	○	○	○	○	✔	❌	❌	❌	○	○	○	✔	○	✅	❌	❌	✔
ABB	HVC 150-C	HVC C	EPRI/PGE	DC	150	12/1/2022	12/1/2022	Network Capable	NA	The HVC150 C is a depot style charger that can have up to 3	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	✅	❌	❌	✔
ABB	HVC200-4D/2D	HVC-C	EPRI/PGE	DC	200	7/1/2024	7/1/2024	Network Capable	NA	Each power level can connect to a max of 4 Charging Interfa	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	✅	❌	❌	✔
ABB	HVC300-4D/2D	HVC-C	EPRI/PGE	DC	300	7/1/2024	7/1/2024	Network Capable	NA	Each power level can connect to a max of 4 Charging Interfa	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	✅	❌	❌	✔
ABB	HVC360-4D/2D	HVC C	EPRI/PGE	DC	360	7/1/2024	7/1/2024	Network Capable	NA	Each power level can connect to a max of 4 Charging Interfa	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	✅	❌	❌	✔
ABB	Terra 124 ###	Terra 124 ###	/PGE/Eve	DC	120	6/17/2025	5/13/2022	Network Capable	NA	Available with 1 or 2 CCS1, CCS2 or CHAdeMO connectors	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	✅	◐	✅	✔
ABB	Terra 184 ###	Terra 184 ###	/PGE/Eve	DC	180	6/17/2025	12/1/2022	Network Capable	NA	Available with 1 or 2 CCS1, CCS2 or CHAdeMO connectors	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	✅	◐	✅	✔
ABB	Terra 24 DC Wallbox	Terra DC Wallbox	SCE/PGE	DC	24	5/13/2022	5/13/2022	Network Capable	NA	1x CCS1 connector 1x CHAdeMO connector	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	✅	◐	✅	✔
ABB	Terra 50	Terra 50 UL	/PGE/Eve	DC	50	6/17/2025	//1/2024	Network Capable	NA	1x CCS1 connector 1x CHAdeMO connector	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	✅	◐	❌	✔
ABB	Terra 50 HV	Terra 50HV UL	/PGE/Eve	DC	50	6/17/2025	//1/2024	Network Capable	NA	1x CCS1 or CCS2 connector	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	◐	◐	❌	✔
ABB	Terra 94 ###	Terra 94 ###	/PGE/Eve	DC	90	6/17/2025	5/13/2022	Network Capable	NA	Available with 1 or 2 CCS1, CCS2 or CHAdeMO connectors	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	✅	◐	✅	✔
ABB	Terra HP 175	Terra HP	SCE/PGE	DC	175	12/1/2022	12/1/2022	Network Capable	NA	Modular system using liquid-cooled cables,	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	✅	◐	❌	✔
ABB	Terra HP 350	Terra HP	SCE/PGE	DC	350	//1/2024	//1/2024	Network Capable	NA	Modular system using liquid-cooled cables,	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	✅	◐	❌	✔
ABB eMobility	[2] 6AGC067631 - [1] 6AGC101327	ABB Terra HP 350	SCE/PGE	DC	350	//1/2024	//1/2024	Network Capable	NA	Modular system using liquid-cooled cables,	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	✅	◐	❌	✔
ABB eMobility	[2] 6AGC067632 - [2] 6AGC101327	ABB Terra HP 350	SCE/PGE	DC	350	7/1/2024	7/1/2024	Network Capable	NA	Modular system using liquid-cooled cables,	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	✅	◐	❌	✔
ABB eMobility	6AGC079181 - DCWB22 C SP	ABB Terra 24 DC Wallbox	SCE/PGE	DC	24	//1/2024	//1/2024	Network Capable	NA	1x CCS1 connector 1x CHAdeMO connector	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	✅	◐	✅	✔
ABB eMobility	6AGC081364 - DCWB22 C SP	ABB Terra 24 DC Wallbox	SCE/PGE	DC	24	//1/2024	//1/2024	Network Capable	NA	1x CCS1 connector 1x CHAdeMO connector	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	✅	◐	✅	✔
ABB eMobility	6AGC08281 - T50HV CJ + CCR	ABB Terra 50 HV	SCE/PGE	DC	50	7/1/2024	7/1/2024	Network Capable	NA	1x CCS1 or CCS2 connector	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	◐	◐	❌	✔
ABB eMobility	6AGC085478 - T124 CJ HC	ABB Terra 124 ###	SCE/PGE	DC	120	7/1/2024	7/1/2024	Network Capable	NA	Available with 1 or 2 CCS1, CCS2 or CHAdeMO connectors	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	✅	◐	✅	✔
ABB eMobility	6AGC085481 - T124 CC HC	ABB Terra 124 ###	SCE/PGE	DC	120	//1/2024	//1/2024	Network Capable	NA	Available with 1 or 2 CCS1, CCS2 or CHAdeMO connectors	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	✅	◐	✅	✔
ABB eMobility	6AGC100820 - T184 CC HC	ABB Terra 184 ###	SCE/PGE	DC	180	7/1/2024	7/1/2024	Network Capable	NA	Available with 1 or 2 CCS1, CCS2 or CHAdeMO connectors	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	✅	◐	✅	✔
ABB eMobility	6AGC101315 - T184 CJ HC	ABB Terra 184 ###	SCE/PGE	DC	180	7/1/2024	7/1/2024	Network Capable	NA	Available with 1 or 2 CCS1, CCS2 or CHAdeMO connectors	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	✅	◐	✅	✔
ABB eMobility	6AGC107092 - T50HV C	ABB Terra 50 HV	SCE/PGE	DC	50	7/1/2024	7/1/2024	Network Capable	NA	1x CCS1 or CCS2 connector	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	◐	◐	❌	✔
ABB eMobility	6AGC107314 - DCWB22 CJ SP	ABB Terra 24 DC Wallbox	SCE/PGE	DC	24	//1/2024	//1/2024	Network Capable	NA	1x CCS1 connector 1x CHAdeMO connector	○	✅	○	○	○	○	✔	◐	◐	◐	○	○	○	✔	○	✅	◐	✅	✔

INFO | Org Filters | Full List | ComEd | Georgia Power | Joint Utilities of NY | Massachusetts | NYSERDA | Oregon DOT | Pacific Gas and Electric | PacifiCorp | Portland General Electric | Salt River Project | San Diego Gas and Electric | Southe

EPRI

VPL | Select e.g. Joint Utilities of New York

DCFC EVSE *(for projects committed 11/16/24 onward)* **and Level 2 AC EVSE** *(for projects committed 06/01/25 onward)*

Brand	Model Number	Model Name	Type	Max Power (kW)	EnergyStar	Notes
ABB	A400	A400	DC	400	✗	Dual port.
Alpitronic	HYC400-1	Hypercharger	DC	100	✗	1-4 Ports
Alpitronic	HYC400-2	Hypercharger	DC	200	✗	1-4 Ports
Alpitronic	HYC400-3	Hypercharger	DC	300	✗	1-4 Ports
Alpitronic	HYC400-4	Hypercharger	DC	400	✗	1-4 Ports
Alpitronic	HYC50	Hypercharger	DC	50	✗	1-2 Ports
ATG Electronics	ATG-C01-40A	Commercial EV Charger	AC	9.6	✓	Single port
ATG Electronics	ATG-C01-48A	Commercial EV Charger	AC	11.5	✓	Single port
Autel	DC Compact - UW040A2501	DC Compact	DC	40	✓	Dual Port.
Autel	DC HiPower	DC HiPower	DC	640	✗	The DC HiPower has a power cabinet with dispenser set up. It comes in 320, 480, or 640kW options and can be purchased with 2, 4, 6, or 8 ports depending on the number of dispensers.
Autel	Maxi UW19C002	MaxiCharger AC Pro 80A	AC	19.2	✓	Single port.
Autel	Maxi UW19CJ02	MaxiCharger AC 80A	AC	19.2	✓	Single port.
Autel	Maxi UW19L002	MaxiCharger AC Pro 80A	AC	19.2	✓	Single port.
Autel	Maxi UW19LB02	MaxiCharger AC 80A	AC	19.2	✓	Single port.
Autel	Maxi UW19LJ02	MaxiCharger AC 80A	AC	19.2	✓	Single port.
Autel	UF####001	AC Ultra	AC	19.2	✓	Single Port or Dual Port. No credit card reader
Autel	UF####101	AC Ultra	AC	19.2	✓	Single Port or Dual Port
Autel	UF####1-40	AC Ultra 40	AC	8.3	✓	Dual Port. This is the same model as the UF****01. The charger can be derated to 40A and thus be eligible for SCE's Charge Ready Light Duty program. SCE added -40 at the end to differentiate it from the other 80A version.

INFO | Org Filters | Full List | ComEd | Georgia Power | Joint Utilities of NY | Massachusetts | NYSERDA | Oregon DOT | Pacific Gas and Electric | Pa

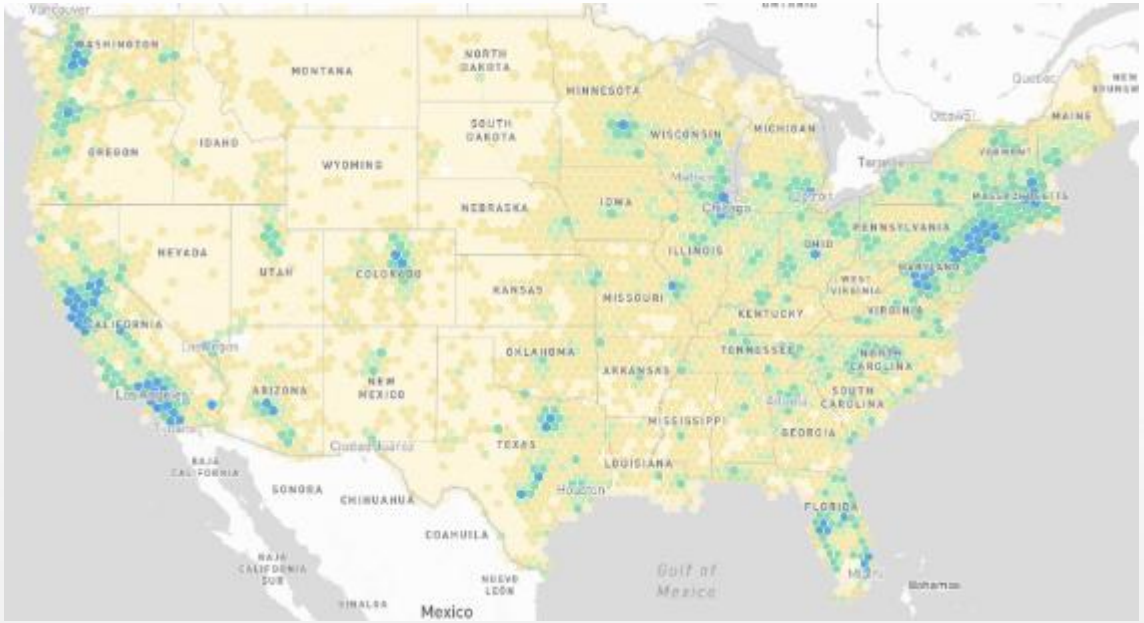
Confidence requires creating Public and Private Transparency in Planning

EVs2Scale2030

eRoadMAP

Public Tool

Visualization and Communication (Hex8)

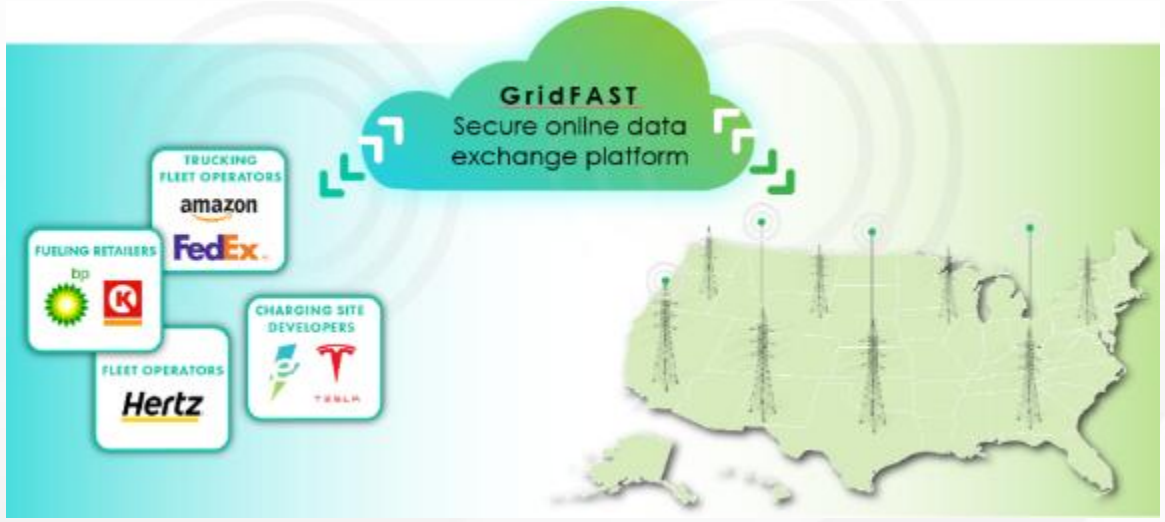


https://eroadmap.epri.com/

GridFAST

Industry Platform

Planning and Accelerating Grid Interconnects (site level)



Soft Launch March 2025

EPRI

eRoadMAP | Input Collaborators

ANALYTICS

EPRI

RMI
ENERGY. TRANSFORMED.

