

# ChargeMine

by  Sustain11

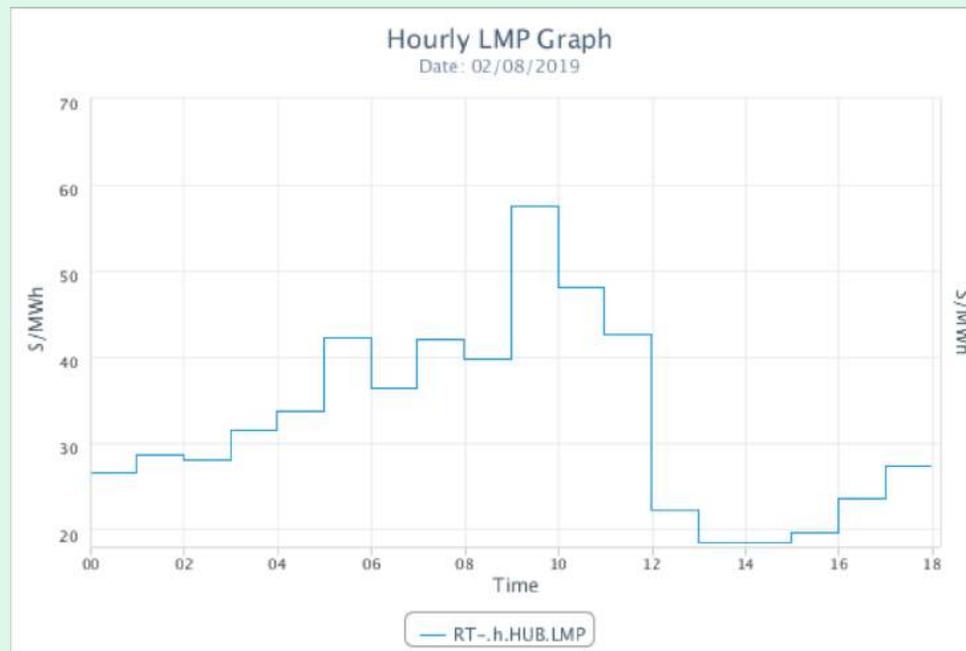
What if we all bought groceries  
at the same time?

