

ChargeMine

by  **Sustain11**

What if we all bought groceries
at the same time?

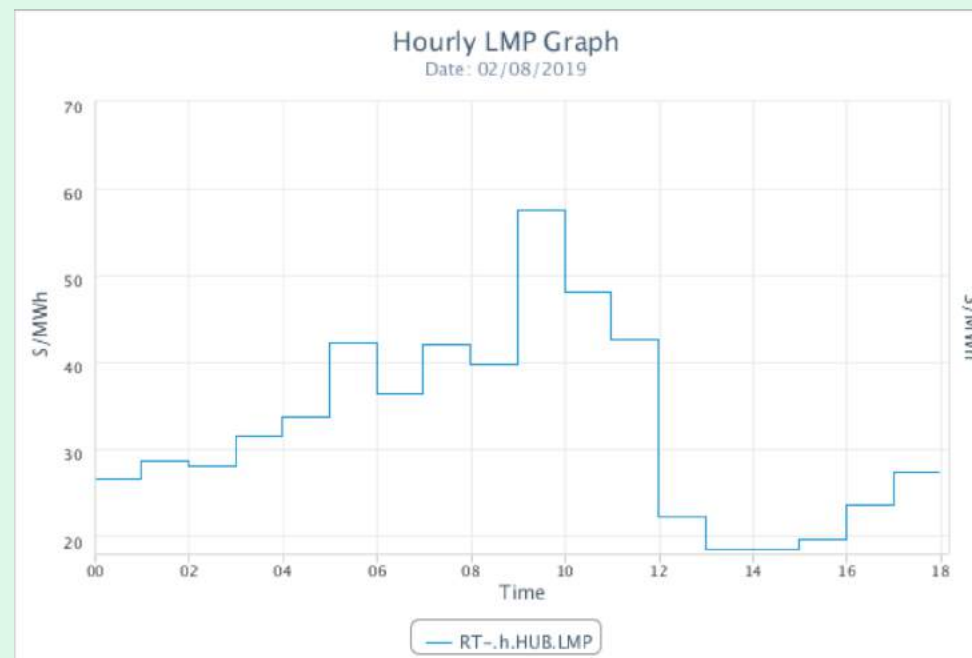
Consumers are forced to buy expensive, unhealthy foods



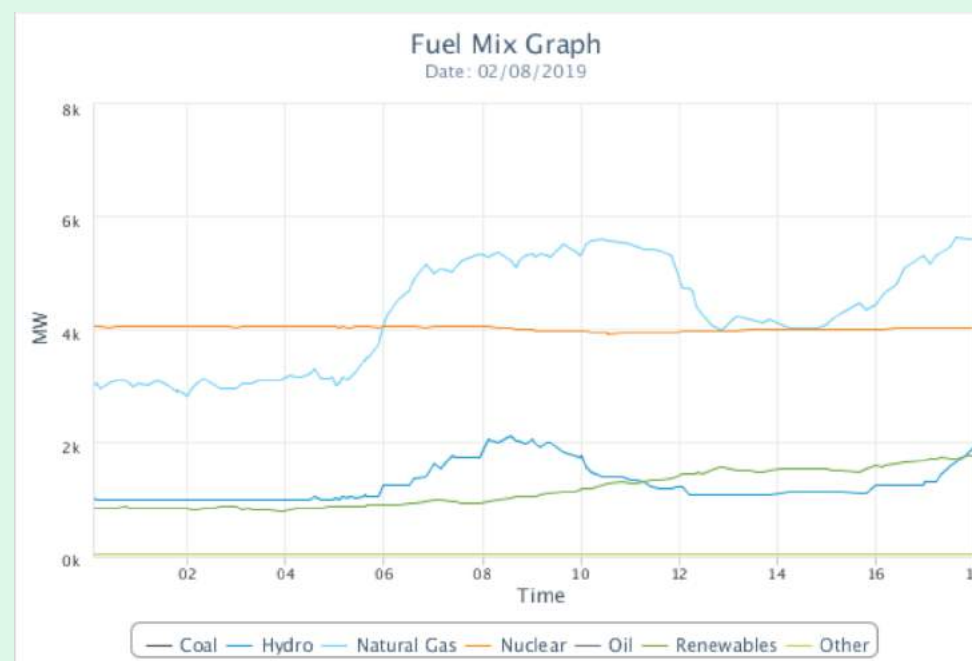
Preparing for Hurricane Irma, 2017
Moore County, NC

