Electric Vehicle Programs

Sarah Nielsen

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01

Learn how our Electric Vehicle pilot learnings support customer goals and align with our Clean Energy Plan

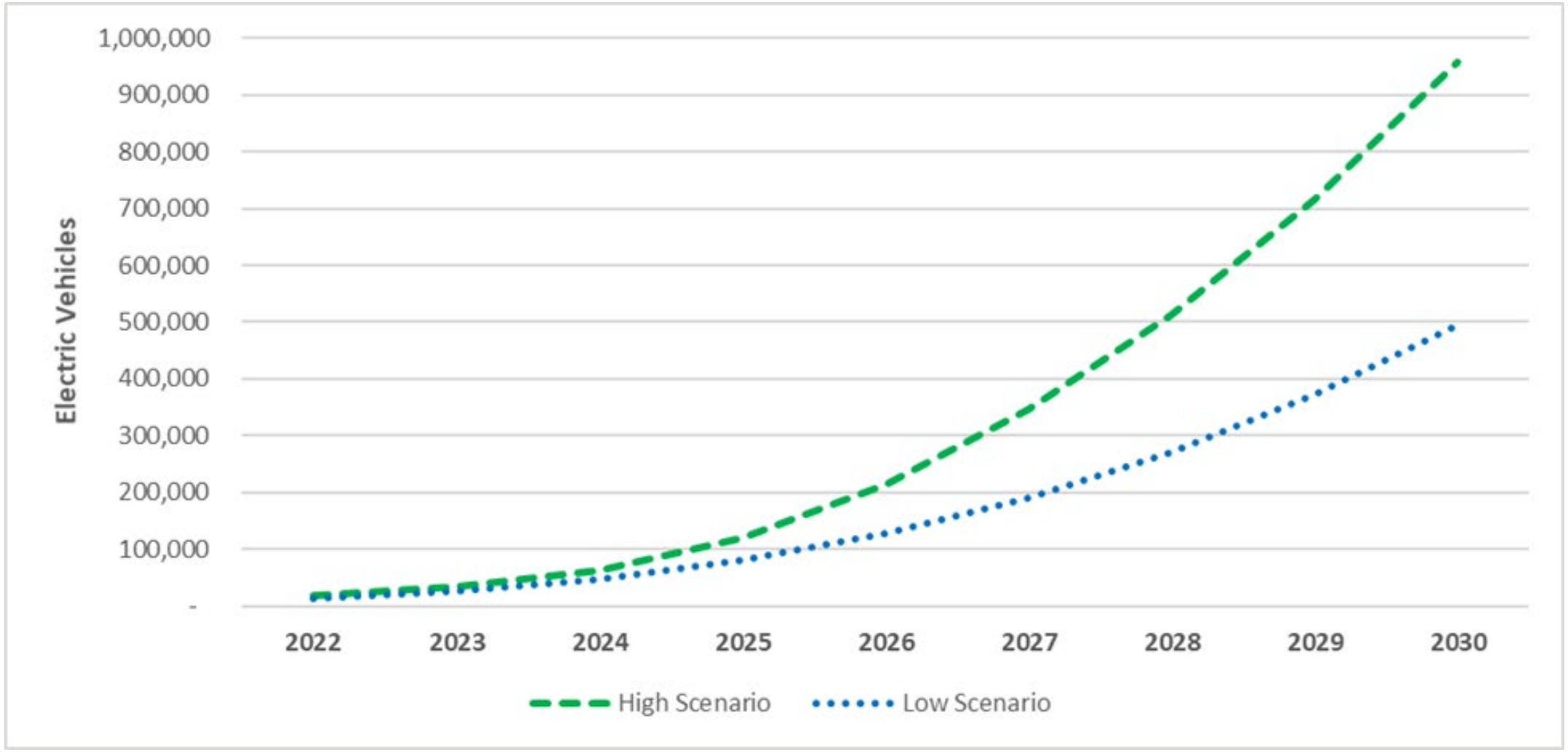
Understanding the WHY