Consumers are forced to buy expensive, unhealthy foods

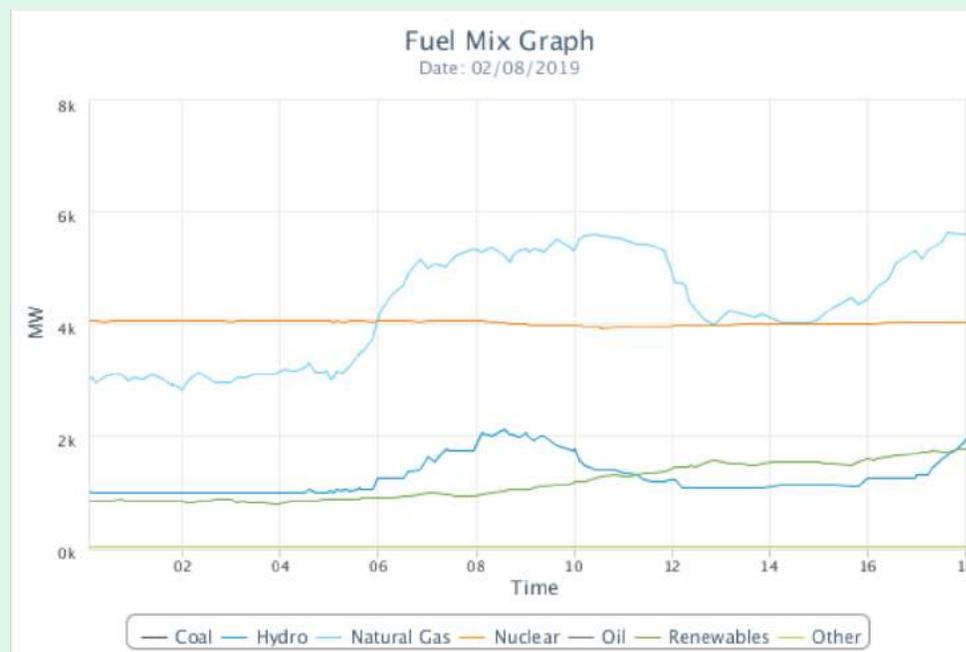


Preparing for Hurricane Irma, 2017  
Moore County, NC

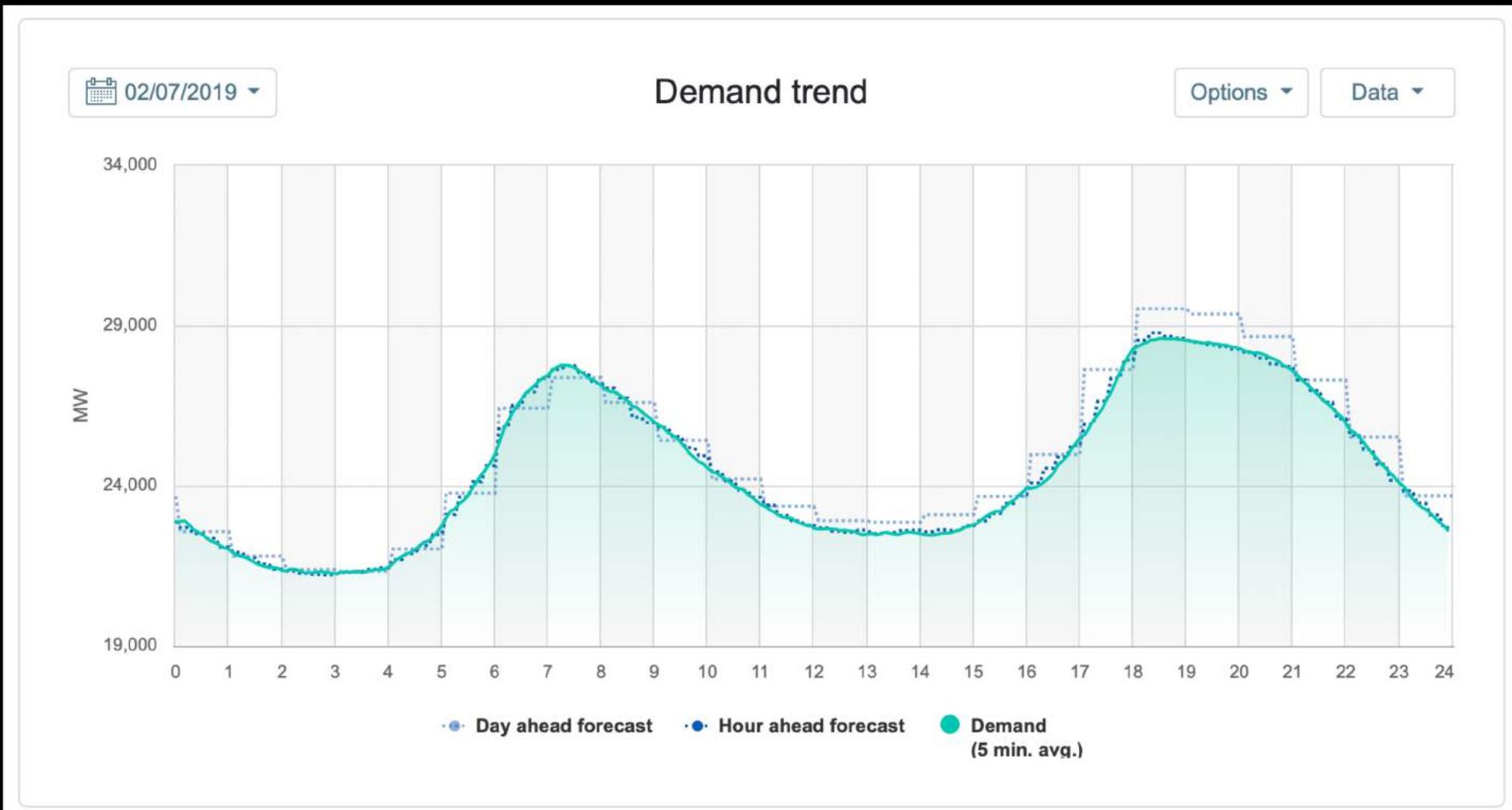
# The Same is True of Electricity



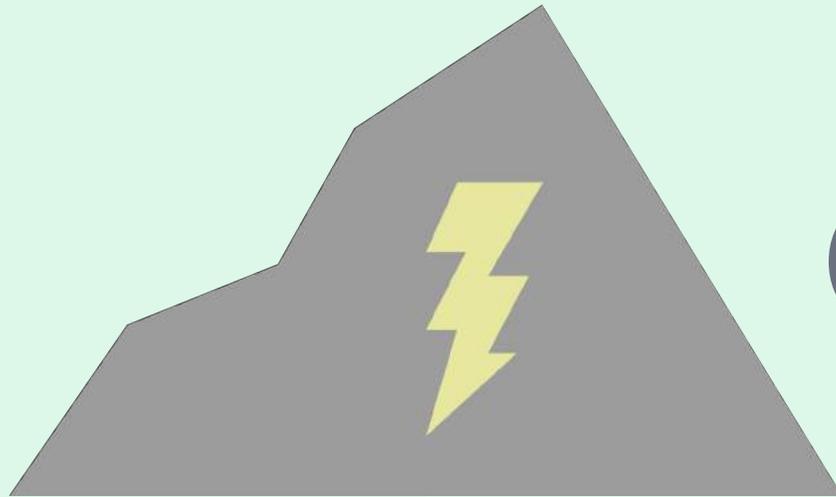
Costly