Image Source: ThePilot.com

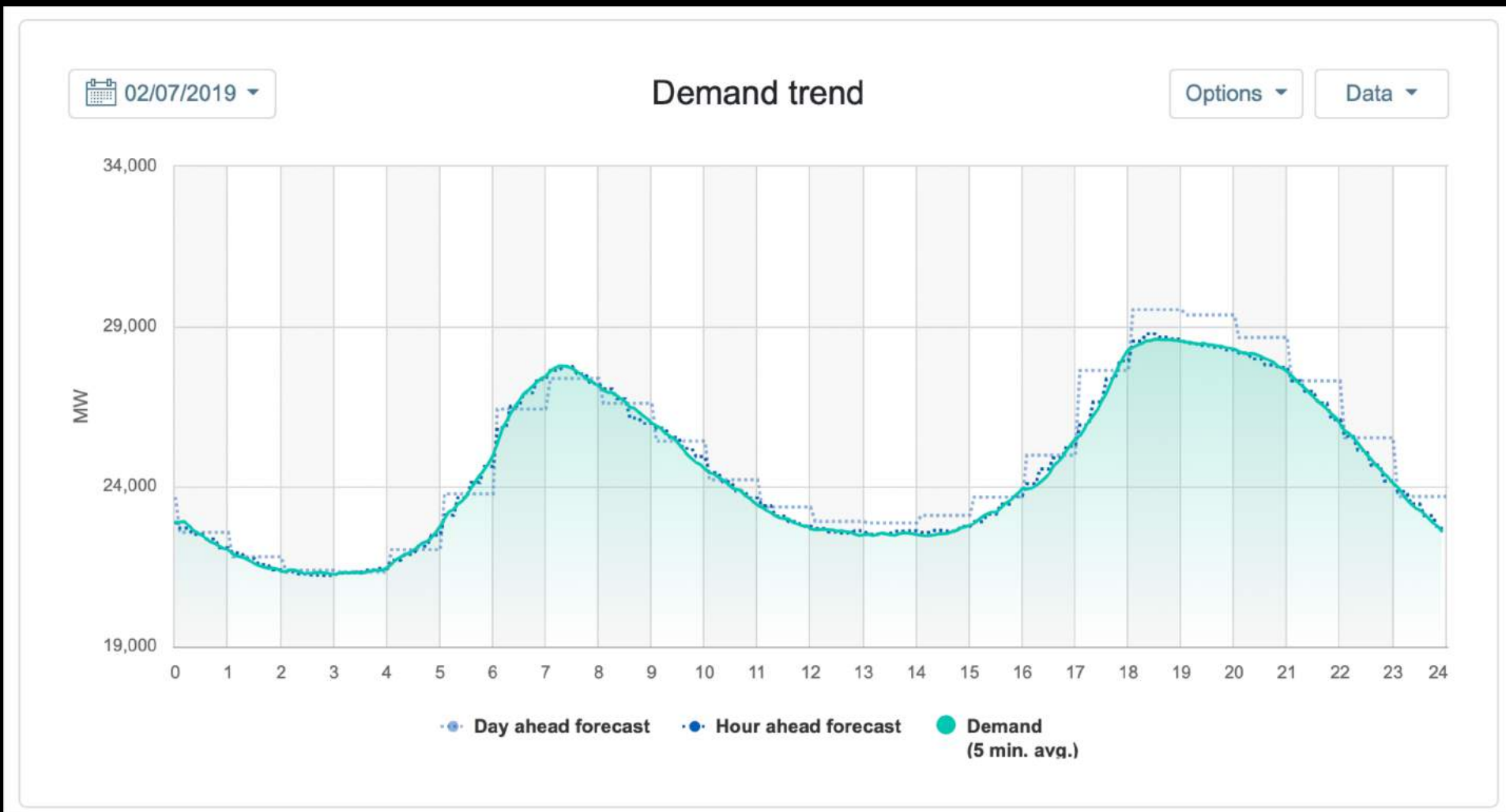
The Same is True of Electricity



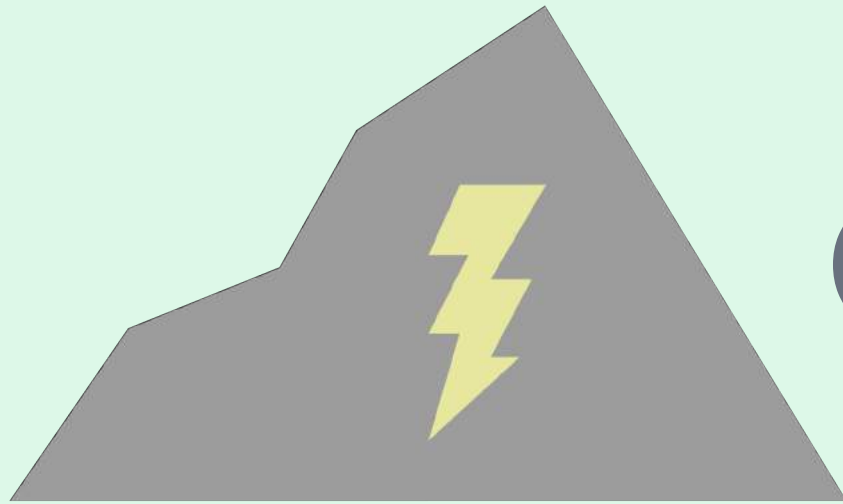
Costly



Dirty



Electric vehicles could add
1000 MW of peak load in California.