U.S. DEPARTMENT OF ENERGY

NREL
NATIONAL RENEWABLE ENERGY LABORATORY

DATA

amazon

DAIMLER TRUCK

TESLA

NAVISTAR

WORLD RESOURCES INSTITUTE

PACCAR

REPUBLIC SERVICES

Enterprise Mobility™

NADA
NATIONAL AUTOMOBILE DEALERS ASSOCIATION

PITT OHIO
SUPPLY CHAIN • LTL • TL

VOLVO

MANHATTAN
BEER DISTRIBUTORS

Also:

Experian™

GEOTAB ITS

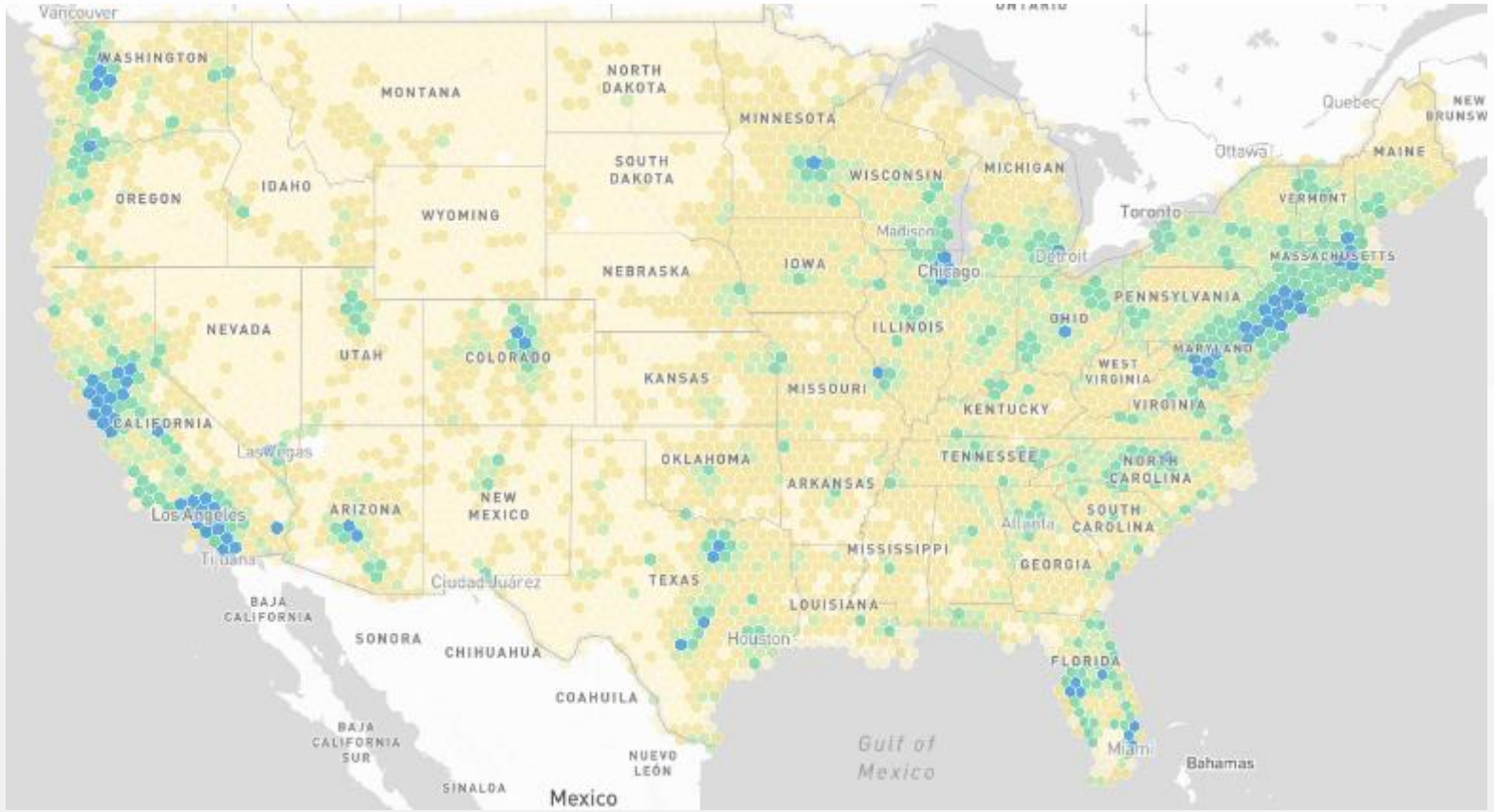
INRIX

REPLICA

eRoadMAP

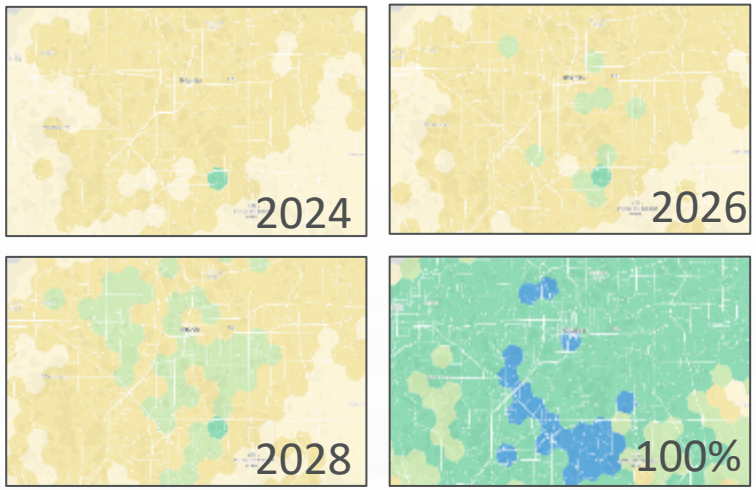
When and where are loads likely to appear on the grid?

https://eroadmap.epri.com/



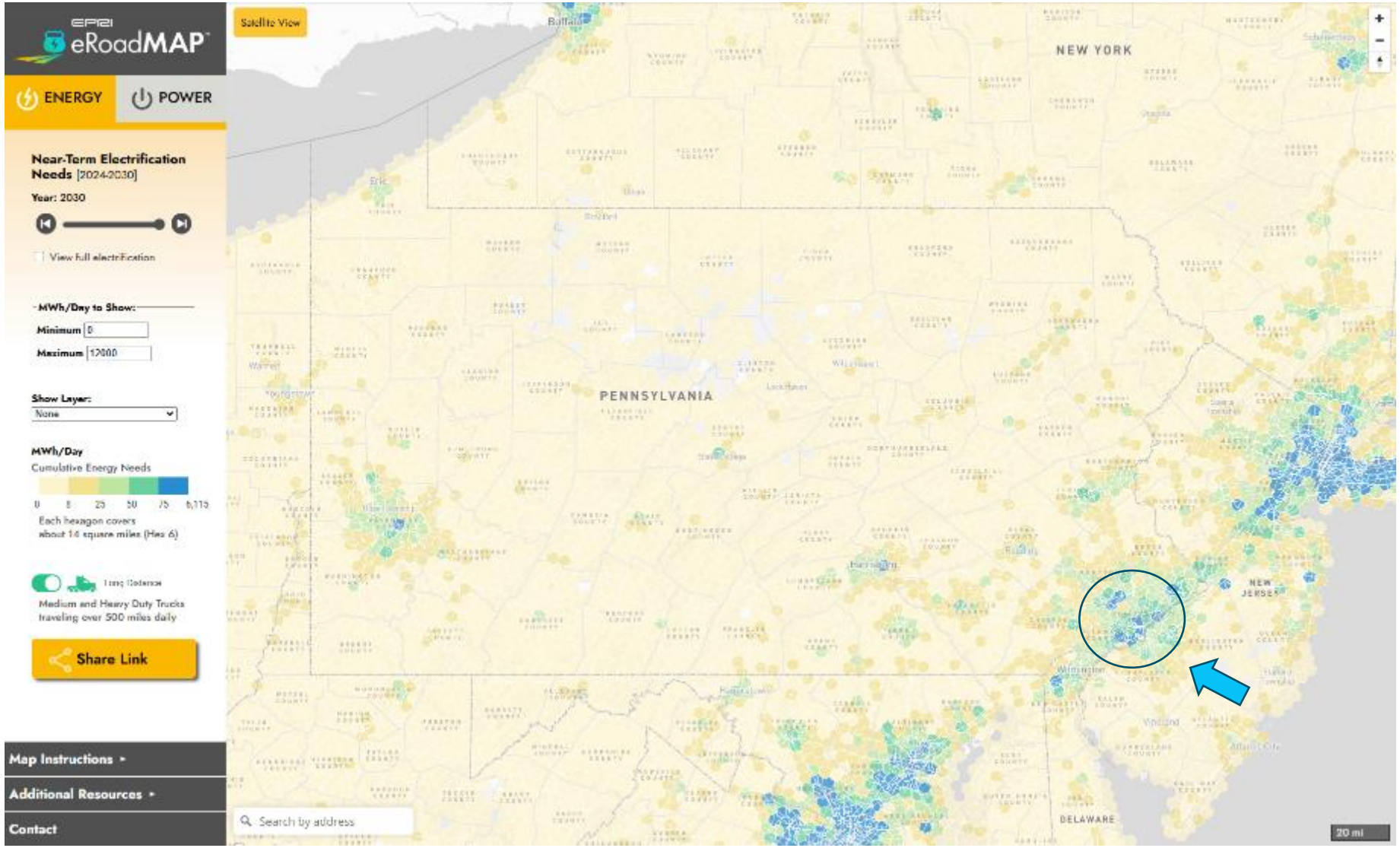
Interactive Load Map to Hex8 Resolution (0.28 mi^2)

Fleet Electrification Over Time



Fleet activity aggregated to Hex8 Level
(protects proprietary fleet data)

Interactive Energy Map: Philadelphia Area (2030)



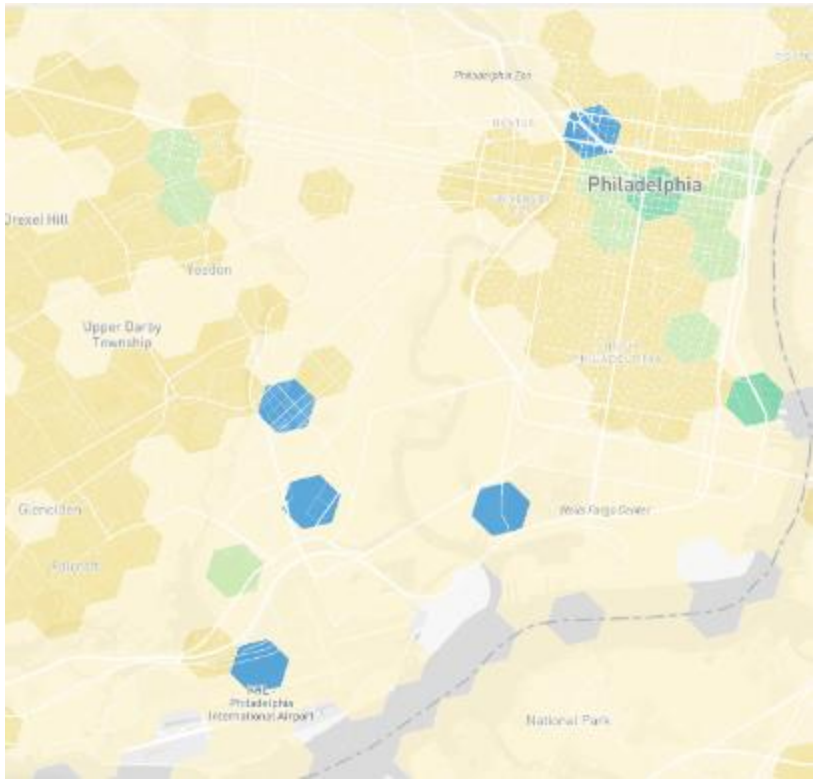
Hex 5 (98 mi^2)

Interactive Energy Map: Philadelphia Area

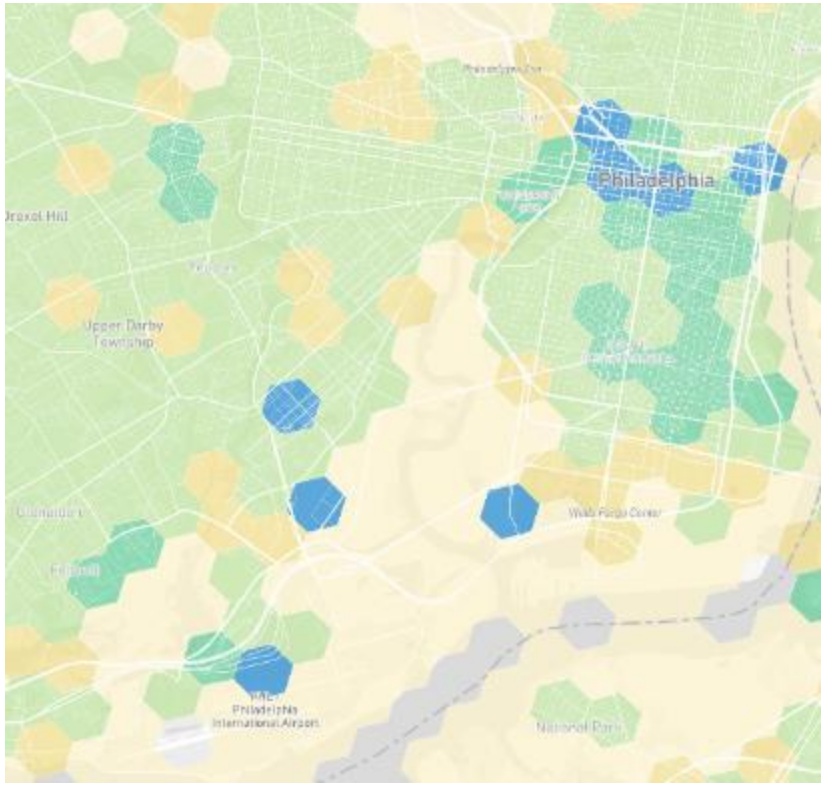
2026 to 2030 to Full Electrification Comparison

EVs2Scale 2030

2026



2030



Full Electrification

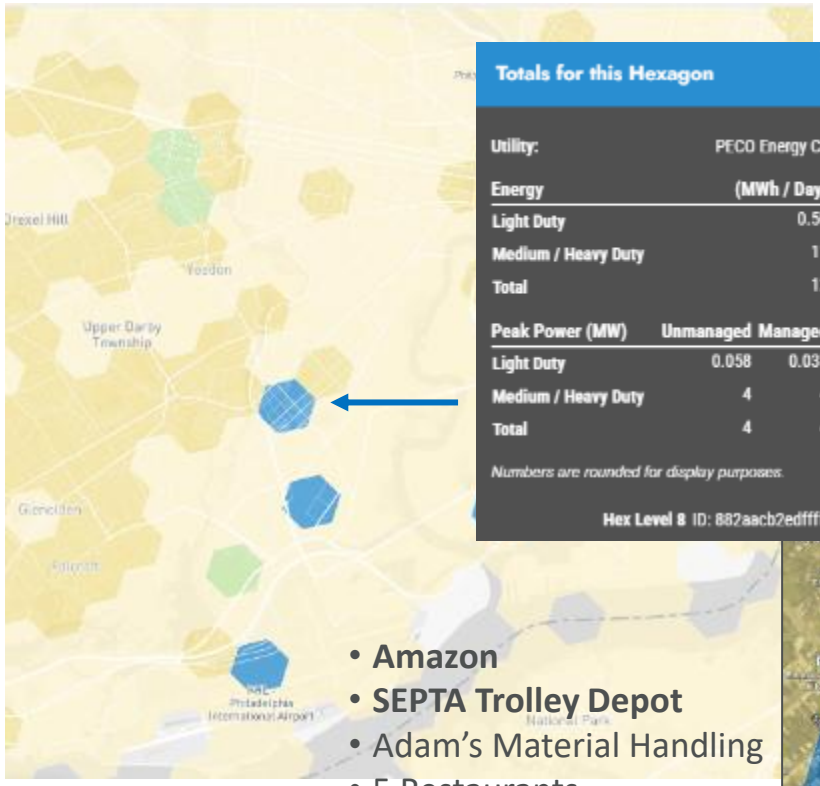
Hex 8 (0.28 mi^2)