Dirty



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

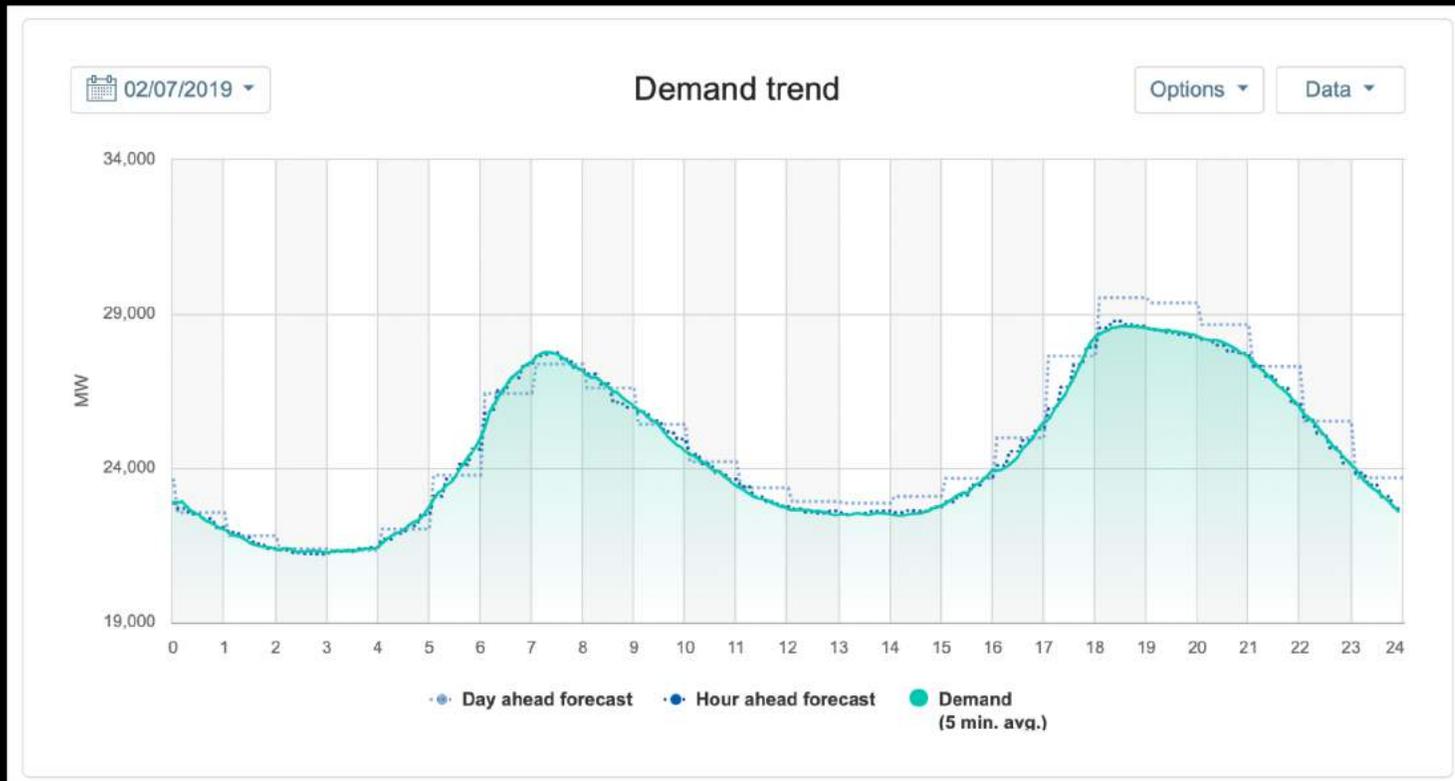


# ChargeMine

by  **Sustain11**

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

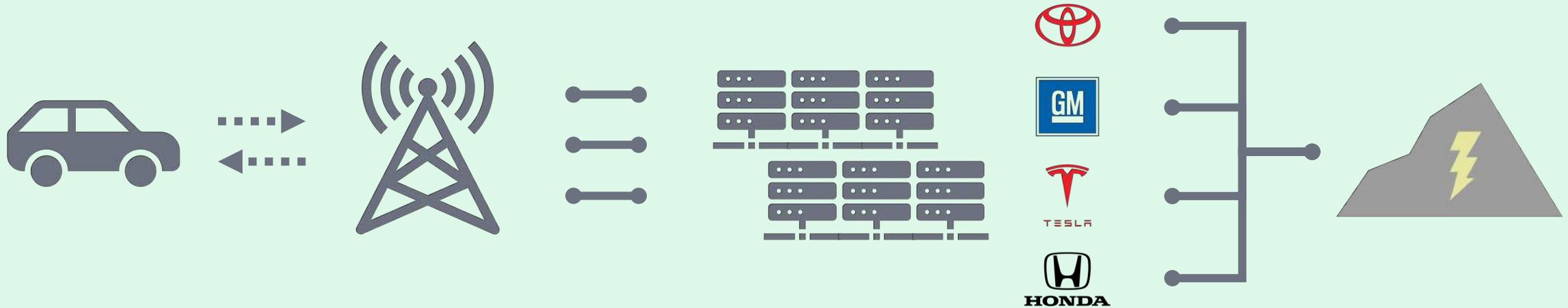
# How it Works

Vehicle owner enrolls and  