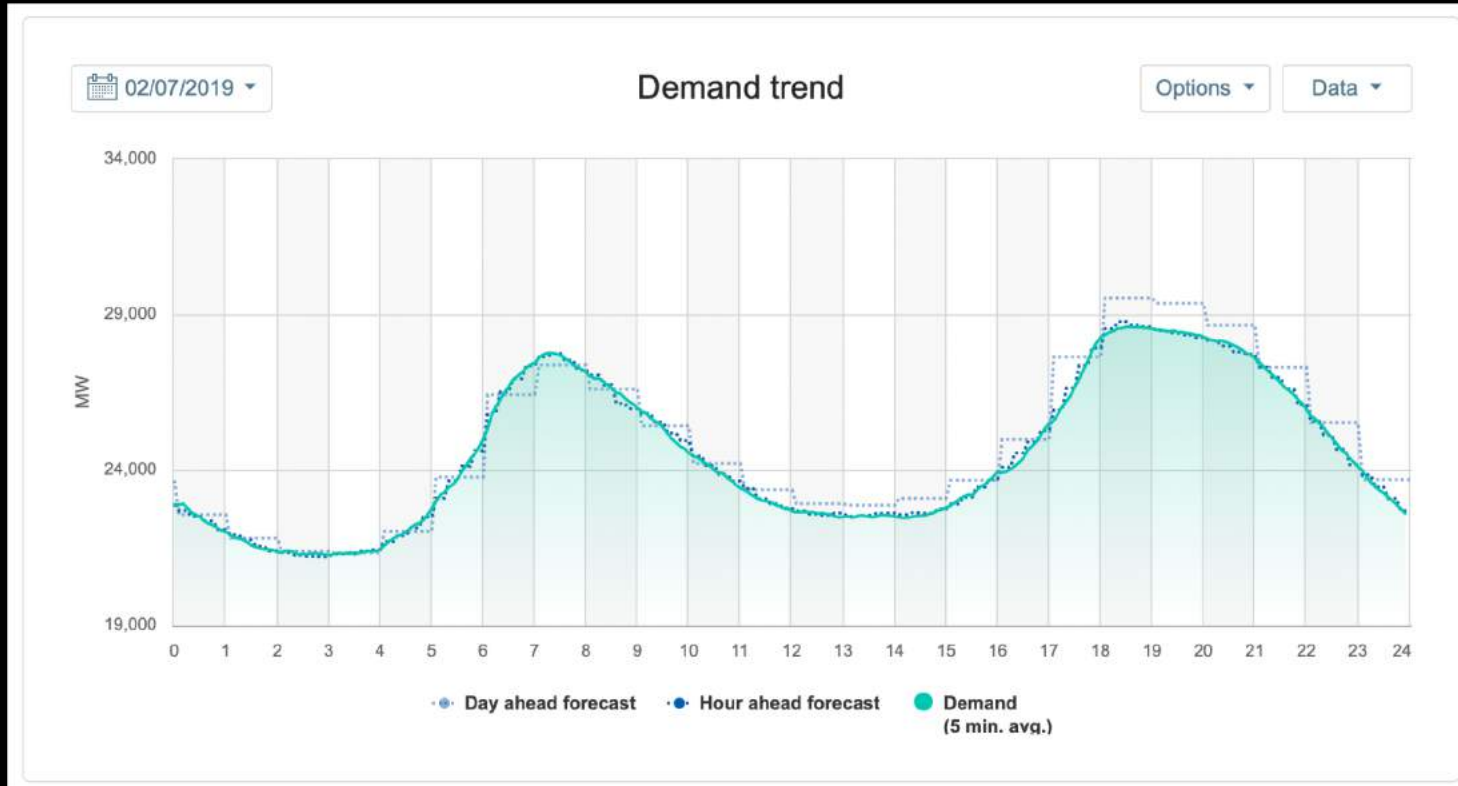


ChargeMine

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ChargeMine is a cloud software platform
that manages electric vehicle charging
to reduce energy costs and carbon emissions

ChargeMine instructs vehicles to accept charge when demand is lowest while they are plugged-in



If a vehicle plugs-in from 6 PM to 6 AM every night, charge it at 2 AM instead of 6 PM