Interactive Energy Map: Philadelphia Area

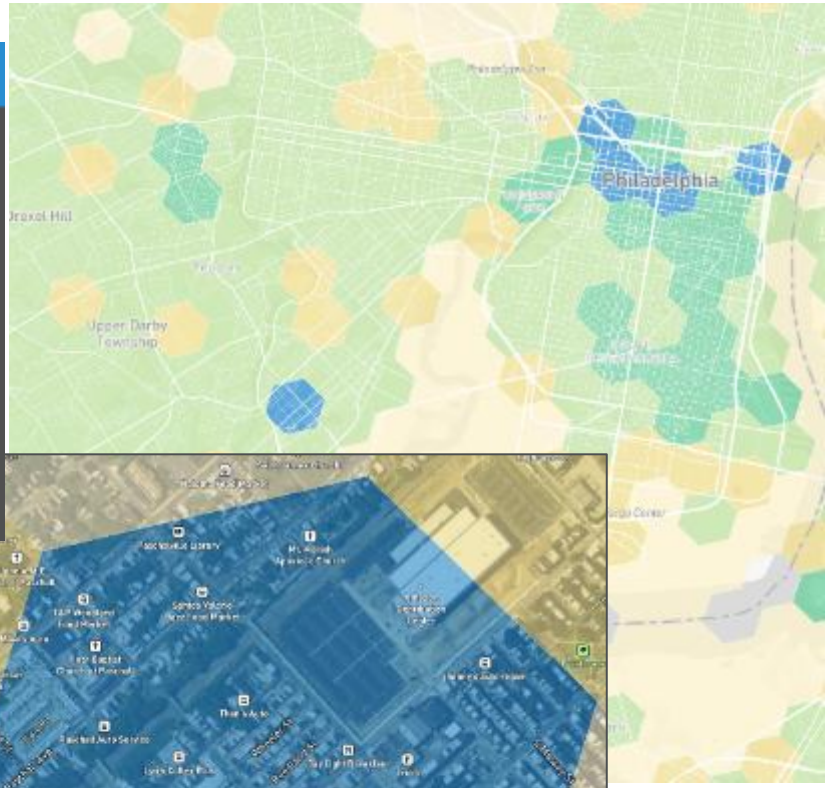
2026 to 2030 to Full Electrification Comparison

EVs2Scale 2030

2026



2030



Full Electrification

- **Amazon**
- **SEPTA Trolley Depot**
- Adam's Material Handling
- 5 Restaurants
- 4 Auto Repair Shops
- 3 Churches
- 3 Food/Drink Markets
- 1 Library

Hex 8 (0.28 mi^2)

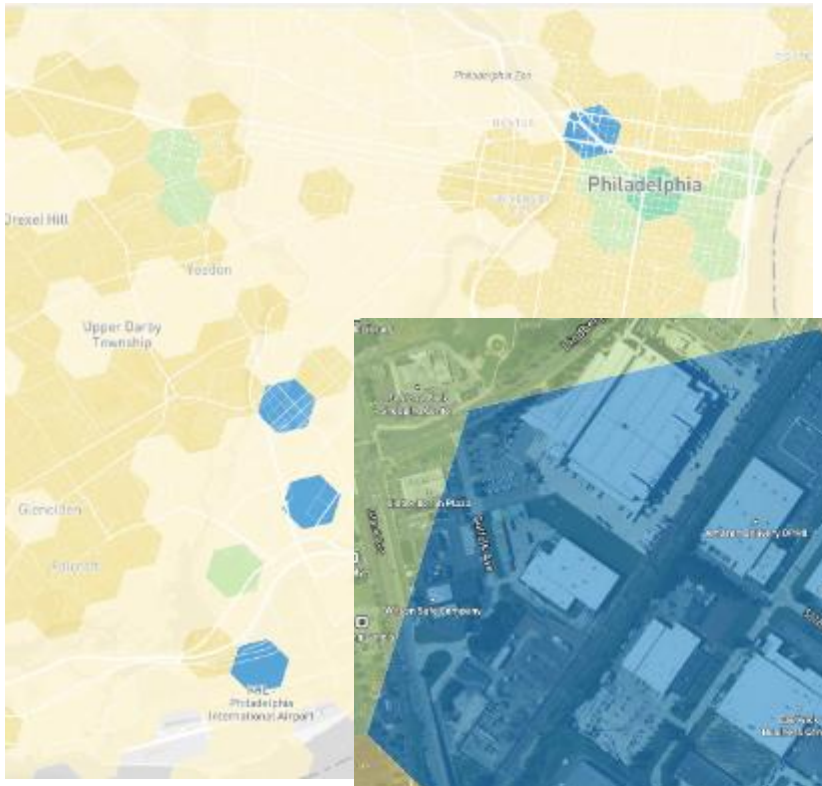
EPRI

Interactive Energy Map: Philadelphia Area

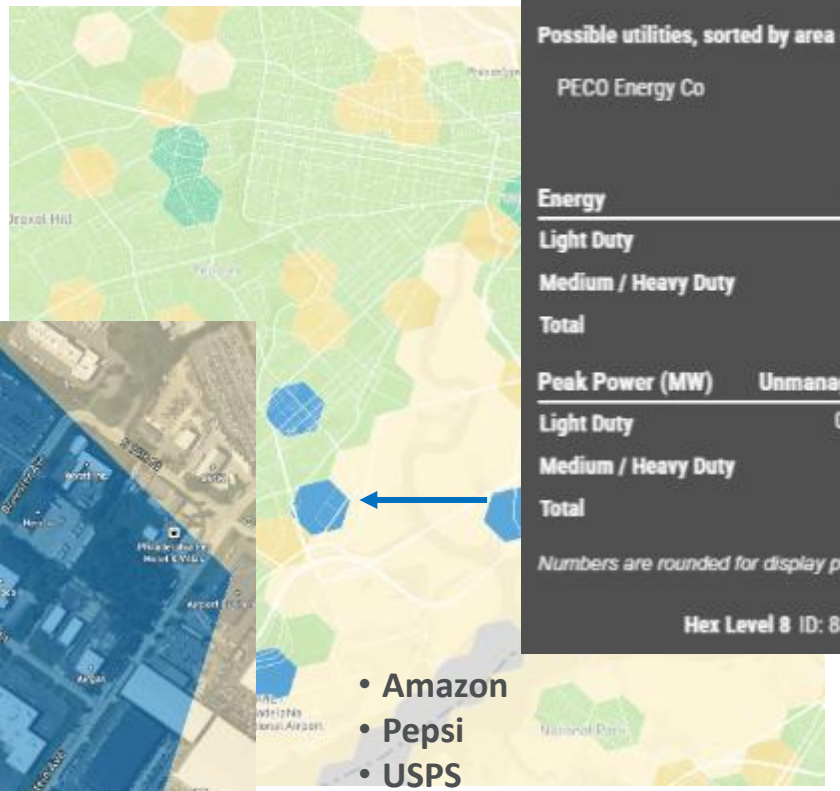
2026 to 2030 to Full Electrification Comparison

EVs2Scale 2030

2026



2030



Totals for this Hexagon

Possible utilities, sorted by area (largest first):

PECO Energy Co

Energy	(MWh / Day)
Light Duty	0.313
Medium / Heavy Duty	14
Total	14

Peak Power (MW)	Unmanaged	Managed
Light Duty	0.03	0.032
Medium / Heavy Duty	4	4
Total	4	4

Numbers are rounded for display purposes.

Hex Level 8 ID: 882aacb2e3fffff

Full Electrification

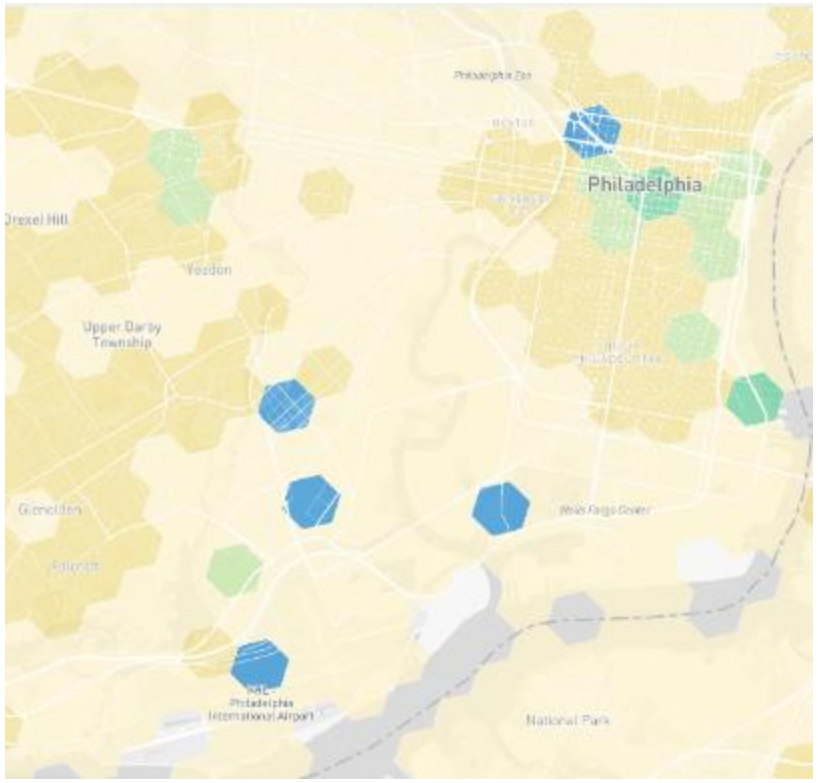
- **Amazon**
- **Pepsi**
- **USPS**
- Airgas
- Sixt
- 5 other businesses
- (Enterprise just to the east)

Hex 8 (0.28 mi^2)

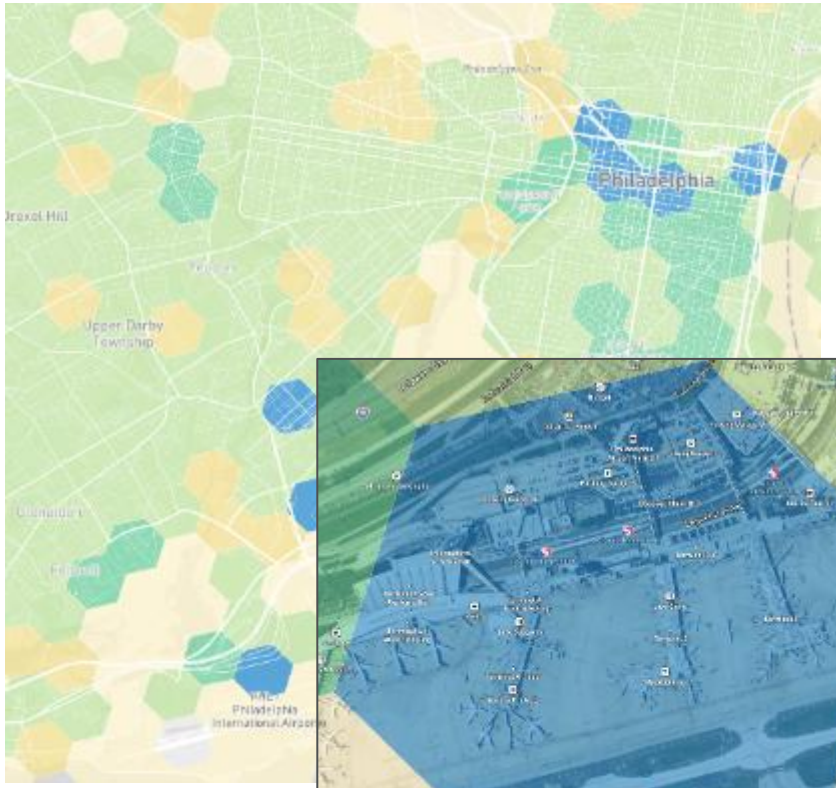
Interactive Energy Map: Philadelphia Area

2026 to 2030 to Full Electrification Comparison

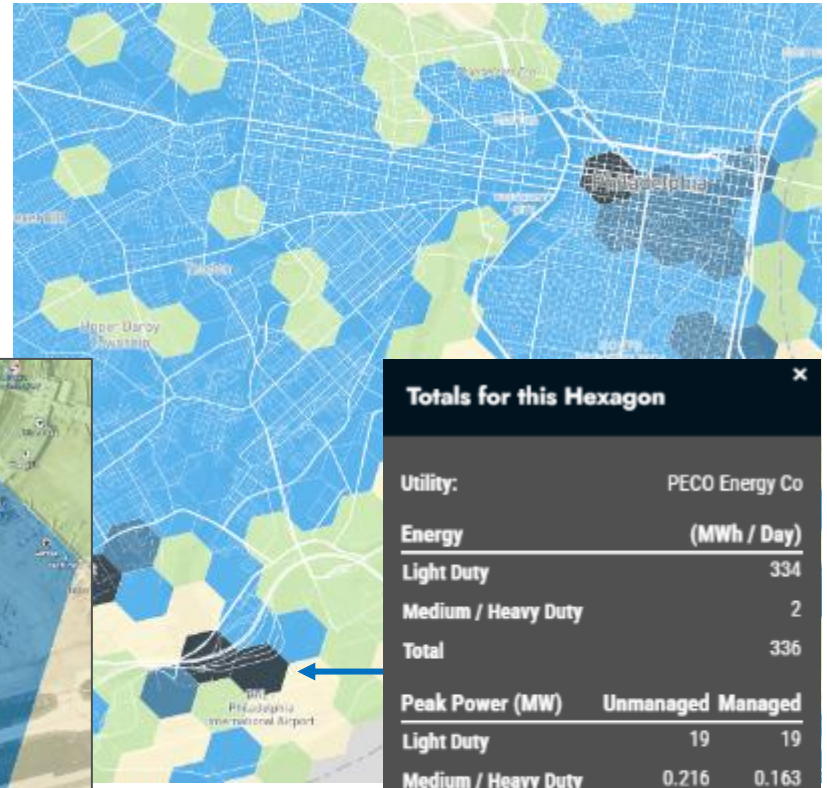
2026



2030



Full Electrification



Totals for this Hexagon

Utility:	PECO Energy Co
Energy	**(MWh / Day)**
Light Duty	334
Medium / Heavy Duty	2
Total	336