downloads mobile app

at the time of the vehicle sale



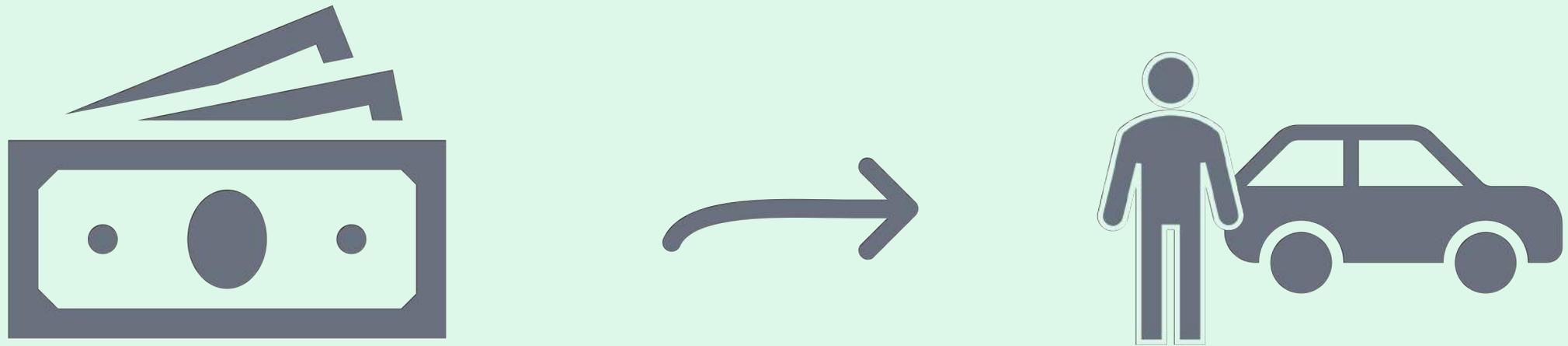
# How it Works



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

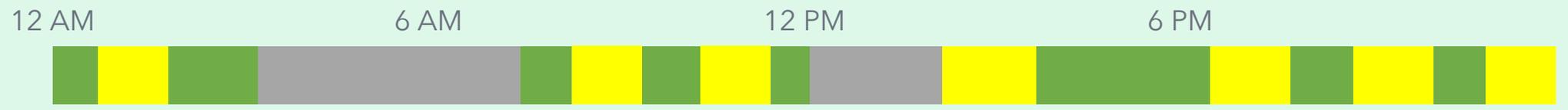
Observed  
Friday 2/20



Price Analysis:  
When Would be Cheapest to Charge?