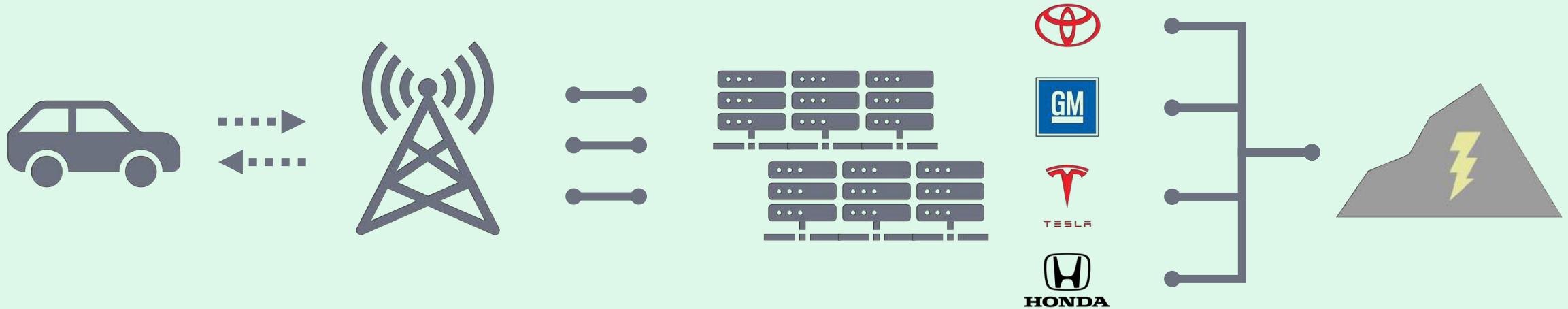
How it Works

Vehicle owner enrolls and
downloads mobile app

at the time of the vehicle sale



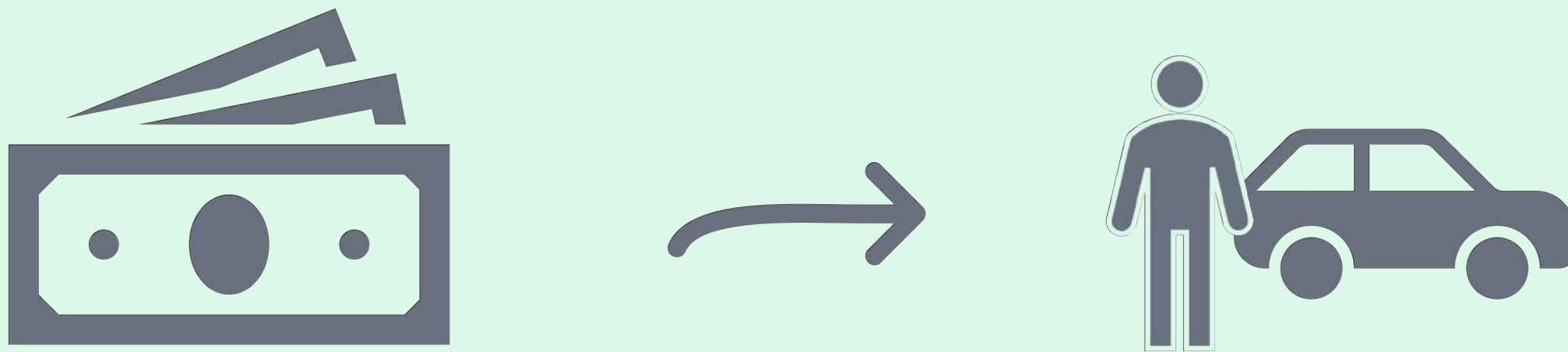
How it Works



ChargeMine remotely controls charging via OEM telematics systems

Manufacturers grant access in exchange for service contracts

How it Works



Drivers are compensated for their flexibility

Proof-of-Concept

Combining real EV charging
data with real energy prices

How much demand
can be shifted?

How much revenue
would this generate?





= Vehicle is plugged-in



= Vehicle is charging

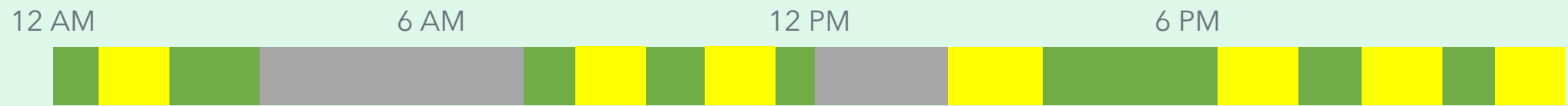
Observed
Friday 2/20



Price Analysis:
When Would be Cheapest to Charge?