Electric Vehicles are coming….or already here

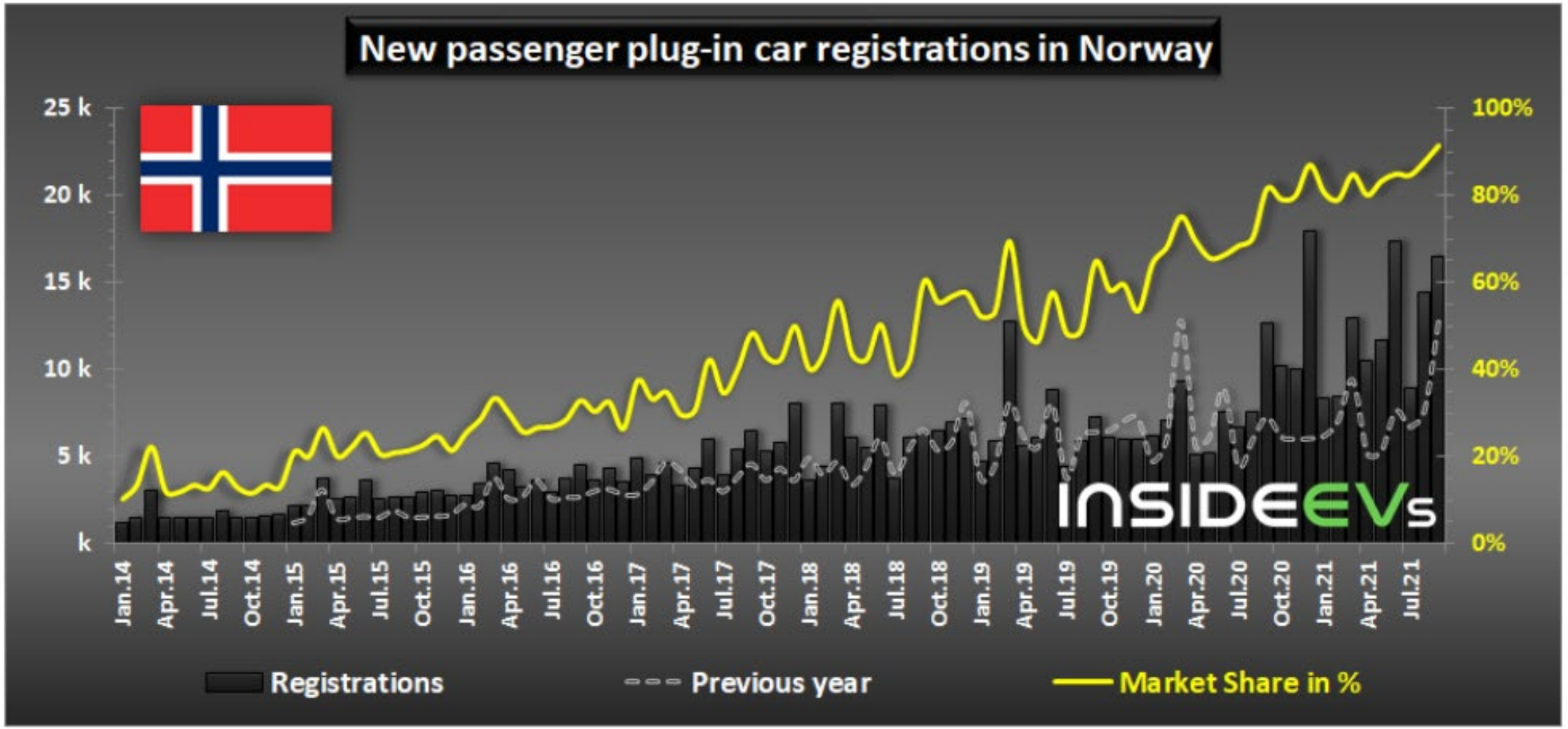
With 37,000 EVs in Michigan today (~15,300 in Consumers Energy territory), we expect exponential growth between now and 2030. Critical market signposts point in this direction:

- The state of Michigan has proposed a goal to build the infrastructure to support 2 million EVs in Michigan by 2030
- Automaker commitments to deliver many new EV models and pivot to primarily EV sales, with momentum building. For example, Ford originally expected to build 80,000/year Lightning pickups at its Dearborn, Michigan plant, and now has increased that plan to 150,000/year
- National and state policies in favor of EV
- Diminishing gap between total cost of ownership of an internal combustion engine compared to an electric vehicle
- Infrastructure Investment and Jobs Act initiatives for electric vehicles
- Parallel growth in autonomous vehicles

Projected EV Growth in CE Territory



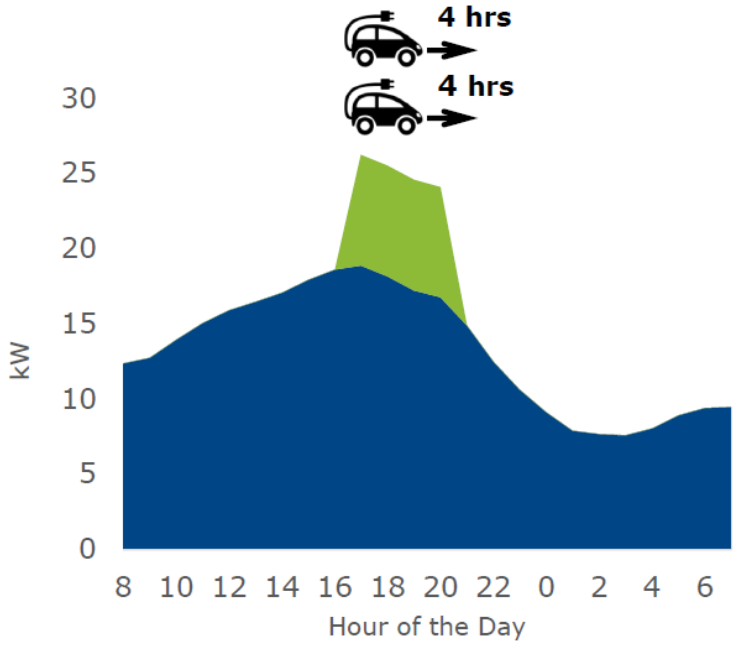
But could that really happen?



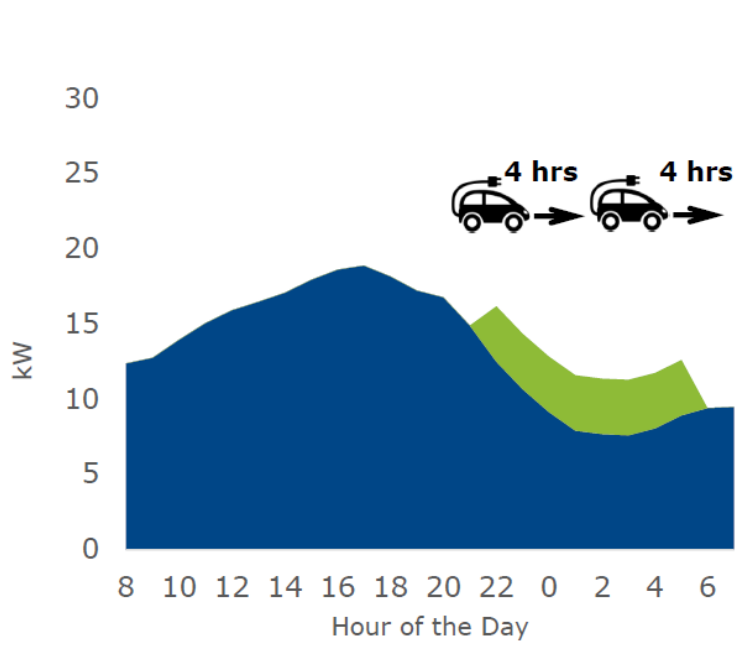
We are working to ensure electric vehicles benefit the grid, not burden

1. Lowering costs
2. Improving public infrastructure
3. Optimizing the grid

EVs as a grid <u>burden</u>



EVs as a grid <u>benefit</u>



Our ambition is to catalyze 1 million EVs in our territory by 2030

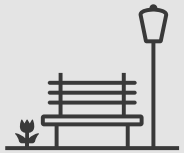
Achieving this goal will unlock benefits across the triple bottom line for Michigan's people, planet, and prosperity. It will require long-term planning combined with agility, creative approaches, and critical partnership with governmental, commercial, and non-profit entities.

