

Main Large-Scale Deployment Constraints



Product Timelines

The federal government is mandating that OEMs rollout electric vehicles and most dealers don't have EV chargers ready to charge them



Utility Disruption

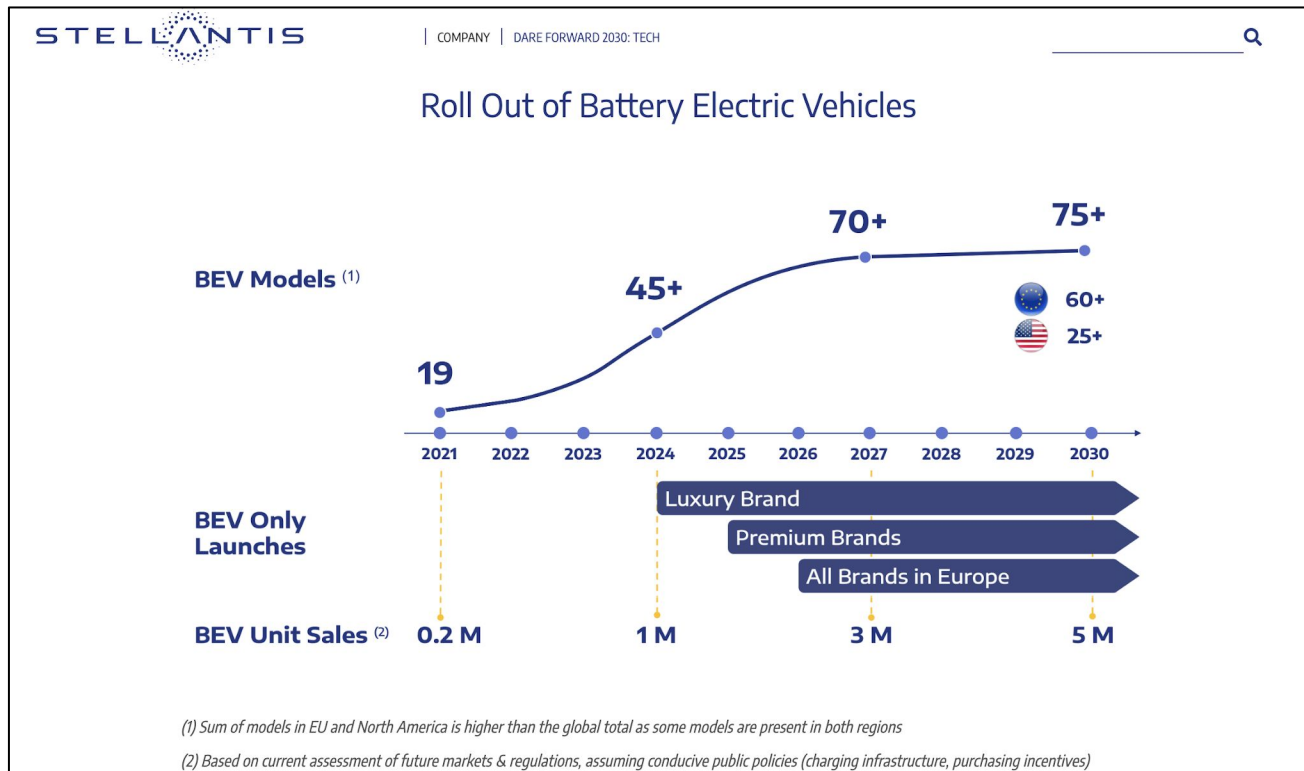
Utility companies are unable to deliver adequate power to most dealerships to charge EVs and it can take years to upgrade after submitting an EV integration plan



Financial Support

Financial assistance programs are hard to find, may have complex requirements, run out of funding quickly and require an EV integration plan to get funding

Collaboration w/ Auto Manufacturers: OEM's Product Release Timeline



Large-scale EV adopters need to be cognizant of the OEM's production timeline.

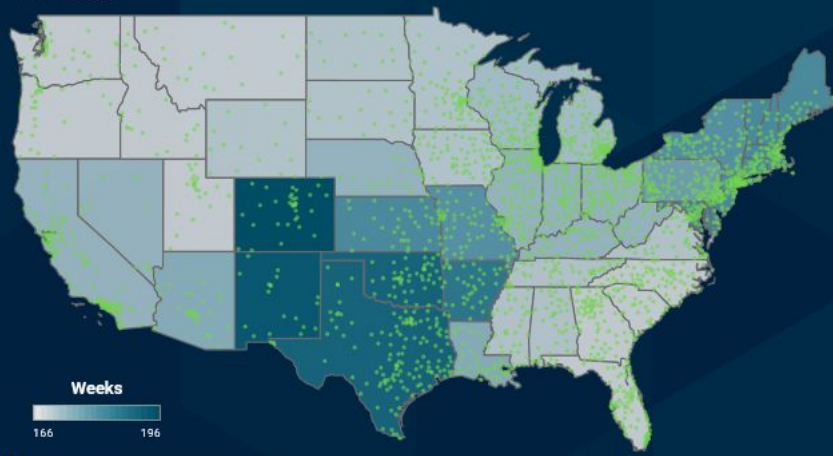
This information can be used to inform capital investment decisions

Collaboration w/ Electric Utility and Energy Providers: Utility Upgrade Lead Times

Estimated USA Utility 480 Power Upgrade Lead Times

Results

At this time, each dealership will likely have a lead time between 158 weeks (36 months) and 183 weeks (42 months) to upgrade their service to 480V 3-phase power supply.