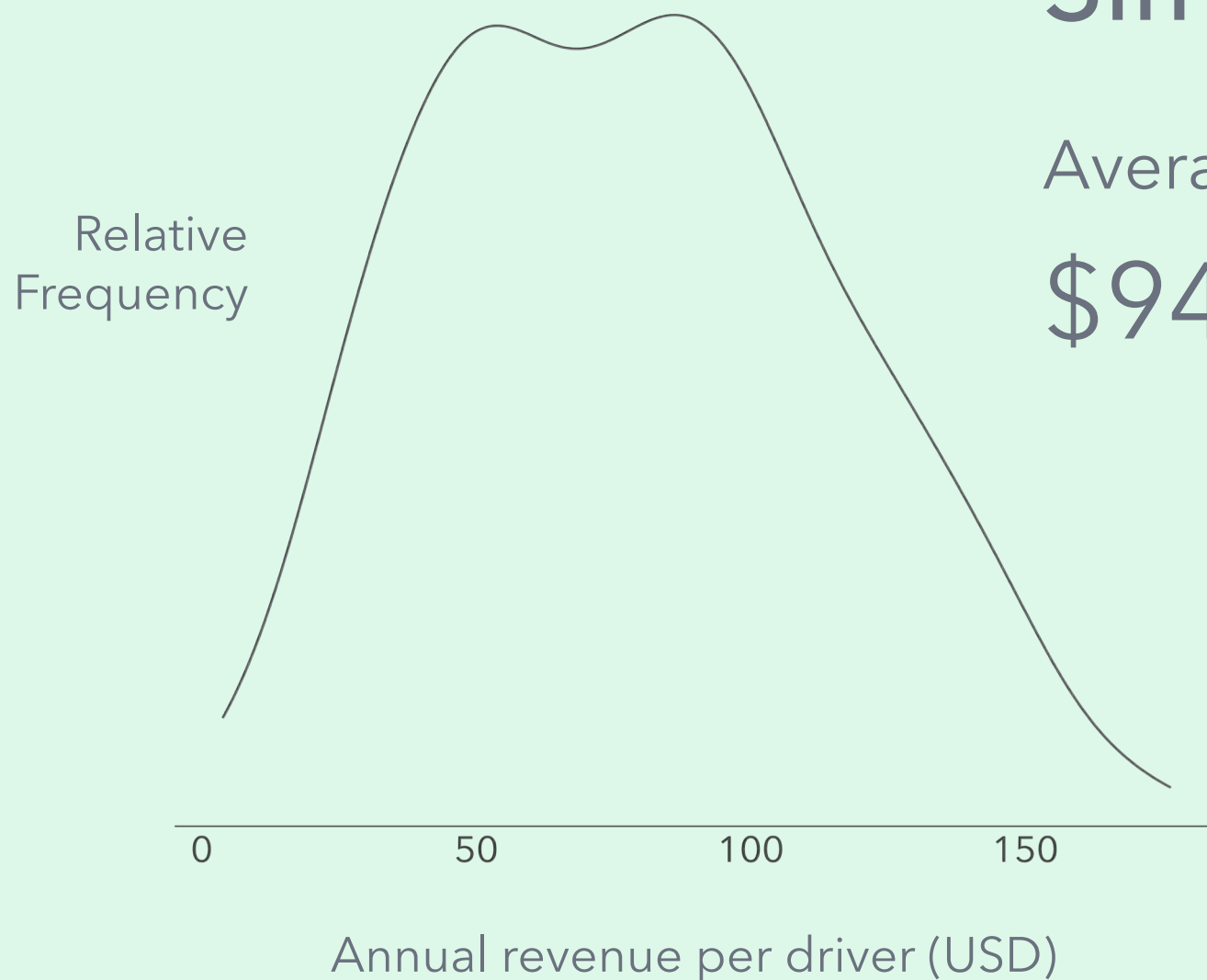


Shifted
Friday 2/20



Simulated Results

Average annual revenue per driver:
\$94



Rewards are real, but modest.

Go-to-market strategy must
match potential for value
generation.

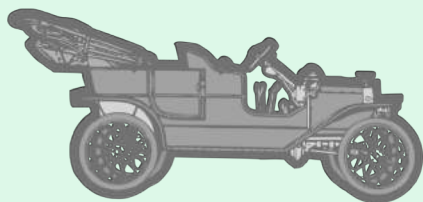
Go-to-Market

Sold as a feature for higher-trim packages

Manufacturers pay up-front, per-vehicle fee to ChargeMine (~\$70).

Vehicle owners receive 95% of revenue generated by shifting charging cycles.

Reduces attrition, guarantees revenue stream.