Peak Power (MW)	Unmanaged	Managed
Light Duty	19	19
Medium / Heavy Duty	0.216	0.163
Total	20	19

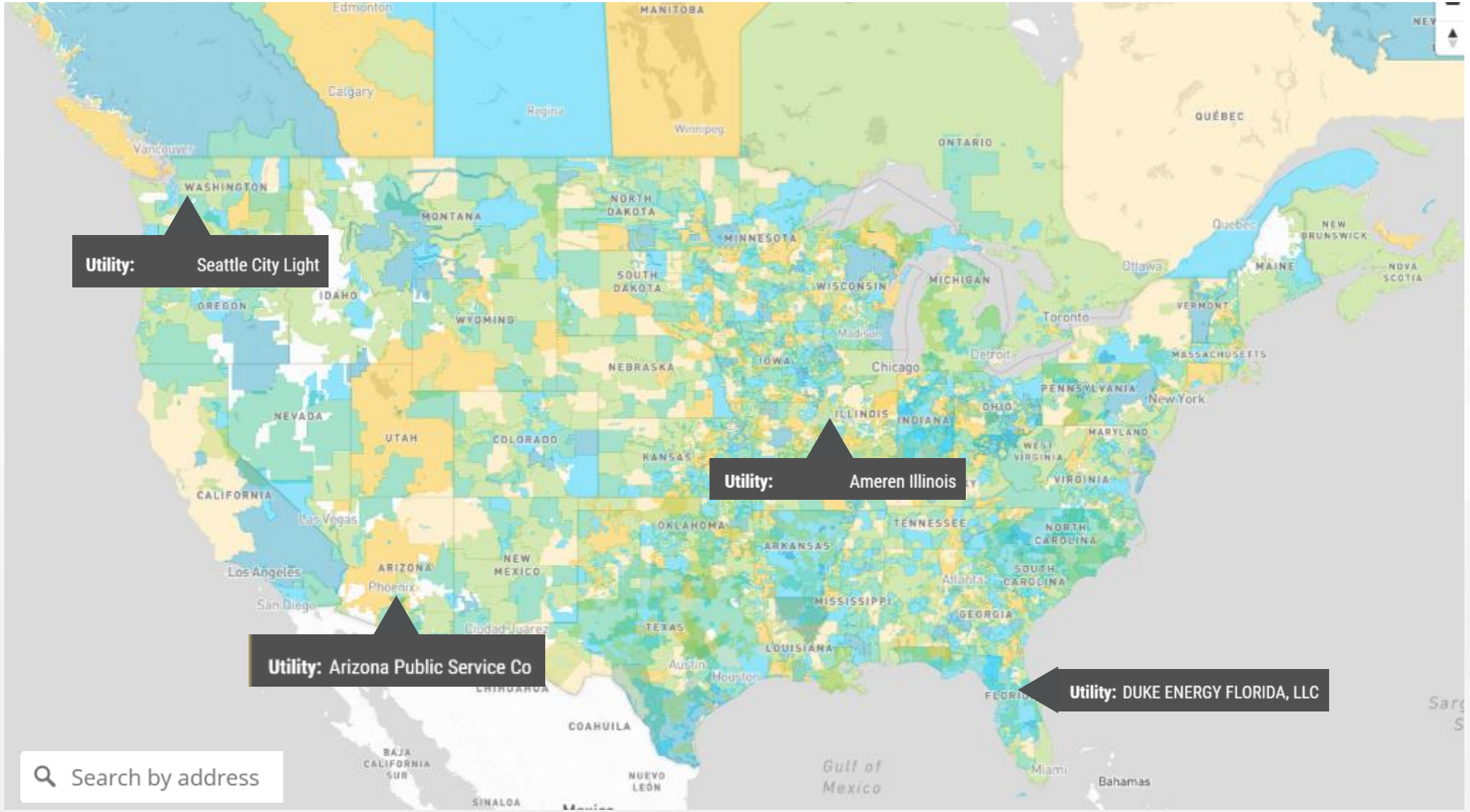
Numbers are rounded for display purposes.

Hex Level 8 ID: 882aacb2b5fffff

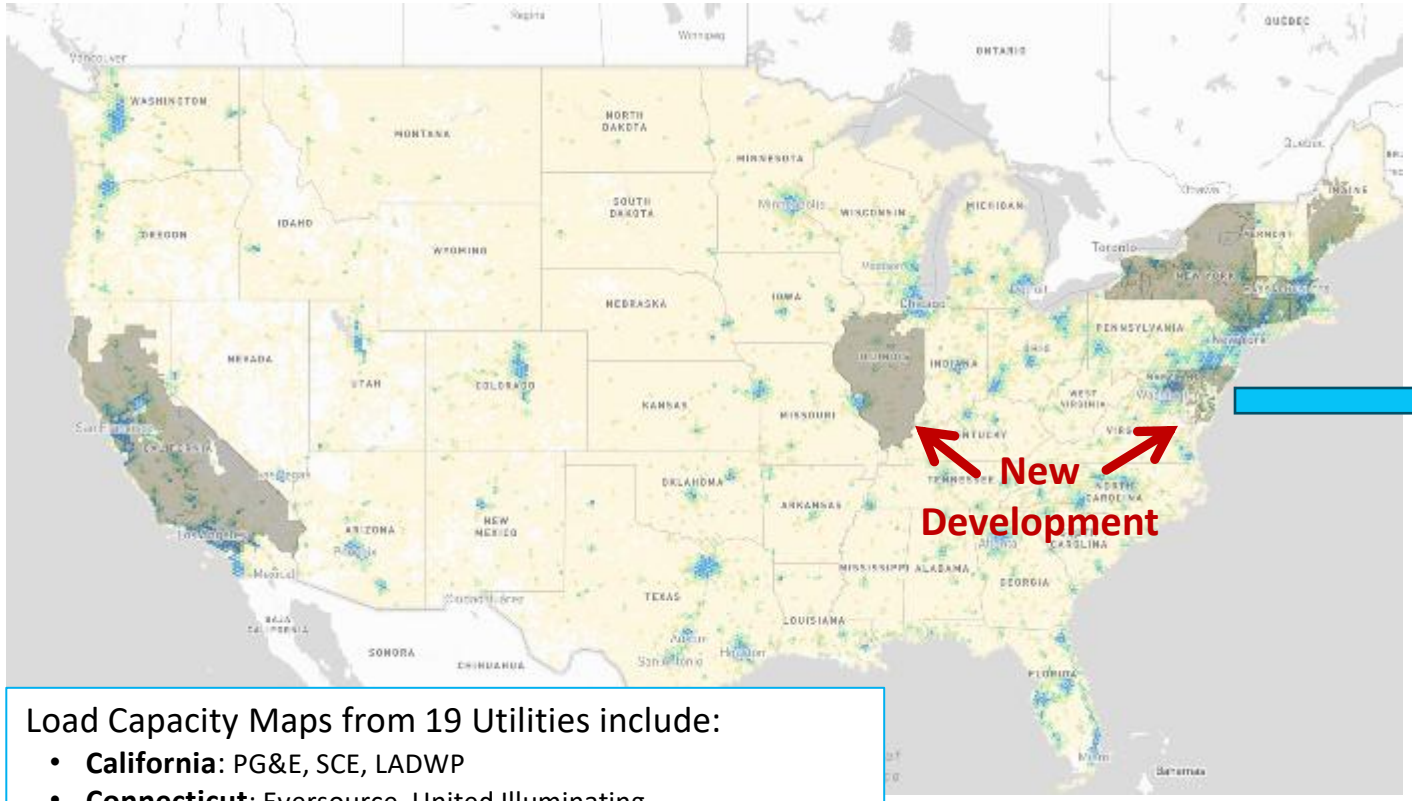
- Enterprise
- Avis
- Budget
- Dollar
- Airport Parking

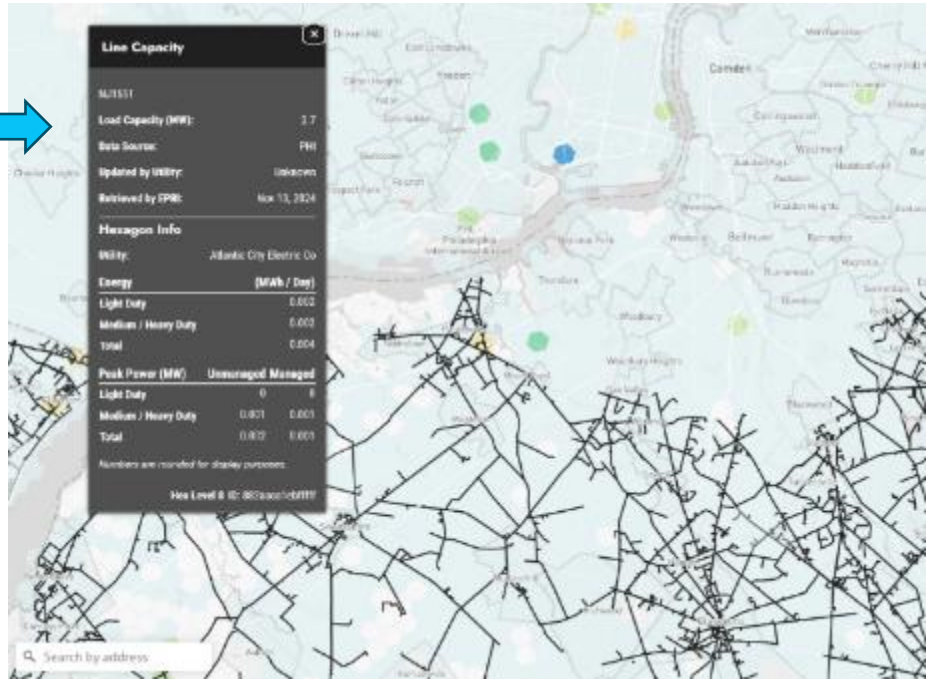
Hex 8 (0.28 mi^2)

eRoadMAP | Utility Service Territory Maps



eRoadMAP | Utility Load Hosting Capacity Maps





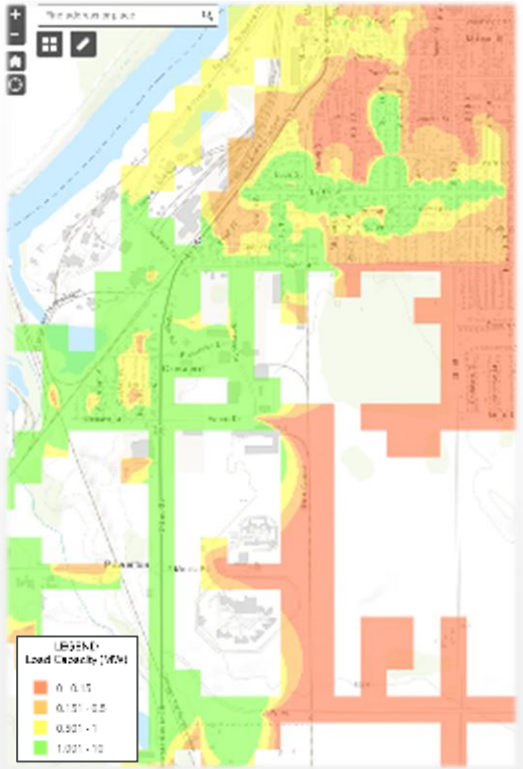
Load Capacity Maps from 19 Utilities include:

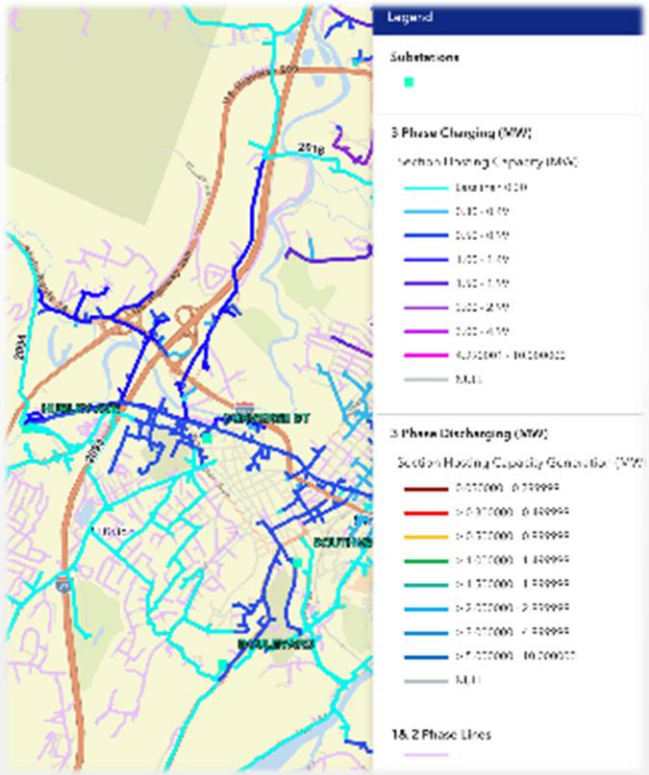
- **California**: PG&E, SCE, LADWP
- **Connecticut**: Eversource, United Illuminating
- **Illinois**: Ameren, ComEd (pending)
- **Delaware**: Delmarva
- **Maine**: Central Maine Power
- **Massachusetts**: National Grid
- **Maryland:** Pepco, Delmarva, BG&E
- **New York**: National Grid, ConEd, Orange & Rockland, Central Hudson, NYSEG, and Rochester G&E
- **New Jersey**: Orange & Rockland, Atlantic City
- **Rhode Island**: Rhode Island Energy