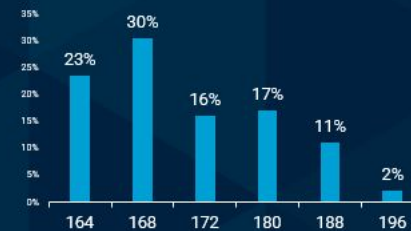
There Are 2 Primary Variables

Variable 1: Equipment Delays

The estimated lead time is 136 weeks (31 months) for nearly all utility companies across the United States since most utilities buy transformers from a limited list of sources.

Variable 2: Service Timeline

The average lead time for a service upgrade is 35 weeks (8 months) with a standard deviation of 7.5 weeks (2 months) assuming equipment was in stock.

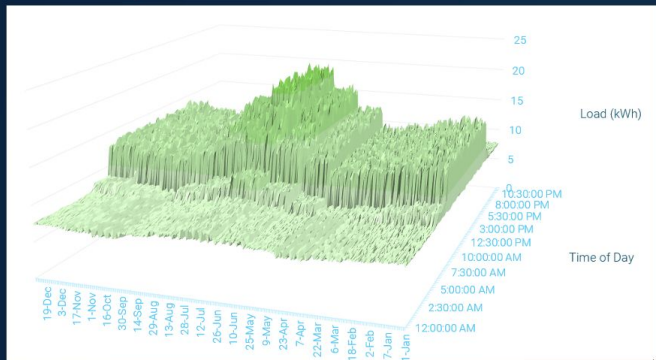


This is a survey about 480V power upgrade lead time in the U.S.

Transparency and visibility into the power grid revitalization process are key to accurately forecasting and tracking the deployment progress.

Collaboration w/ Electric Utility and Energy Providers: large-scale EV charging infrastructure w/ unmanaged DCFC

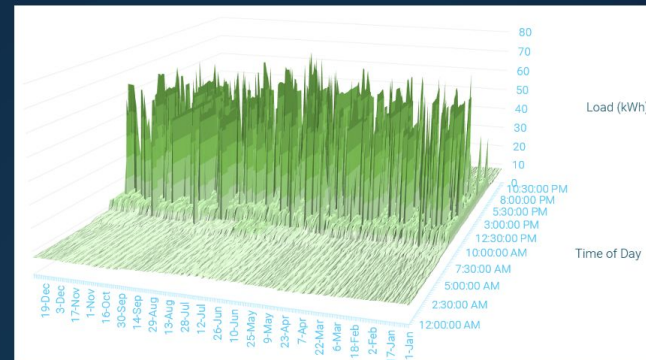
DEALERSHIP UTILITY COSTS COMPARISON (BASE VS. ADDED LEVEL 3 POWER USE)



Base Load Profile

Based on all present-day energy use.

Billing Determinants	
Total Load (kWh)	341,043
Peak Demand (kW)	87.61
Peak Demand Timestamp	7/27/2021 18:15
Tariff	
Utility	NYSEG
Rate Schedule No.	12002 Eco Supply Service
Rate Schedule Name	12002 Eco Supply Service
System Key	1003001
Billing Estimate	
Annualized Charges	\$12,481.09



EVSE Level 3 + Base Load Profile

Previous with inventory management use of an EVSE Level 3 charger.

Billing Determinants	
Total Load (kWh)	391,973
Peak Demand (kW)	287.61
Peak Demand Timestamp	7/27/2021 18:15
Tariff	
Utility	NYSEG
Rate Schedule No.	12002 Eco Supply Service
Rate Schedule Name	12002 Eco Supply Service
System Key	1003001
Billing Estimate	
Annualized Charges	\$41,057.26

A 14.9% energy consumption increase, but a 228% billing increase!