To reach our 2030 ambition, our strategy has five categories:

1. **Residential**

2. **Commercial**

3. **Public**



4. **Internal operations**

(e.g. CE fleet, grid preparation, rate strategy)

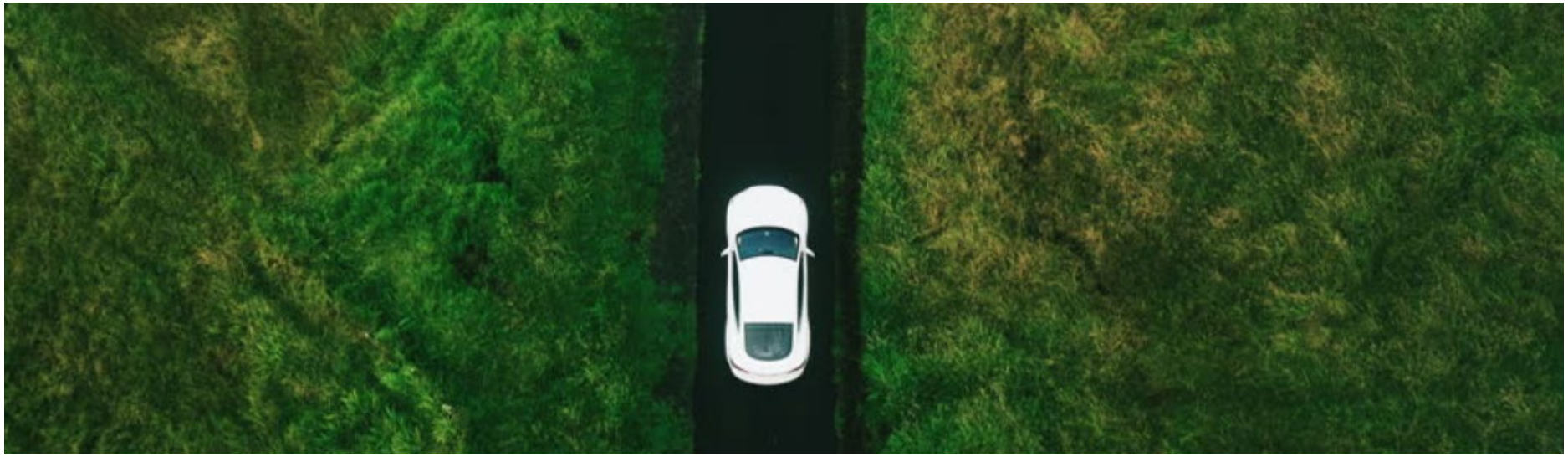
5. **Market Enablement**

Charging Infrastructure Primer

Level 1
Power: Connected to standard 120 Volt wall outlet
Use: Long term parking at public location, or very-low mileage driver home charging
Range: About 3-4 miles per hour, and 100% of vehicle range over a three-day weekend
Reality: Not the most convenient option for most daily driving, but select use cases

Level 2
Power: 240 Volt, 40-to-80-amp, ~7 kW trending to 11 kW+
Use: Convenience charging at public L2, overnight charging at home or hotel
Range: About 30 miles per hour, and 100% of vehicle range overnight
Reality: ~90% of charging sessions and majority of those at home

Direct Current Fast Charger (DCFC)
Power: Connected to 3-phase power lines, 50 kW trending to 300 kW
Use: Necessity charging, gas station equivalent, critical for long distance
Range: 80% of max vehicle range in 30 minutes or less
Reality: <5% of charging sessions and only on 200+ mile trips



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Overview of program offerings, how they work, benefits, and what customers are a good fit

Consumers Energy EV Offerings

How do the pilots work?