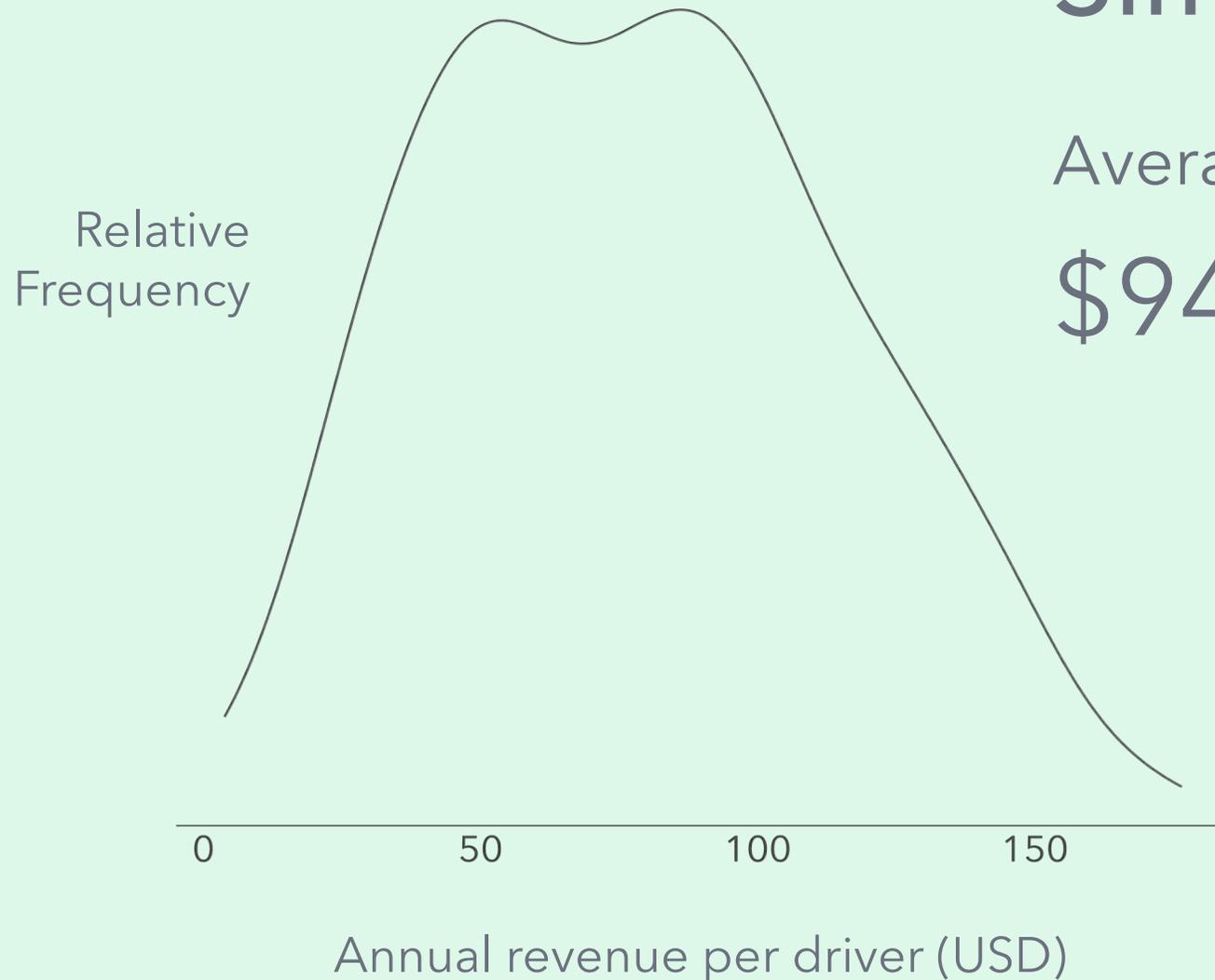
Shifted  
Friday 2/20



# Simulated Results

Average annual revenue per driver:

**\$94**



Rewards are real, but modest.

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

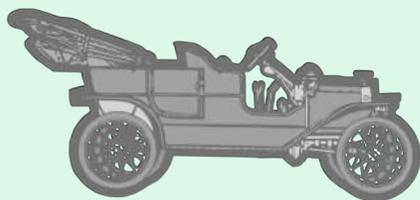
# Go-to-Market

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.