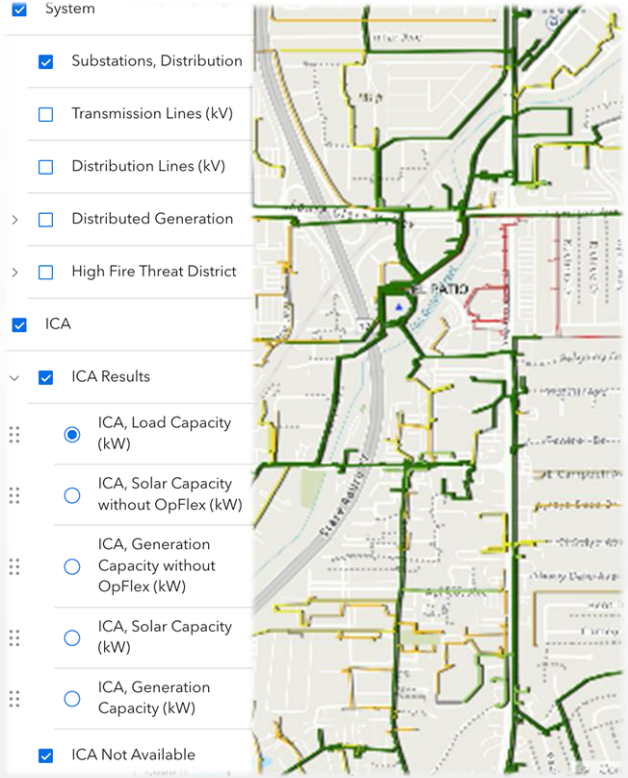
eRoadMAP | A Variety of Capacity Formats to Alleviate Security Concerns

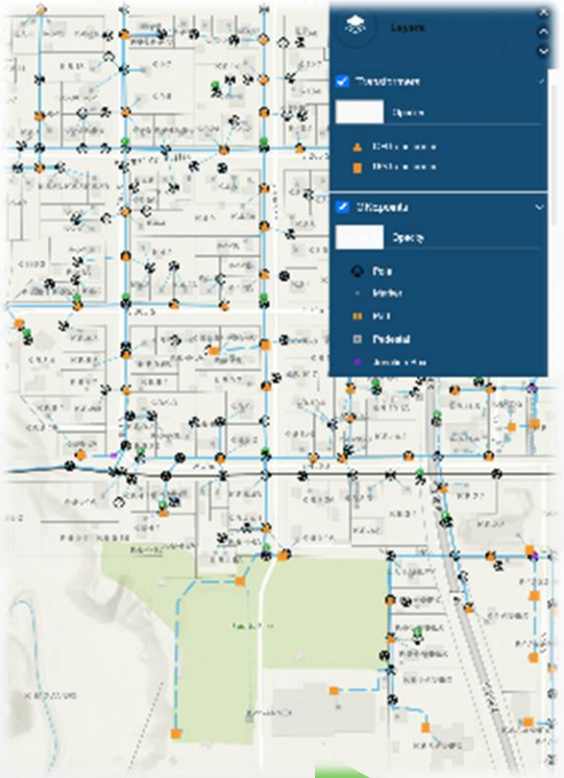
EVs2Scale 2030

- **Controlled Granularity:** Maps can be published at a resolution that balances usefulness with security—e.g., hexagonal zones or aggregated feeder data.









Heatmap → Capacity Maps → Multi-Layered Maps → Specific Asset locations

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eRoadMAP | Utility Load Hosting Capacity Map Activity

EVs2Scale 2030

Currently Integrated in eRoadMAP:

- Ameren-IL
- Atlantic City Electric (Exelon)
- Baltimore Gas & Electric (Exelon)
- Central Maine Power
- Central Hudson Gas & Electric
- ConEdison
- Delmarva (DE, MD) (Exelon)
- Eversource
- LADWP
- NYSEG
- National Grid (MA, NY)
- Orange & Rockland
- Pepco Holdings (Exelon)
- PECO (Exelon) *
- PG&E
- Rhode Island Energy
- Rochester G&E
- SCE
- United Illuminating

* Next release EVs2Scale Participant

Potential Integration (public capacity maps):

- Commonwealth Edison (Exelon)
- Dominion
- DTE
- HECO
- HydroOne
- Indiana-Michigan Power (IMP)
- NV Energy
- PSE&G (NJ)
- Puget Sound
- San Diego Gas & Electric

Potential Integration:

- Alliant Energy
- American Electric Power
- Austin Energy
- Center Point Energy
- Consumers Energy
- Duke Energy
- DTE
- FirstEnergy (JCPL)
- Great River Energy
- JEA
- OPPD
- Portland General Electric
- Salt River Project
- Seattle City Light
- SMUD
- Southern Company
- Tennessee Valley Authority
- WEC Energy
- Xcel Energy (CO, MN)

EPRI

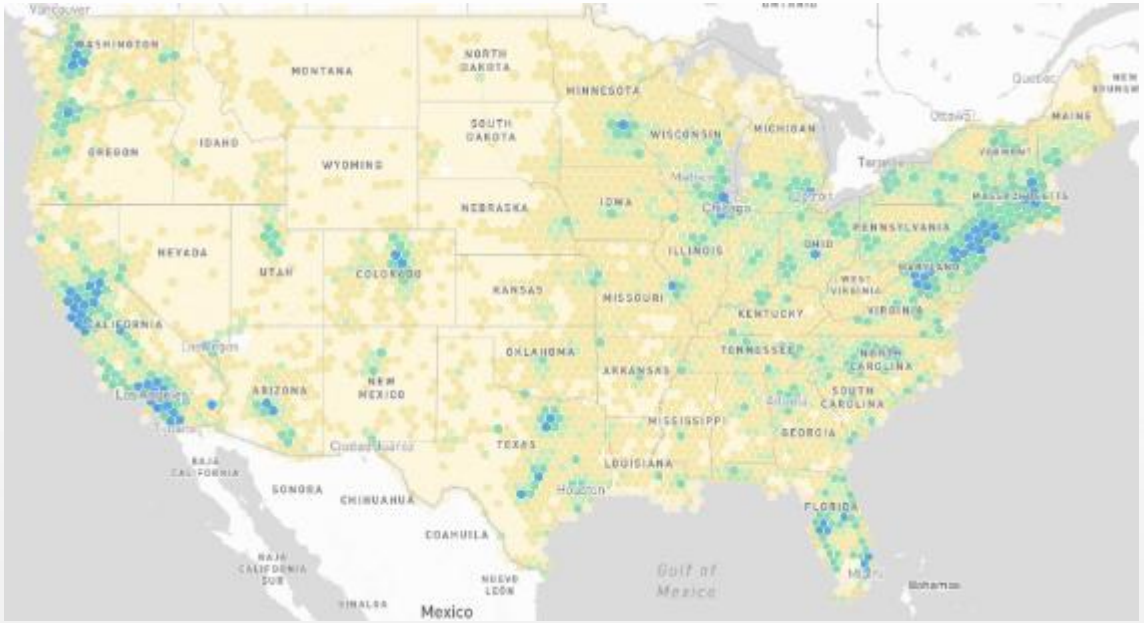
Confidence requires creating Public and Private Transparency in Planning

EVs2Scale2030

eRoadMAP

Public Tool

Visualization and Communication (Hex8)

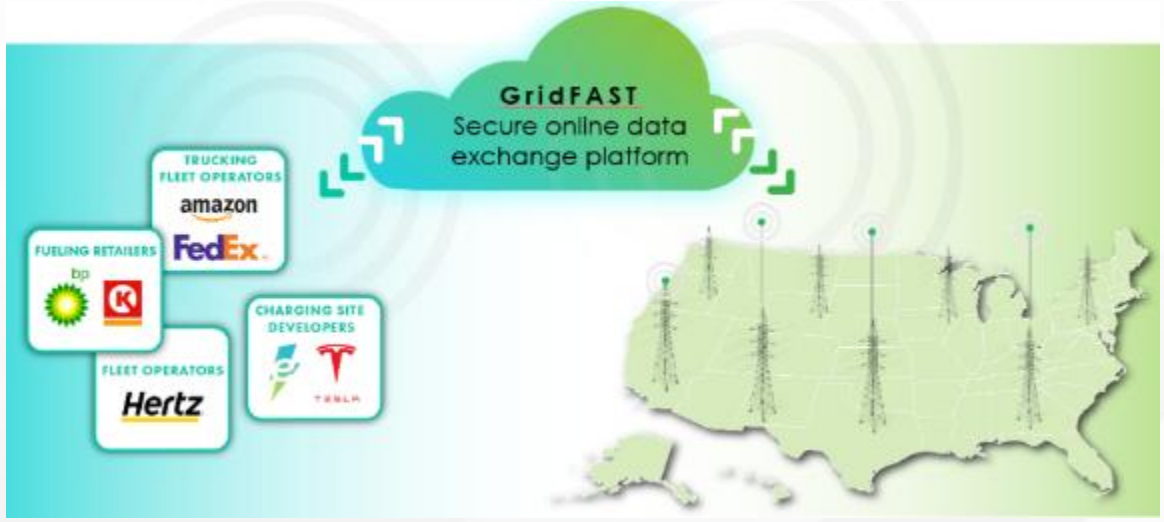


https://eroadmap.epri.com/

GridFAST

Industry Platform

Planning and Accelerating Grid Interconnects (site level)

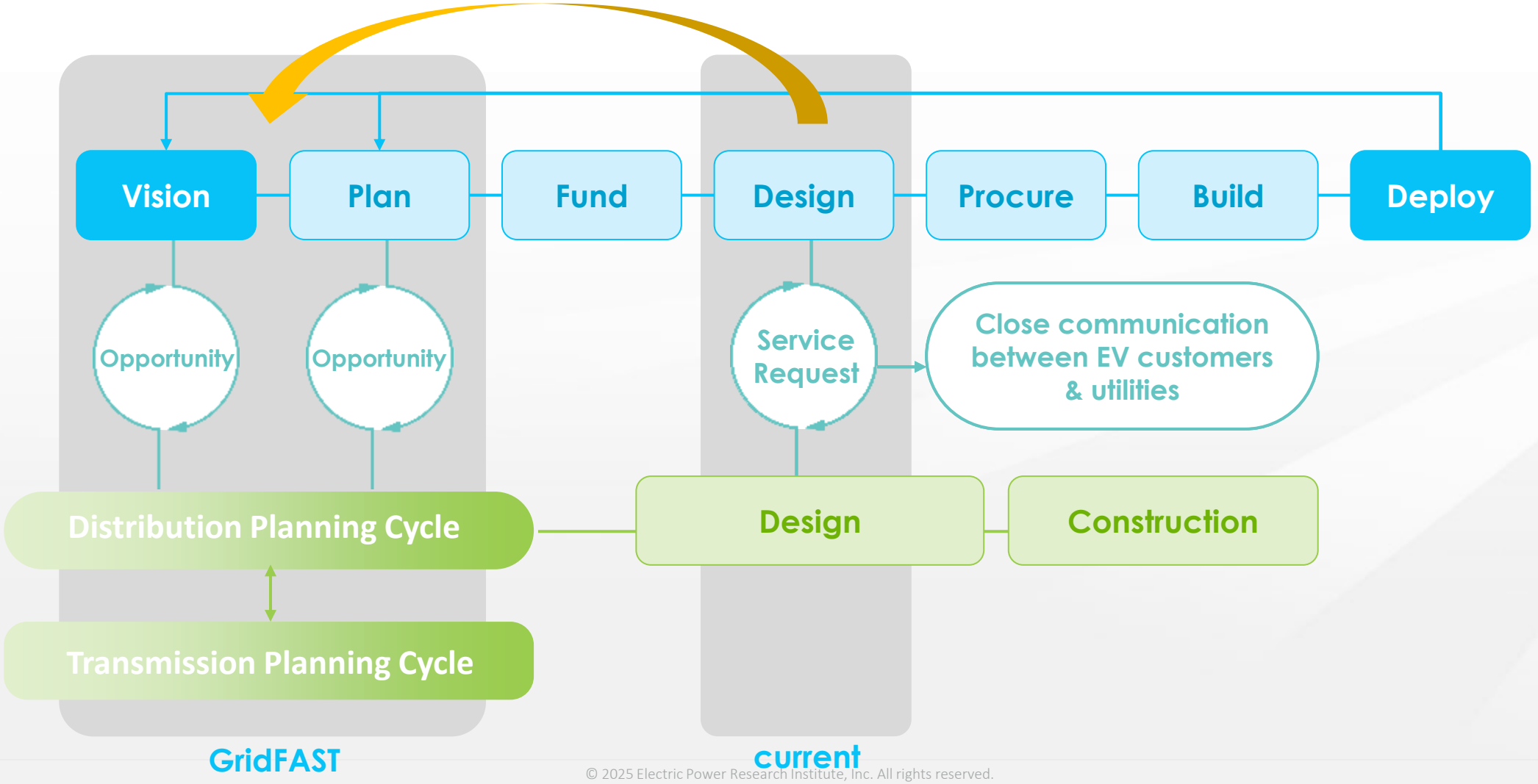


Soft Launch March 2025

EPRI

GridFAST is a tool to shape and receive pre-service application information from EV customers

The biggest lever to streamlining MW+ service requests hinges on utilities having better visibility into EV customer plans and intentions ahead of the Service Request



GridFAST

EVs2Scale 2030

Improve transparency in EV charging planning to inform grid investments and accelerate grid interconnects

2024-2035 plans defining loads, locations, timing

Illustrative

GridFAST
Secure online data exchange platform

Utility hosting capacity indicating grid readiness, timing to support EV charging loads

EPRI

GridFAST | Addressing 15 Pain Points in Grid Interconnection

EVs2Scale 2030

Vision & Strategy

Provide tools to educate fleets and **make the case for electrification**

Help fleets forecast where/when to electrify (beyond 2 years) to **drive more certainty in fleet plans**

Create a standard practice (across utilities) to gather fleet plans early so **utilities can incorporate into D&T planning**

Validate fleet plans so utilities can confidently invest in costly grid upgrades

Help smaller utilities establish EV processes so they can better support EV projects

Plan & Forecast

Kickstart fleet communications with the right utility/POC to **eliminate nonvalue-added fleet efforts**

Educate fleets on electricity and utility processes and programs to **eliminate nonvalue-added utility efforts**

Help fleets gain more accurate insights into grid capacity, upgrade timelines and costs, so they can **select more viable locations**

Help utilities provide real-time, updated feeder capacity data so fleets can **select more viable sites before submitting a formal request**

Help fleets model and calculate charging and power scenarios to **minimize costly and potentially unnecessary grid upgrades**

Provide fleets with smart, interactive tools to alleviate utility bottlenecks (e.g., staff shortages) **without having to wait for a utility engineer**

Funding

Help fleets understand how to qualify/apply for grant and incentive programs so they have **full transparency into the process ahead of time**