Online applications

Looking for customers that meet **off-peak** charging or **location** requirements

Site Selection

Team reviews correlation with **pilot objectives**

Rebates

Rebates granted once **data collection** is confirmed

PowerMIDrive: Residential and Public Charging

5-year pilot until June 2024

From 2019-2022:
- **1500 residential rebates**
- **200 Level 2 public chargers**
- **36 DC fast chargers**

Coming in 2022-2024:
- **100 more Level 2 public chargers**
- **100 more DC fast chargers**

HOME

$500 for customers who install an approved networked Level 2 Charger at their residence, and enroll on a TOU Rate

$120 Bring Your Own Charger (BYOC) Incentive option available for un-networked Level 2 Chargers

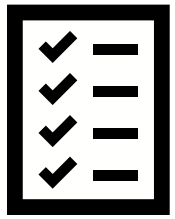
LEVEL 2

Up to $5,000 for commercial customers who install an approved Level 2 Charger in public location; 90 for overnight locations (e.g. hotels) and 10 for multi-dwelling units

DCFC

Up to $70,000 for commercial customers who install an approved 150 kW DC Fast Charger in public location

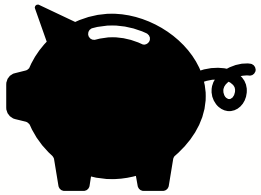
PowerMIFleet: Fleet charging



Education & Outreach / Concierge Service

Fleet assessment reports to determine:

- Vehicles best suited for electrification per duty cycle
- Best locations for charging infrastructure
- Cost benefit analysis of electrification



Rebates for fleet charging infrastructure

$5,000 rebate per dual port Level 2 (up to 500 rebates in total and 10 per site)

$35,000-$70,000 per DCFC ($500,000 limit; 7-14 rebates in total)

Make Ready (new power / electric infrastructure upgrades)

Technical Development

Workplace demand response

Bi-Directional power flow demonstration - Dependent on market/customer readiness

Seeking site hosts -

Direct Current <u>Fast Charger</u> (DCFC)

100 gas stations and big box stores, with 24-7 operation, along travel routes identified by EGLE/MSU, that have amenities.

<u>Level 2</u>

90 overnight locations like hotels and motels; or restaurants adjacent to such locations willing to allow overnight parking.

10 multi-dwelling units like apartments, townhomes, and condos with group parking.

$1.6M for fleets serving income qualified communities

<u>Level 1</u>

No rebates for this category, but consider workplace parking, and long-term parking lots at locations like airports.

Thank you!

Power MI Drive

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APPENDIX

Residential: Installation Costs

	Lowest Cost	Highest Cost	Median Cost	Average Cost
Charger Only (368 total participants)	$ 270	$941	$599	$608
Installation Included (111 total participants)	$547	$4,305	$1,211	$1,423

Figure 3: Residential Customer Costs of Home Charger vs Installation – May 2021

Public Level 2: Installation Costs

	Lowest Cost	Highest Cost	Median Cost	Average Cost
Total Project Cost (Installation, Network & Maintenance Plan Fees, + Charging Station Equipment)	$3,368	$28,277	$7,883	$10,095
Percentage of Costs Covered by $5,000 Rebate	100%	18%	63%	50%

Figure 7: Public Level 2 Site Project Costs – May 2021

Public DCFC: Installation Costs

	Lowest Cost	Highest Cost	Median Cost	Average Cost
Total Project Cost (Installation, Network & Maintenance Plan Fees, + Charging Station Equipment)	$123,440	$201,524	$169,654	$163,104
Percentage of Costs Covered by $70,000 Rebate	57%	35%	41%	43%

Figure 11: DCFC Site Project Costs – May 2021

	Lowest Cost	Highest Cost	Median Cost	Average Cost
DCFC Make Ready Scope includes 300 KVA transformer and service meter, underground or overhead multiphase extension, boring costs, and local system upgrades	$4,659	$146,480	$18,935	$26,883

Figure 12: DCFC Site Make Ready Costs – May 2021

External websites and tools

Tom Moloughney: Instructive videos regarding chargers, charging, and a variety of popular EVs.
Tom Moloughney – YouTube

Plugstar.com: Shopping tools for EVs, car comparisons, and cost of ownership tools
PlugStar Shopping Assistant