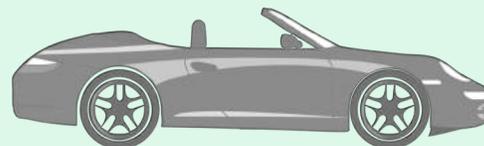
## Base

✗ Not ChargeMine-enabled



## Premium

✓ ChargeMine-enabled



## Luxury

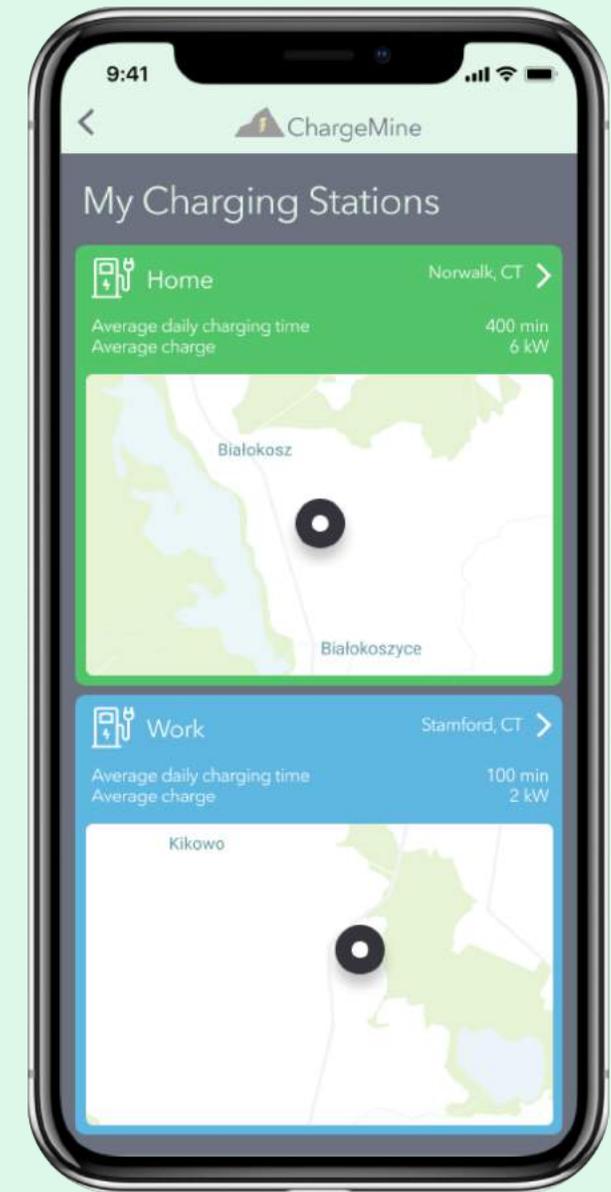
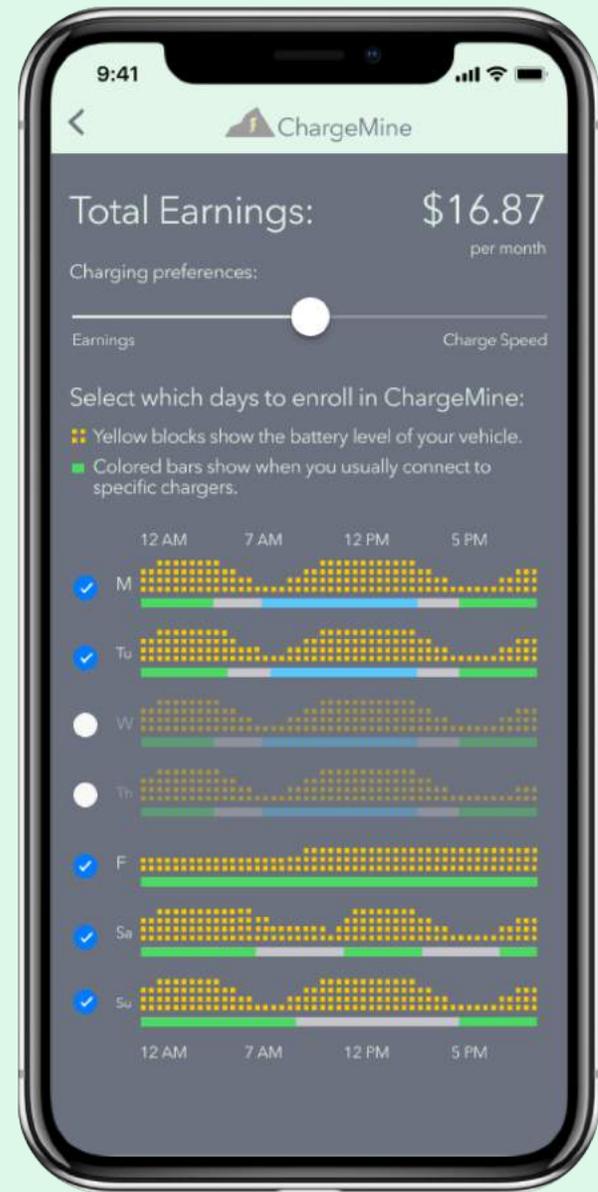
✓ ChargeMine-enabled