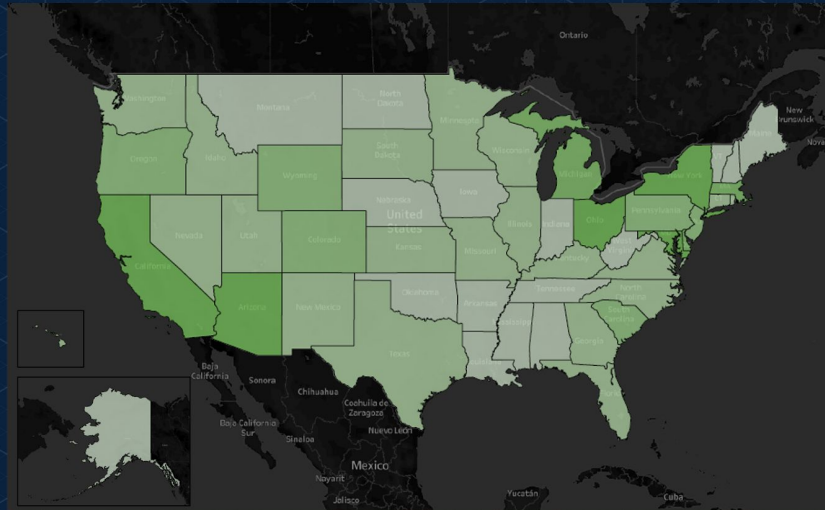
Time of Use (TOU) is critical for managing limited energy and power grid resources in Puerto Rico (not really intended to encourage EV adoption).

TOU education will be critical!

Collaboration w/ Developers, Financial Firms, and Policymakers: Financial Support/Incentives

Financial Incentives Available per State

California	17	Kansas	2
New York	8	Illinois	2
Maryland	6	Idaho	2
Ohio	5	Hawaii	2
Arizona	5	Georgia	2
Michigan	4	Florida	2
Massachusetts	4	District of Columbia	2
Delaware	4	Connecticut	2
Wyoming	3	West Virginia	1
South Carolina	3	Virgin Islands	1
Pennsylvania	3	Vermont	1
Oregon	3	Tennessee	1
New Jersey	3	Puerto Rico	1
Colorado	3	Oklahoma	1
Wisconsin	2	North Dakota	1
Washington	2	New Hampshire	1
Virginia	2	Nebraska	1
Utah	2	Montana	1
Texas	2	Mississippi	1
South Dakota	2	Maine	1
Rhode Island	2	Louisiana	1
North Carolina	2	Iowa	1
New Mexico	2	Indiana	1
Nevada	2	Guam	1
Missouri	2	Arkansas	1
Minnesota	2	Alaska	1
Kentucky	2	Alabama	1



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FINANCIAL INCENTIVES LIST

Showing 1 to 244 of 244 entries

State	Funding Entity	Program Name	Incentive Status	Expected Start Date	Expected End Date	Public Access Req.	Vertical	Business	
AR	Arkansas Department of Energy and Environmental Quality	Level 2 EVSE Rebate Program	Open	02/01/2021	12/31/2021	Required	Other	Government	View Details
AR	Arkansas Department of Energy and Environmental Quality	Level 2 EVSE Rebate Program	Open	02/01/2021	12/31/2021	Required	Fleet, Multifamily, Retail, Workplace	For-Profit	View Details
AR	Arkansas Department of Energy and Environmental Quality	Level 2 EVSE Rebate Program	Open	02/01/2021	12/31/2021	Not Specified	Multifamily, Workplace	For-Profit	View Details
AZ	Tucson Electric Power (TEP)	TEP Smart EV Charging Program	Open	04/15/2020	02/01/2024		Other	Government	View Details
AZ	Tucson Electric Power (TEP)	TEP Smart EV Charging Program	Open	04/15/2020	02/01/2024		Other	Government	View Details
AZ	Tucson Electric Power (TEP)	TEP Smart EV Charging Program	Open	04/15/2020	02/01/2024		Fleet, Multifamily, Retail, Workplace	For-Profit	View Details
AZ	Tucson Electric Power (TEP)	TEP Smart EV Charging Program	Open	04/15/2020	02/01/2024		Fleet, Multifamily, Retail, Workplace	For-Profit	View Details
AZ	Arizona Public Service Electric (APS)	Take Charge AZ	Open	04/01/2019	12/31/2022		Fleet, Multifamily, Workplace	For-Profit	View Details
AZ	Tucson Electric Power (TEP)	TEP Smart EV Charging Program	Open	04/15/2020	02/01/2024		Multifamily	For-Profit	View Details
AZ	Tucson Electric Power (TEP)	TEP Smart EV Charging Program	Open	04/15/2020	02/01/2024		Workplace	For-Profit	View Details

EV IMPACT STUDY™ INTRODUCTION

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Incentive 48

Pacific Gas and Electric (PG&E)
PG&E Schools, Parks, & Beaches

Status: Open
Region: CA
L2: L2
Expected Start Date: 02/01/2021
Expected End Date: 12/31/2023

Notes:
Schools, Park Fleets, and Parks and Beaches visitors, including some off-grid

Website Documents

Business Type: Government
Budget: Undeclared
Eligibility: Undeclared
Public Access: Required

Charger and Ports Information

Minimum Ports Per Site: 4
Maximum Dollars Per Site: Undeclared
Maximum Ports Per Site: 4

Station Ownership: Utility
Easement License: Easement
Station Operator: Electric Vehicle Supply Provider

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