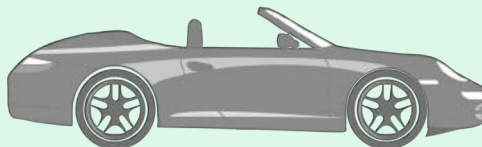
Base

✗ Not ChargeMine-enabled



Premium

✓ ChargeMine-enabled



Luxury

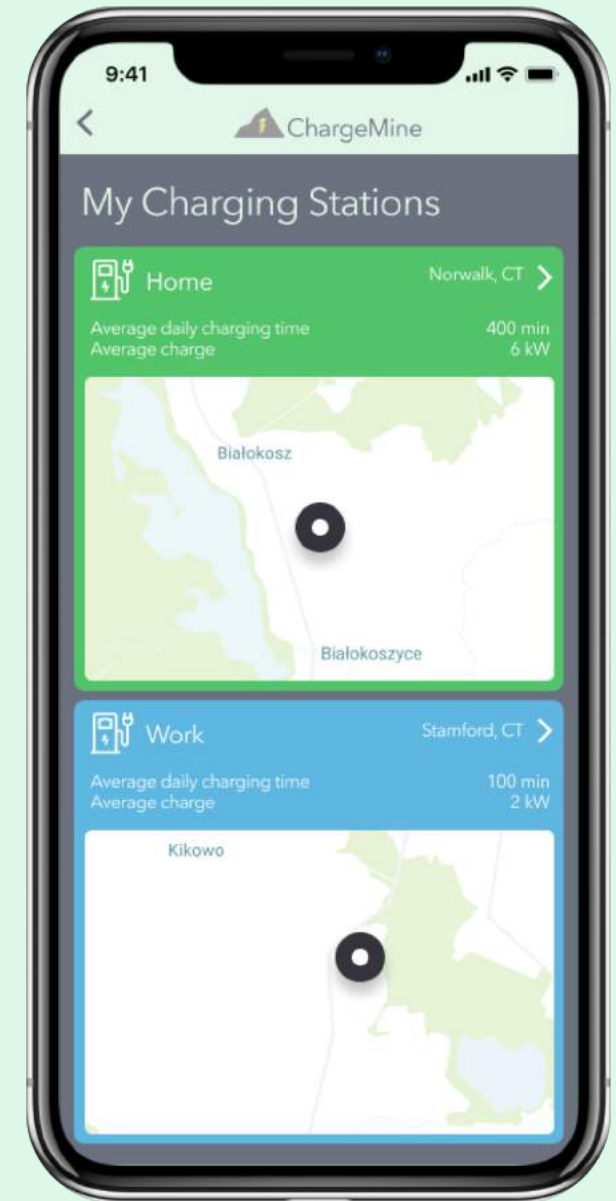
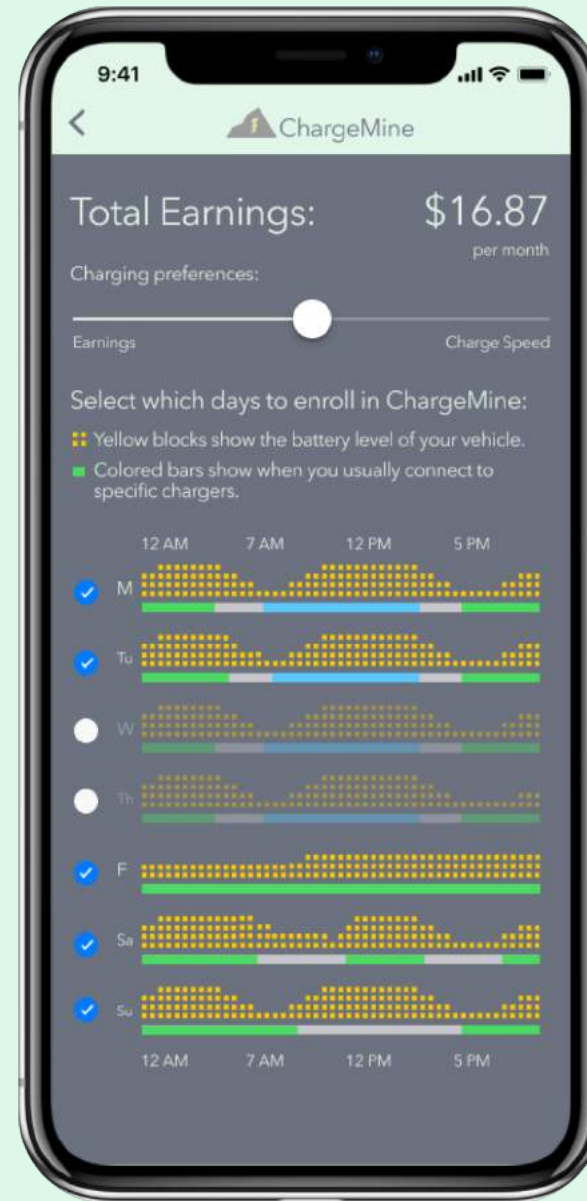
✓ ChargeMine-enabled