Design & Engineering

Create a standardized process for service requests across the utility industry to minimize time-consuming and repetitive workload

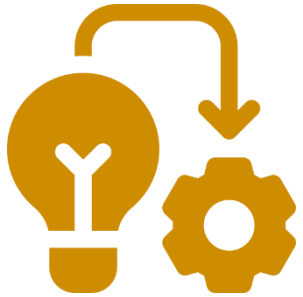
Help utilities provide more timeline transparency to fleets (e.g. supply chain delays, resourcing, permits, easements) so **fleets can account for it in their project planning**

Approvals & Procurement

Set a standard for fleet x utility best practices to **minimize back and forth and timeline delays**

How GridFAST works at each project stage

EVs2Scale 2030

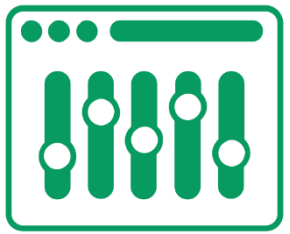


Project Input

EV customers enter their project concepts into GridFAST, and can view hosting capacity maps, if available

Utility Match

GridFAST matches EV projects to the relevant utility to start the exchange based on vetted information



Capacity Information Exchange

GridFAST is an easy and secure system for utilities to provide program and processes info to EV customers

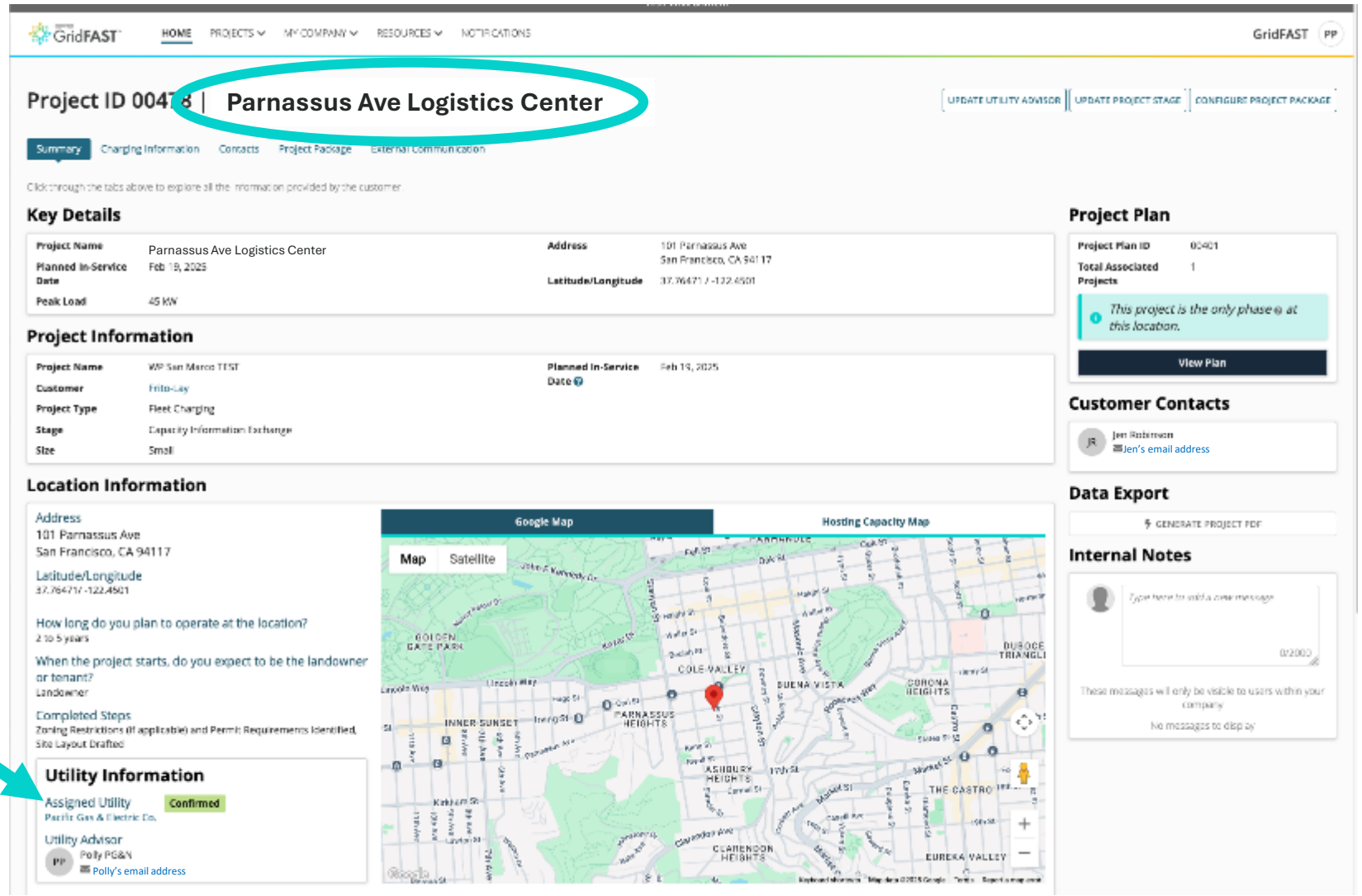
Preparation of Service Request

EV customers finalize project details

Service Request

EV customer information in GridFAST submitted to utility when they're ready to move forward

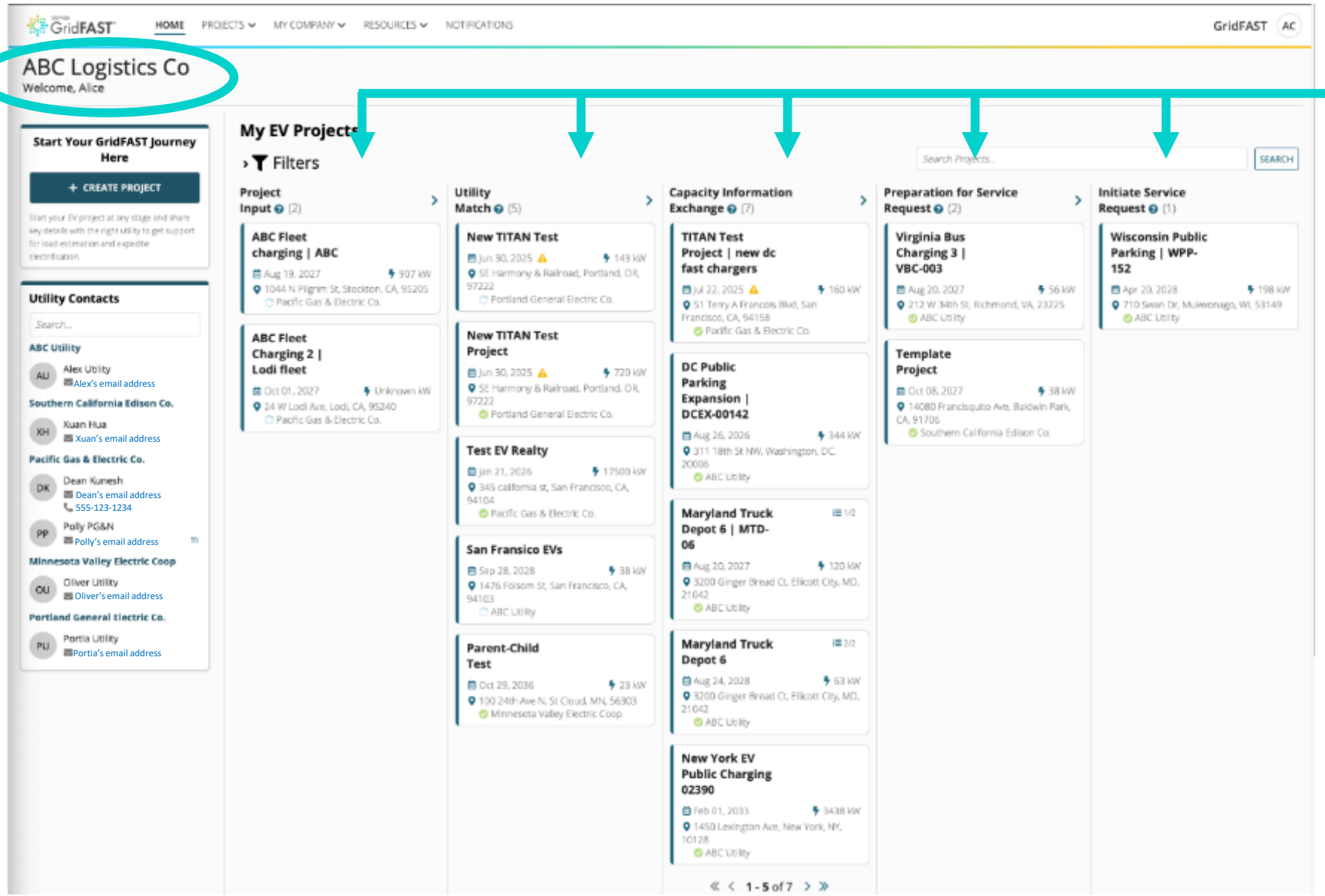
GridFAST | Example of a Customer Site Project



PG&E Confirmed

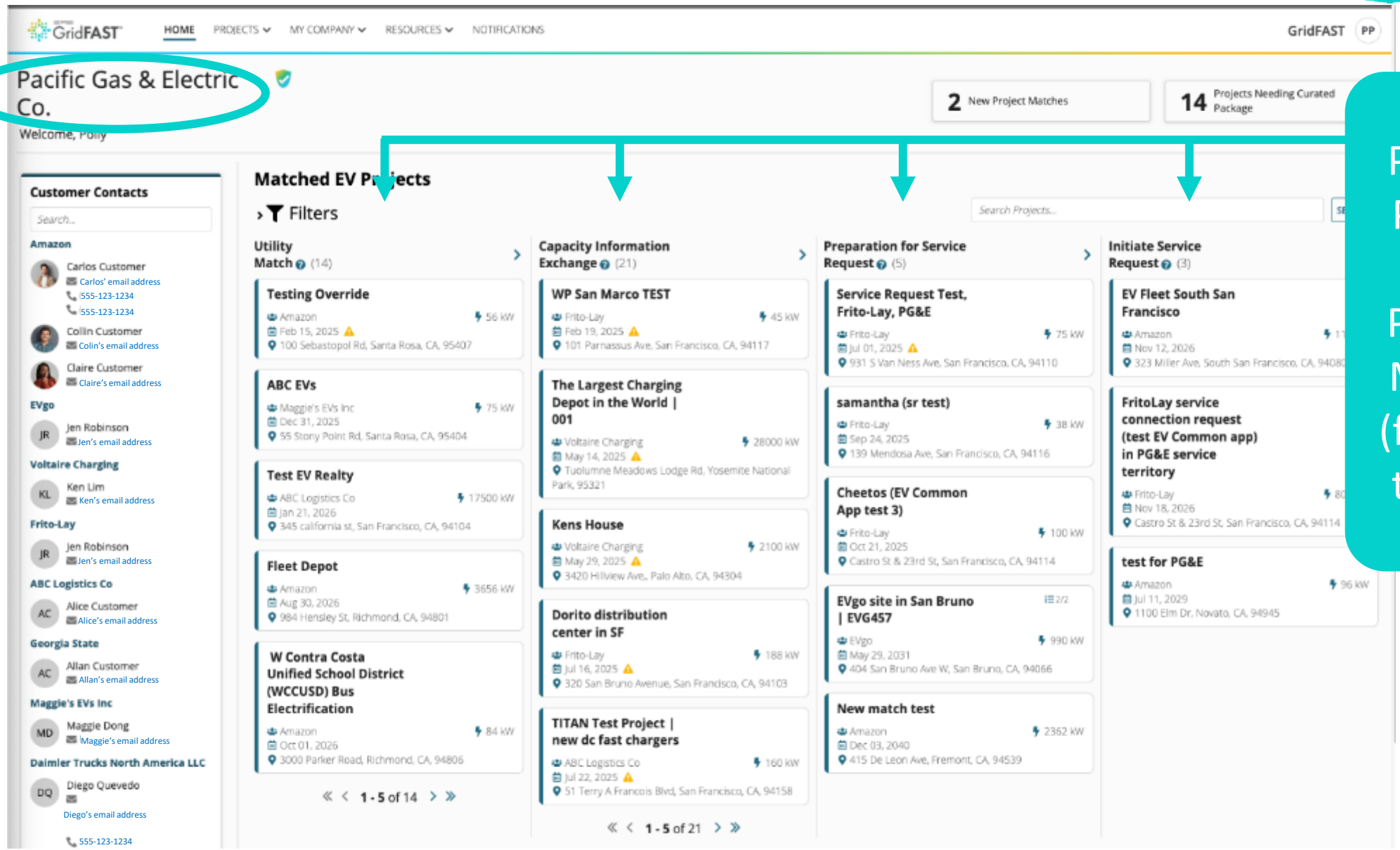
Screenshot for illustrative purposes only; not real companies or data

GridFAST | Customer's Project Summary View



Phase of My Projects as Planning Matures (from left to right)