# Keeps Drivers Happy

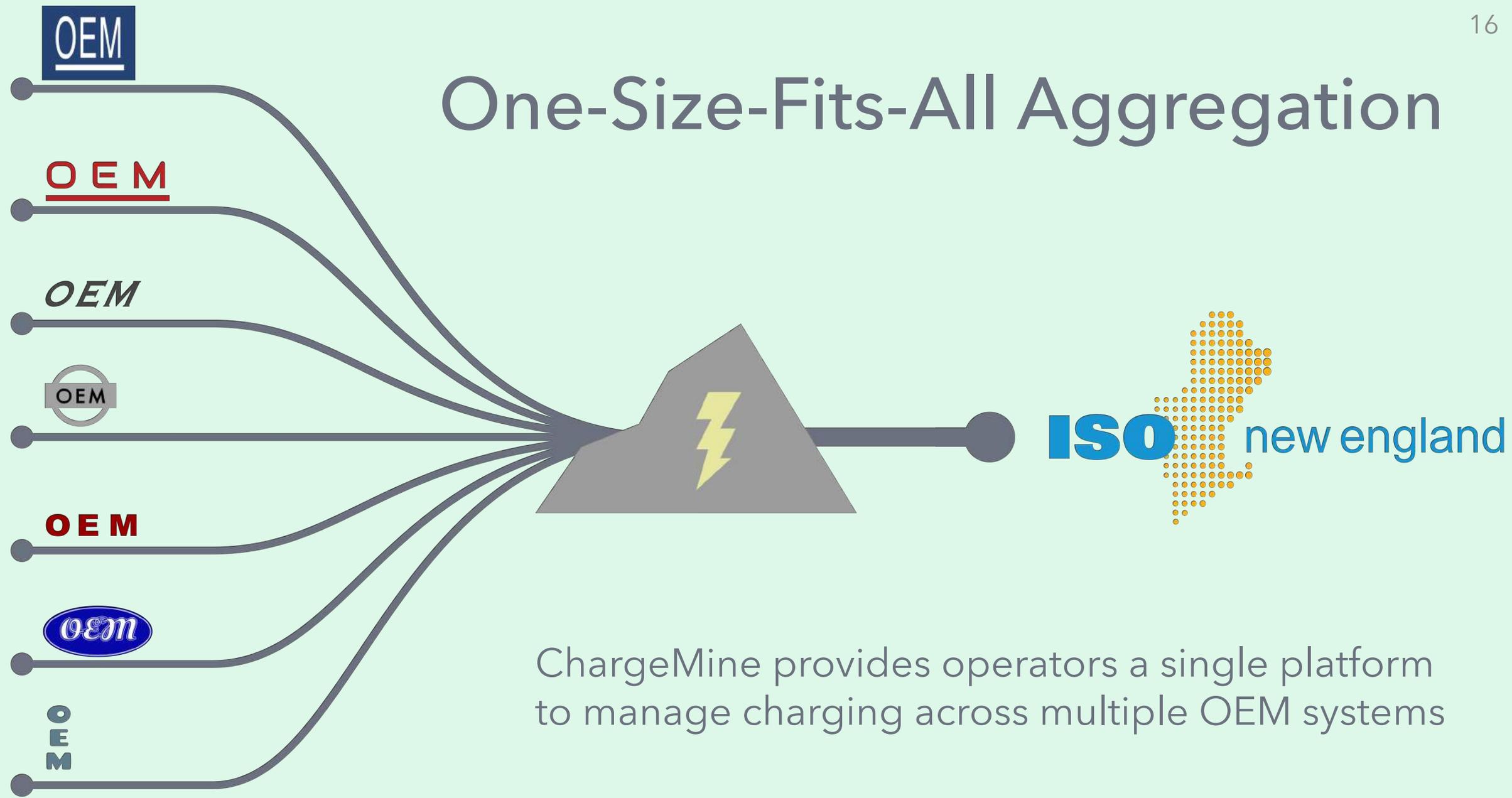
Manage Incentives

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

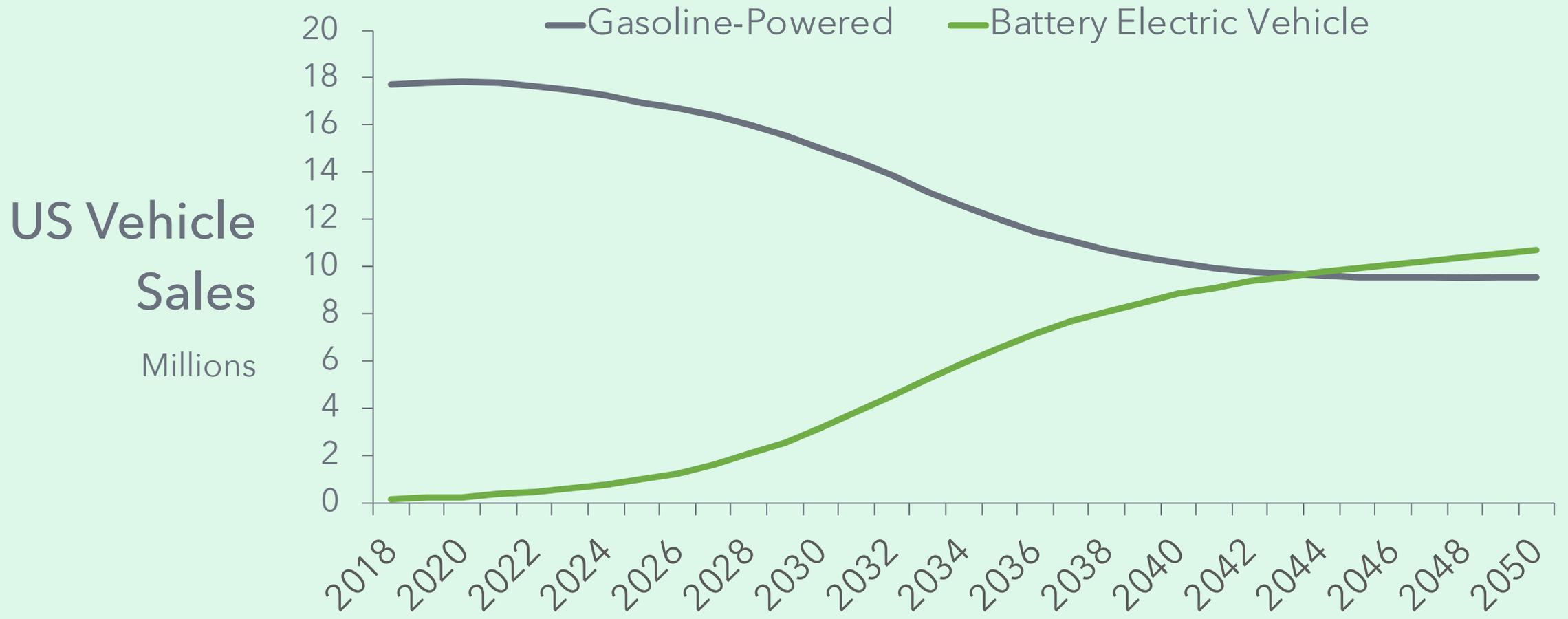


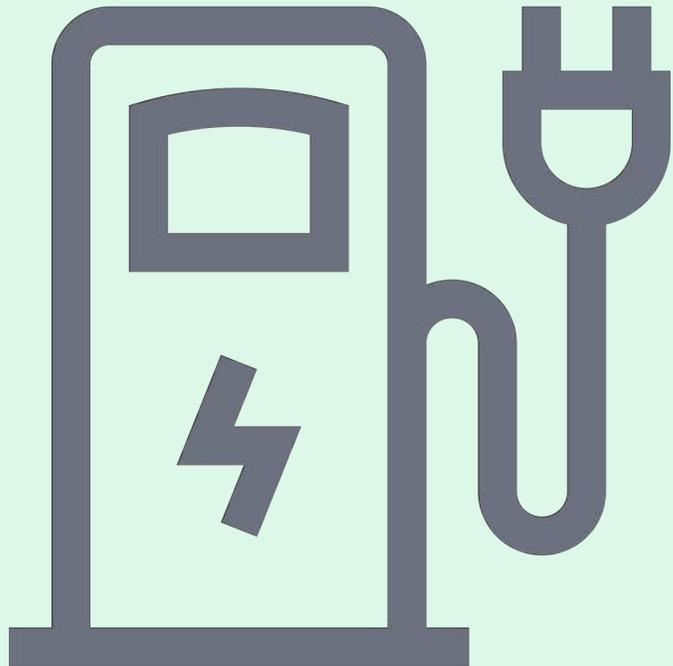
## Energy Markets

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



## Noah Weingart

NoahW @ Sustain11.com

Founder, CEO of Sustain11

Entrepreneur & Product Manager

B.S. Mechanical Engineering,  
Cornell University

M.E.M. Energy & Industrial Ecology,  
Yale University

## Advisory Board



### Peter Boyd

Yale Center for Business  
& the Environment



### Ken Gillingham

Associate Professor of  
Environmental & Energy  
Economics  
Yale University



### Jeffrey Weingart

Chair, Intellectual Property  
Meister Seelig & Fein LLP

# Road Map

## 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

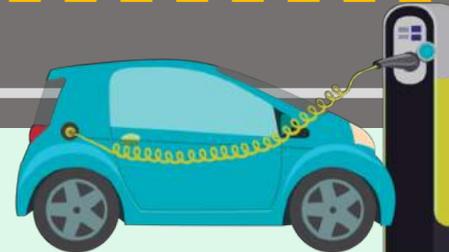


## November 2018

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