Keeps Drivers Happy

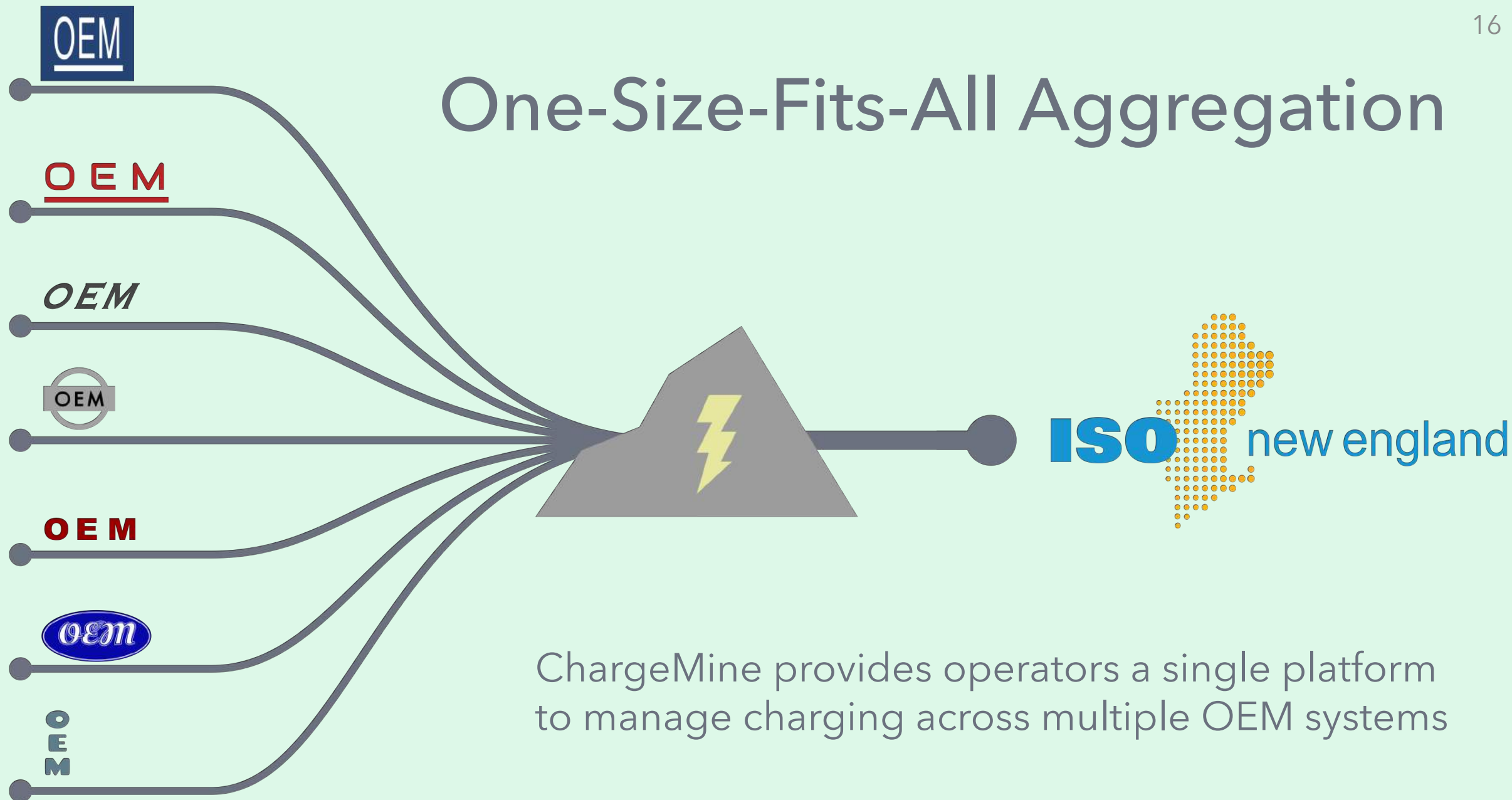
Manage Incentives

Manage Charge Locations

Opt-In, not Opt-Out



One-Size-Fits-All Aggregation



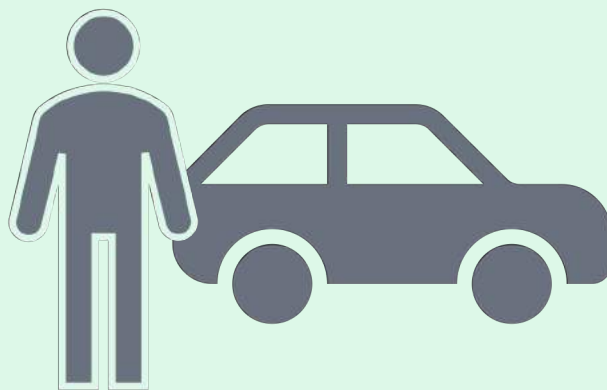
ChargeMine provides operators a single platform to manage charging across multiple OEM systems