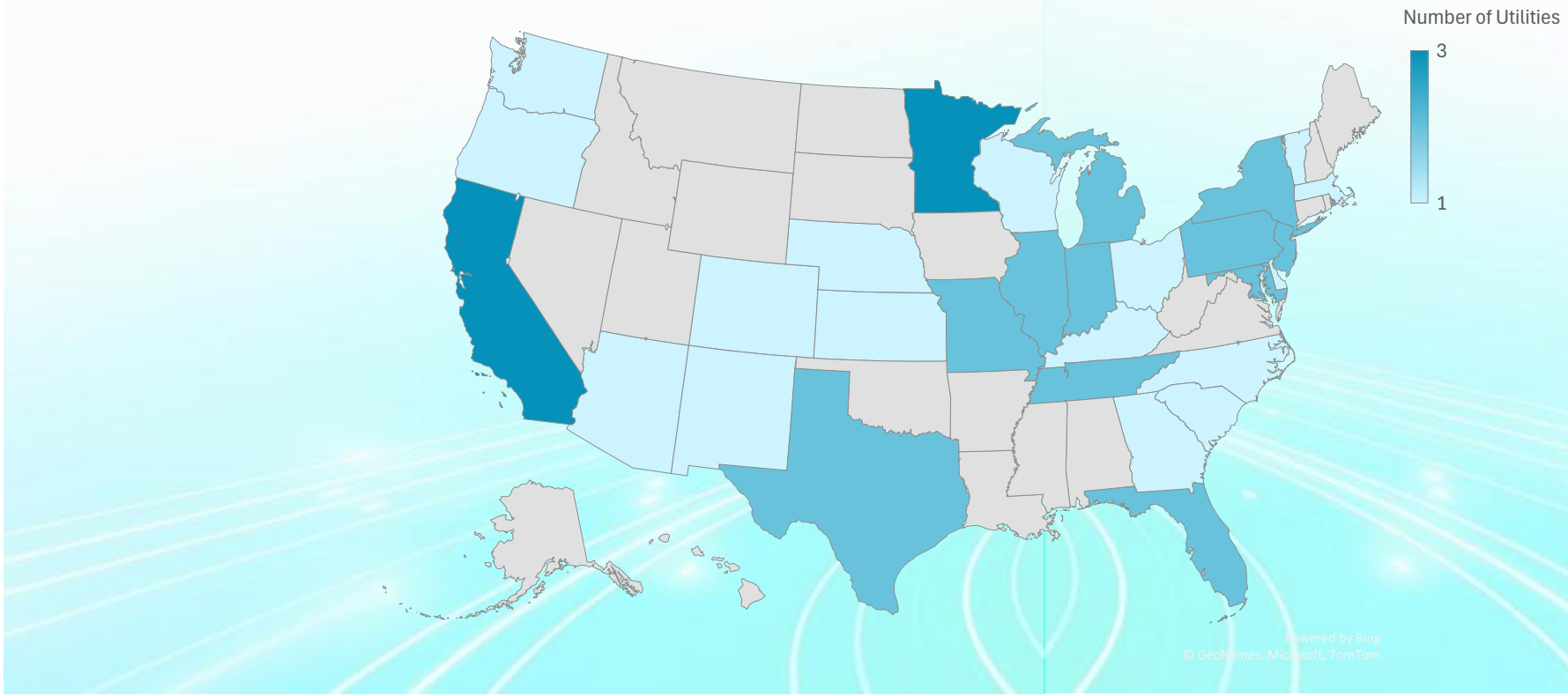
GridFAST | Utility's Project Summary View



Phase of Projects as Planning Matures (from left to right)

Utility Engagement is Growing

EPRI GridFAST™



Utilities in 30 States (May 2025)

Ameren Illinois · CenterPoint Energy · Duke Energy · JEA · Consumers Energy Count on Us · SMUD · Southern California Edison · Your Energy Partner OPPD Omaha Public Power District · PG&E · PGE

Ameren Missouri · ConEdison · exelon · SRP · MVEC · Seattle City Light · nationalgrid · pepco An Exelon Company · Xcel Energy

50-State GridREADY

- A resource to **promote a common data-based understanding across the states** of the need and value of preparing the grid for EV loads
- A resource **available to NGOs** and others **to reinforce common datapoints** and reference materials
- All 50 states covered, **no state left behind**

Available here:
https://epri.app.box.com/s/yuwha9vru3clplnznt4az9kky4b644ai

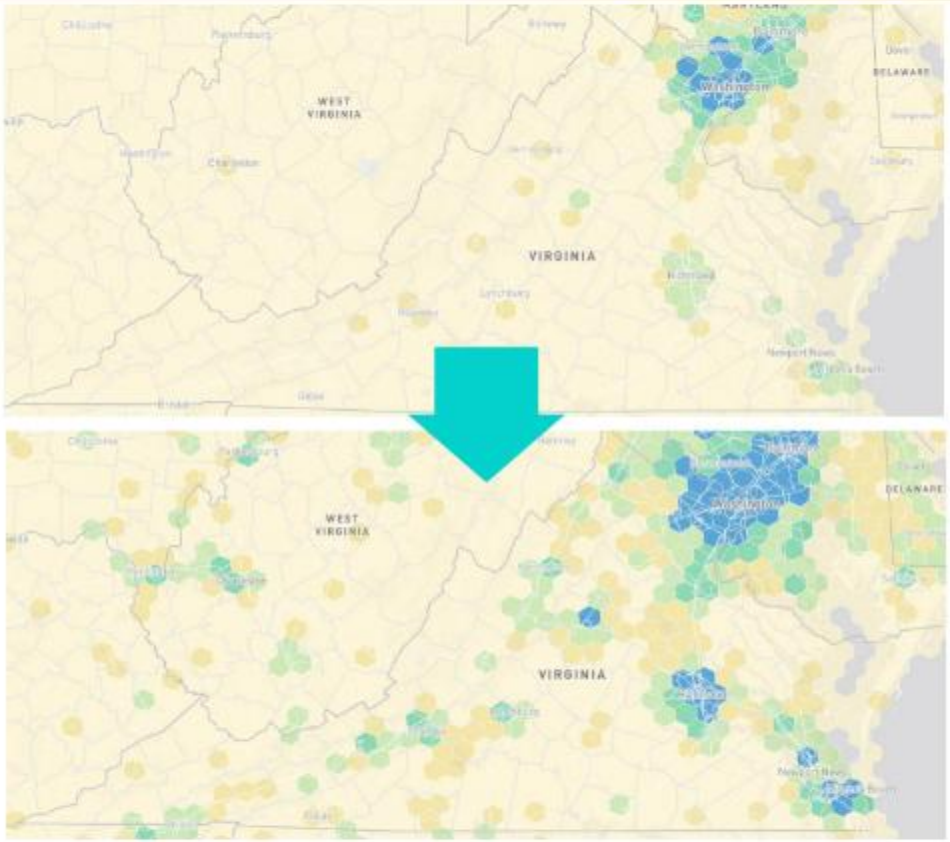
EPRI GridREADY

PREPARING FOR EV LOADS AT SCALE THROUGH IMPROVED PLANNING, PRIORITIZATION, AND PROACTIVENESS

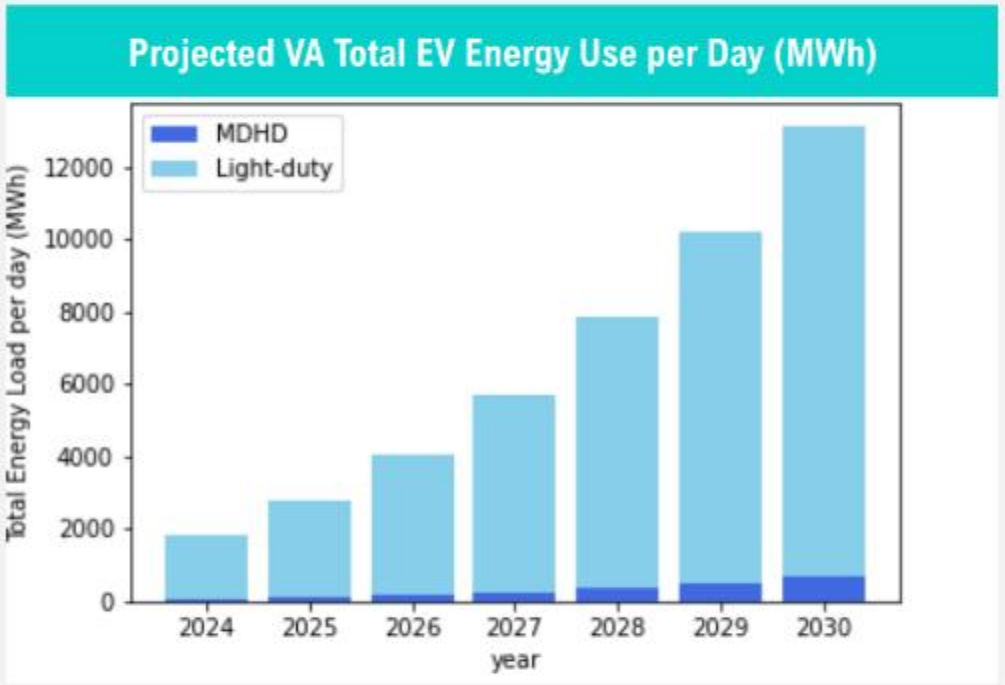
VIRGINIA

FEBRUARY 2025

Prudent Grid Investments Require That Utilities (and Utility Regulators) Know Where + When EV Loads are Coming



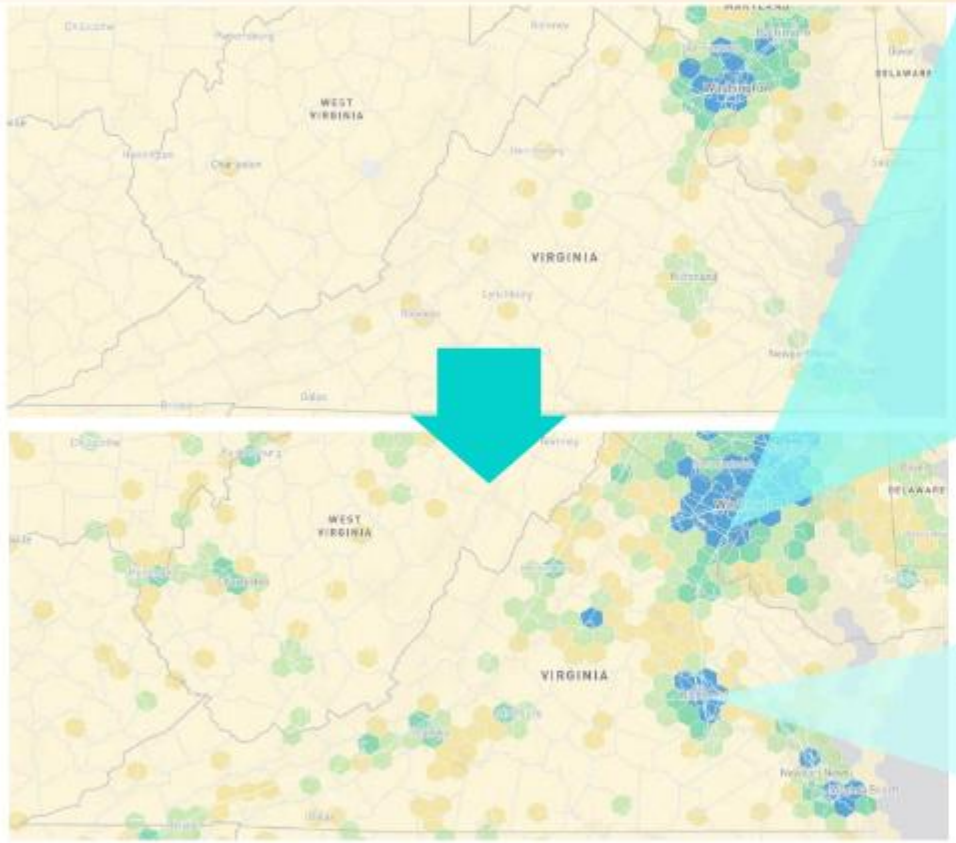
EPRI's **eRoadMAP**™ tool identifies **where and when** EV load is expected at the feeder level through 2030 and beyond -- the goal is to build confidence in prioritized investments. The **unique dataset includes actual fleet plans** from some fleets operating across VA.



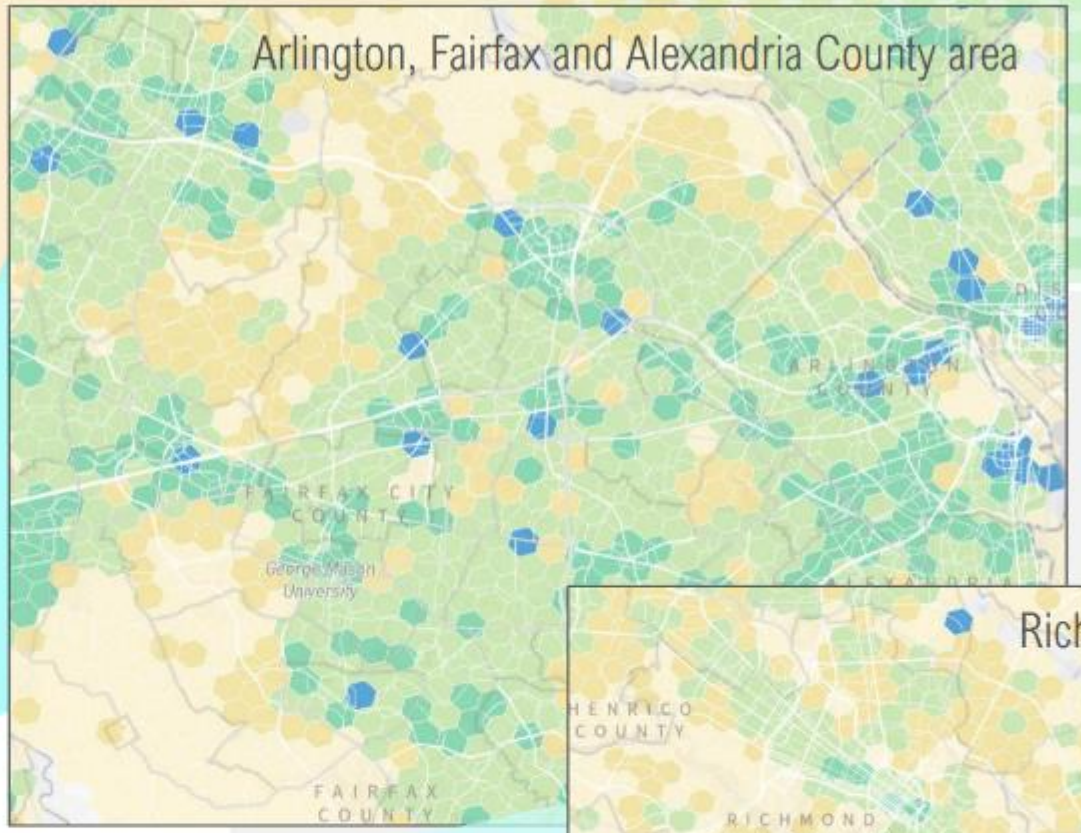
- LD load is large, but typically spread across the entire distribution system.
- MHD load is clustered in fewer, denser locations.
- Total projected load in 2030 is equivalent to 1.22 million new homes.[5]

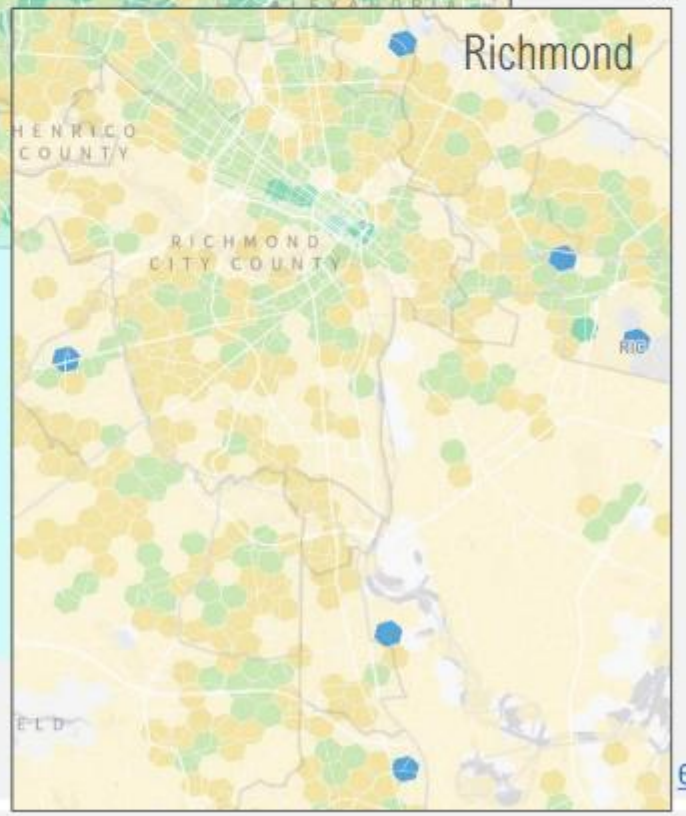
eroadmap.epri.com/

EPRI GridREADY



2030





Areas of interest include the major cities in VA, including northern VA and Richmond shown here, along with the freight corridors.