Everybody Wins



OEMs

Low-cost upsell
Access to energy markets



Drivers

Earn rewards easily
Charge using renewables

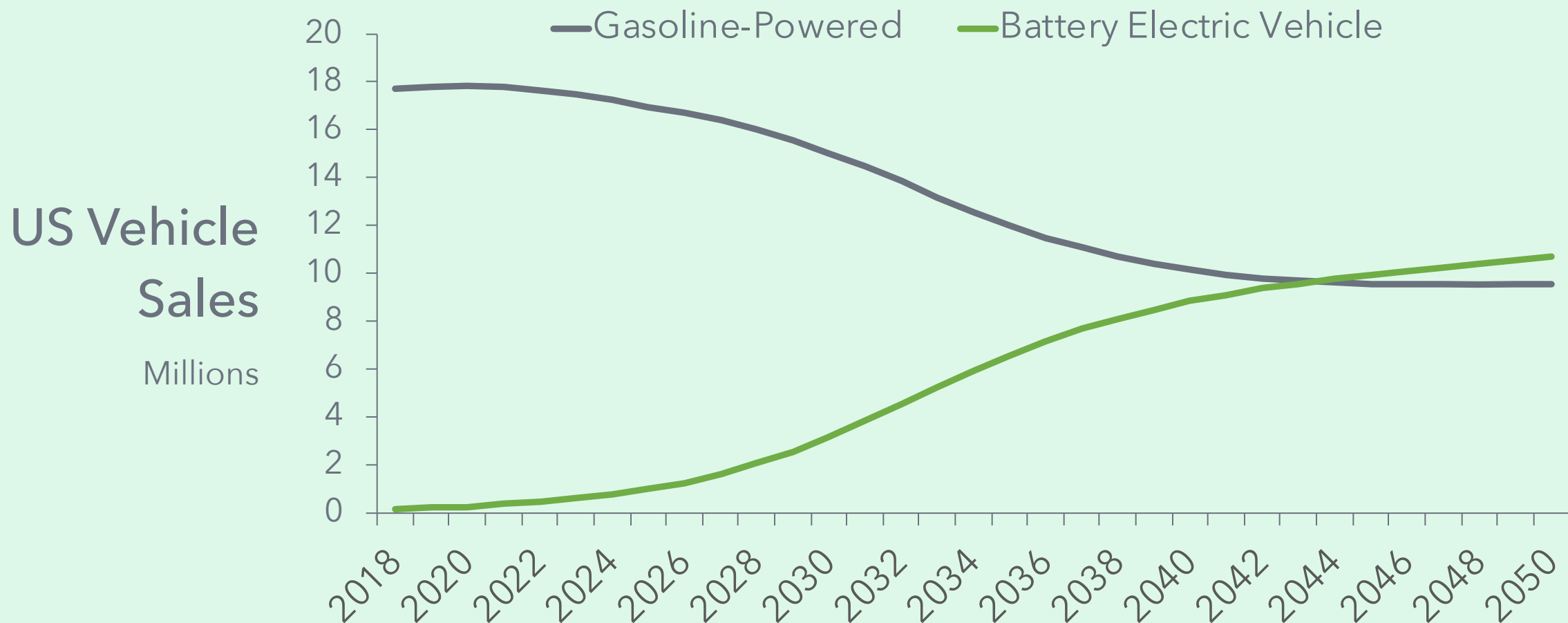


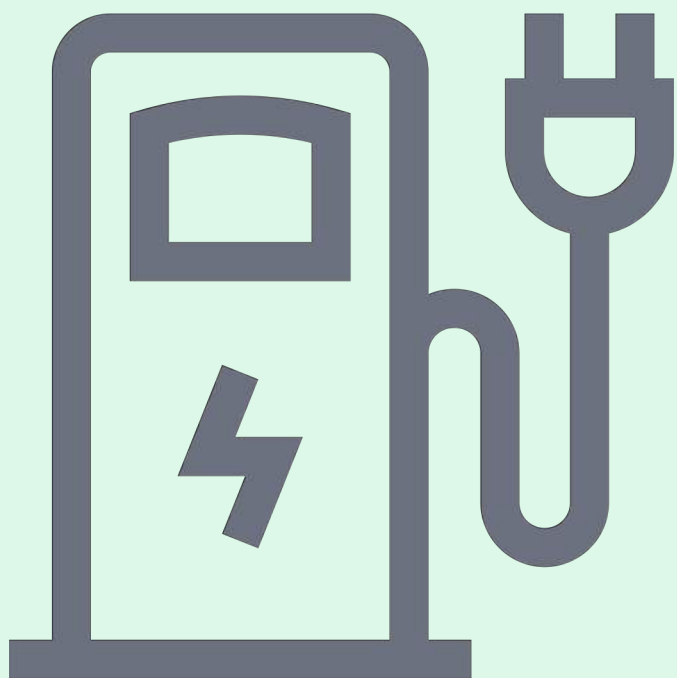
Energy Markets

Quick demand response
Access to multiple OEMs

Growing Market

ChargeMine to Generate \$7.8 Million in Revenue in 2026



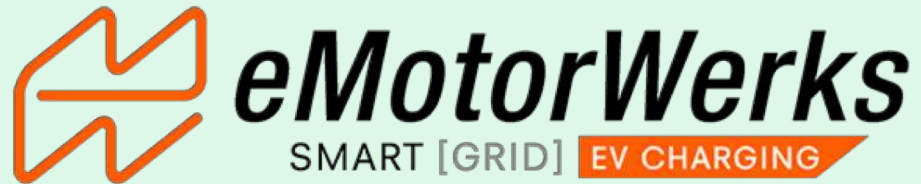


Prepare for the Future

Vehicle-to-Grid Storage

Draw power from EV batteries while ensuring there will be time to recharge later

Competitive Landscape



- Owned by Enernoc / Enel
- Piloting remote demand response with Honda in CA
- Flawed business model



- Owned by GEOTAB
- Piloting with New York ConEdison
- Clunky, hardware-dependent solution
- Focused on infrastructure impact



- Stanford-based startup
- Remote demand response aggregator
- Focused on infrastructure impact
- Very early stage

Vehicle-Side Intelligence

The Best Solution

	ChargeMine	Time-of-Use Rates	EVSE Smart Charging
No Extra Hardware	✓	✓	
Guaranteed Customer Engagement	✓		✓
Near-Zero Maintenance Costs	✓		
Avoid Creating New Peaks	✓		
Vehicle-to-Grid Storage Enablement	✓		

The Team



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B.S. Mechanical Engineering,
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Economics
Yale University



Jeffrey Weingart

Chair, Intellectual Property
Meister Seelig & Fein LLP

Road Map

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December 2018

Initial Calls with Utilities
Technology Refinement with Faculty
Market Analysis
Applied for Social Entrepreneurship
Consultancy



February 2019

Apply to CITY Summer Accelerator
Proof-of-Concept Simulation
Dealership Interviews
Energy System Learning

Fall 2019

Strike Deal with First OEM
Integrate Technology
Launch Pilot

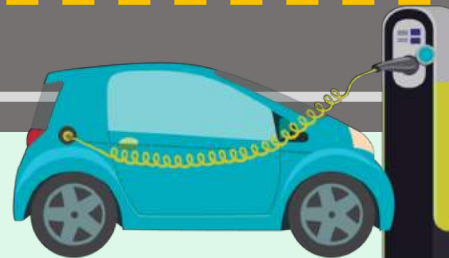


November 2018

Idea Generated
Applied for Sobotka Prize

January 2019

Meeting with Eversource
Business Model Refinement
Applied for CITY Spring Accelerator



Summer 2019

Wireframes / Mockups
Seek Funding
Hire Up
Develop Prototype Technology
Become Energy Market Supplier

Thank You