EPRI's **eRoadMAP**™ tool identifies **where and when** EV load is expected at the feeder level through 2030 and beyond -- the goal is to build confidence in prioritized investments. The **unique dataset includes actual fleet plans** from some fleets operating across VA.

eroadmap.epri.com/

EPRI

eRoadMAP™ Identifies Expected Load "Hot Spots" and Resulting Grid Regions Requiring More Proactive Planning

Distribution of expected loads across VA over time (Hex8 level)

Year	2025	2026	2027	2028	2029	2030	100% Elec.
# of hexes showing <1 MWh	93,425	93,173	92,792	92,330	91,738	90,939	77,213
# of hexes showing 1-3 MWh	308	537	868	1,231	1,682	2,284	8,522
# of hexes showing 3-7.5 MWh	26	37	80	169	301	487	4,445
# of hexes showing 7.5-10 MWh	11	11	7	9	15	22	1,252
# of hexes showing 10-15 MWh	10	15	14	14	15	17	1,296
# of hexes showing > 15 MWh	8	15	27	35	37	39	1,177

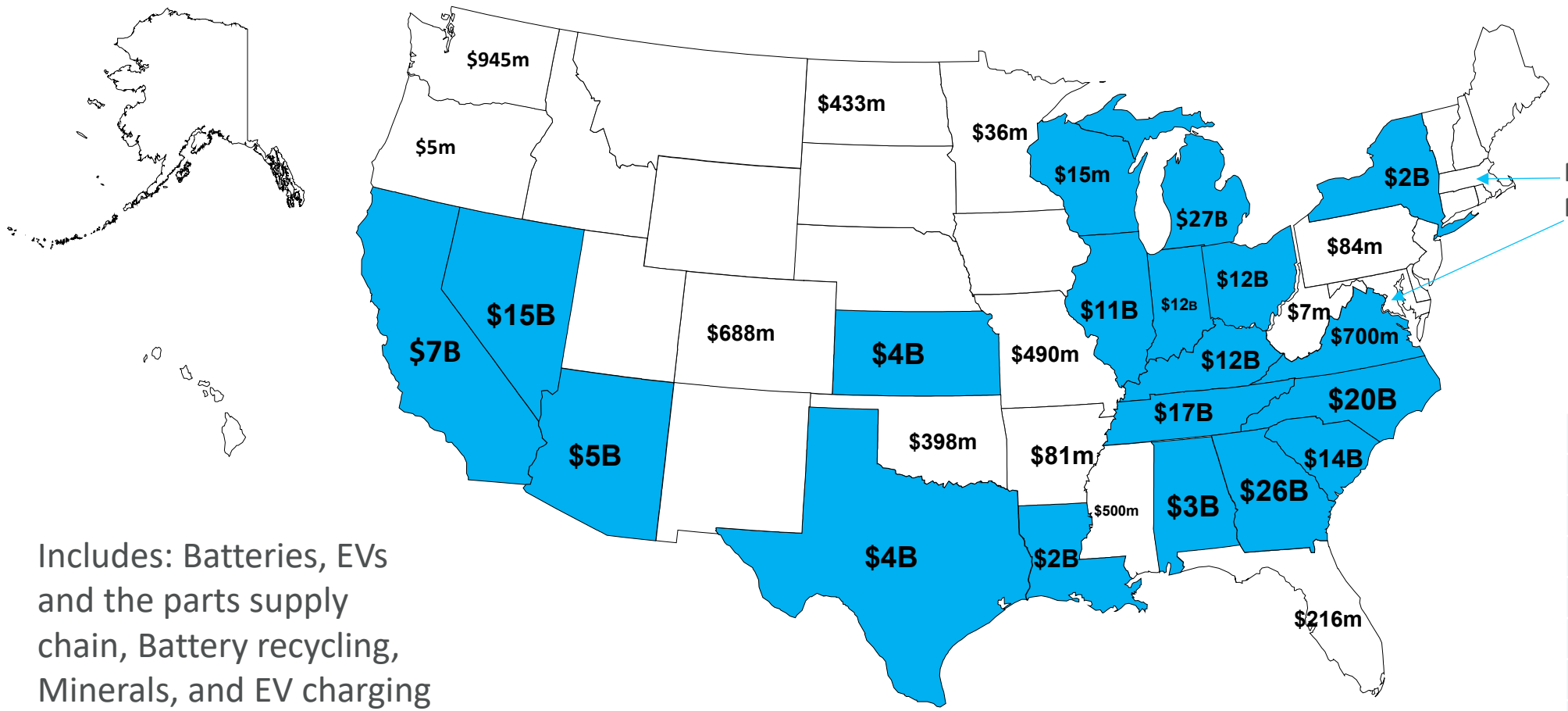
- Hexagons at a resolution of Level 8 represent 0.28 square miles (or ~1-2 distribution feeders).
- Most projected Hex8 loads over time are **< 1 MWh, indicating a load that is relatively easily supported through traditional utility planning processes.**
- But **loads > 10 MWh likely require proactive planning today** to achieve customer timelines (e.g. fleet operators, property developers, charging providers).

Engaging early with fleet operators and property/charging developers in these priority locations is critical and will help ensure longer lead-time grid investments are both timely and prudent.

eroadmap.epri.com/

EV-Related Manufacturing Investment by State

Shown in GridREADY



Includes: Batteries, EVs and the parts supply chain, Battery recycling, Minerals, and EV charging manufacturing

More than $1B investment

Top Ten States ($166B)

MI	$26.7
GA	$26.4
NC	$19.7
TN	$16.8
NV	$14.5
SC	$14.3
IN	$12.4
OH	$12.3
KY	$12.1
IL	$10.9

As of 1/18/25; Data from Blue Green Alliance Foundation and Atlas Public Policy

Virginia is Already Benefiting From The Transition to EVs

Economic Development:

- Since 2007, VA has benefited from more than $701 million in EV-related investment.[7]
- More than 1,232 jobs have been added in EV manufacturing and the EV supply chain.[8]

Mack Trucks is investing $14.5 million to expand its Roanoke Valley Operations manufacturing facility to prepare for higher demand, including for medium-duty EVs.[13]

Volvo Trucks North America manufactures the VNR Electric at their manufacturing facility in New River Valley, VA.

EV-related Manufacturing:

● Batteries ● Medium/Heavy-Duty Vehicles ● Parts ● Minerals ● EV Charging

Fleet Commitments:

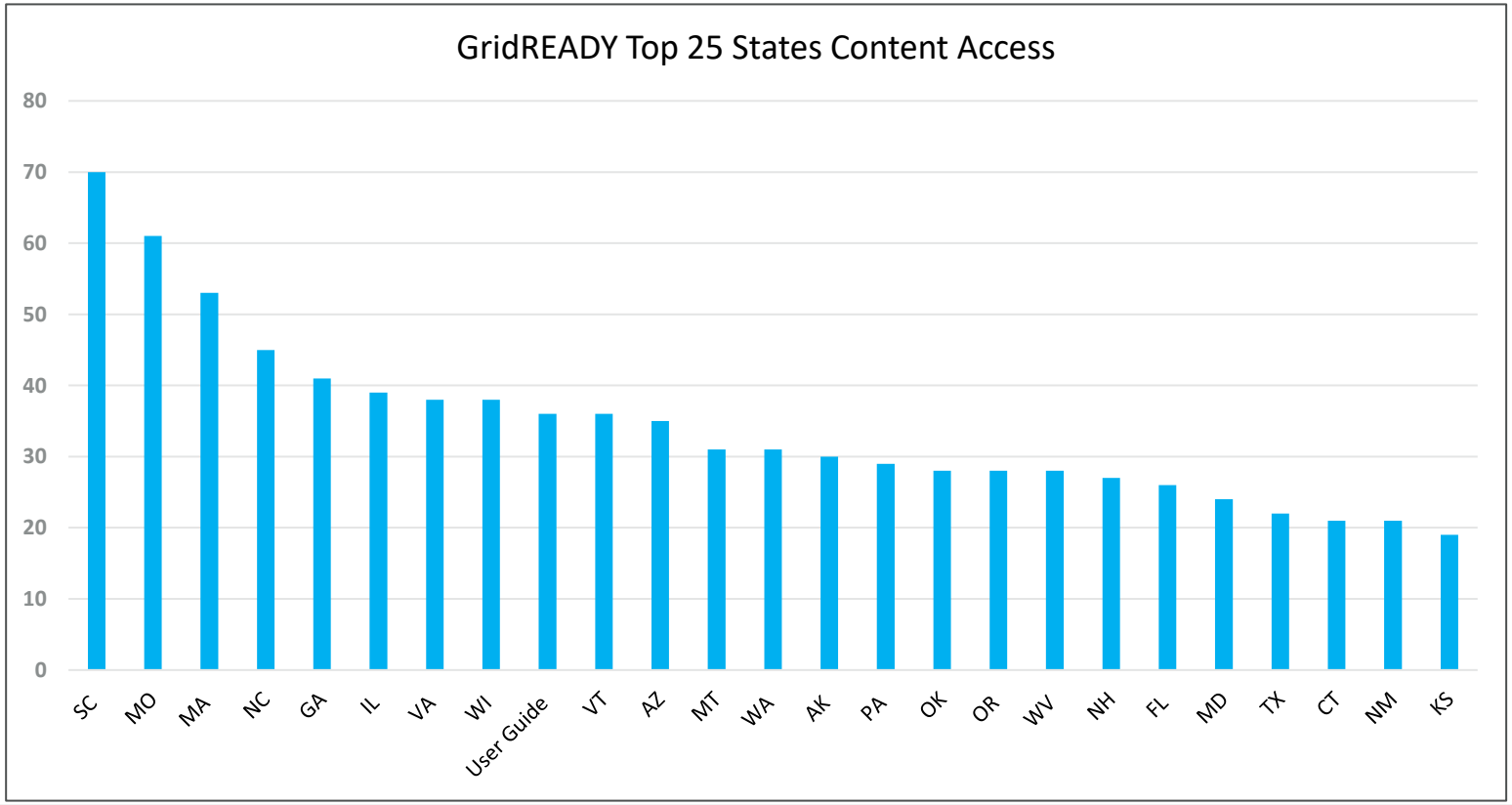
The largest companies in VA, by employment, have plans to electrify their fleets and/or install EV charging stations for customers[9]:

- Walmart (#1) plans to build out a network of DCFC stations across VA and achieve a zero-emission fleet by 2040.[10]
- Amazon (#2) plans to have all 100,000 delivery vans electric before 2030.[11]
- USPS (#5) plans to build out a network of DCFC stations across VA and achieve a zero-emission fleet by 2040.[12]

GridREADY Usage

- Promotes a common data-based understanding of the need for proactive grid planning
- Available to all NGOs and state leaders
- **No state left behind**

- 1,120 external downloads (March 12 – May 22, 2025)
- Highest content access: SC, MO, MA, NC, GA, IL, VA,…



Released Reports + Tools

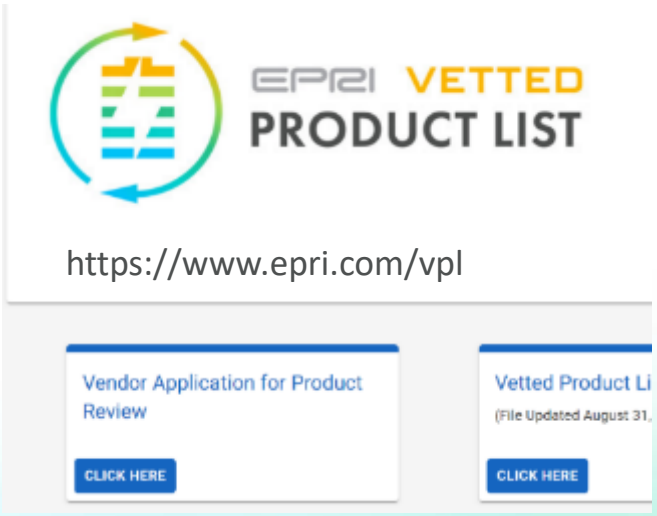
1

EVs2Scale Website

[EVs2Scale2030 | EPRI](https://msites.epri.com/evs2scale2030) --
https://msites.epri.com/evs2scale2030

2

VPL (Vetted Product List)

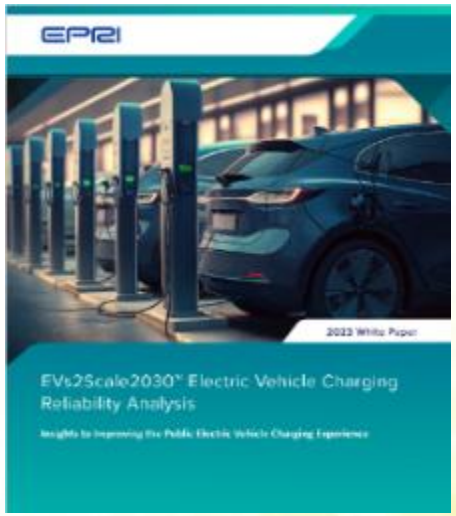


3

Grid Primer

4

EV Charging Reliability Analysis



5

6

7

GridFAST

EVs2Scale 2030™

Thank You

www.epri.com

EPRI