

Electric Vehicle Services

Connecticut Electric Vehicles Infrastructure Council Discussion
March 19, 2010



Photo of Thomas Edison with an electric car, 1913



Nissan LEAF, 2010



- Joined NRG EV Services Team 2/22/2010
 - Team includes Glen Stancil and 5 others

- 5 Years EV Industry – “ABCs”
 - Autos: Tesla Motors
 - Batteries: Atieva
 - Charging: Coulomb Technologies

- 20+ Years Silicon Valley Entrepreneur
 - Co-founder Network Computing Devices
 - Co-founder ShoreTel Corporation

Consumer Promise of Electrification

Affordability

Lower fueling costs
 Lower maintenance costs
 Long-term total cost certainty

Convenience

No stops at the gas station
 Very low maintenance
 New sales/service channels
 Preferred roadway access
 Priority parking



Cover of 2008 NRG Annual Report

Excitement

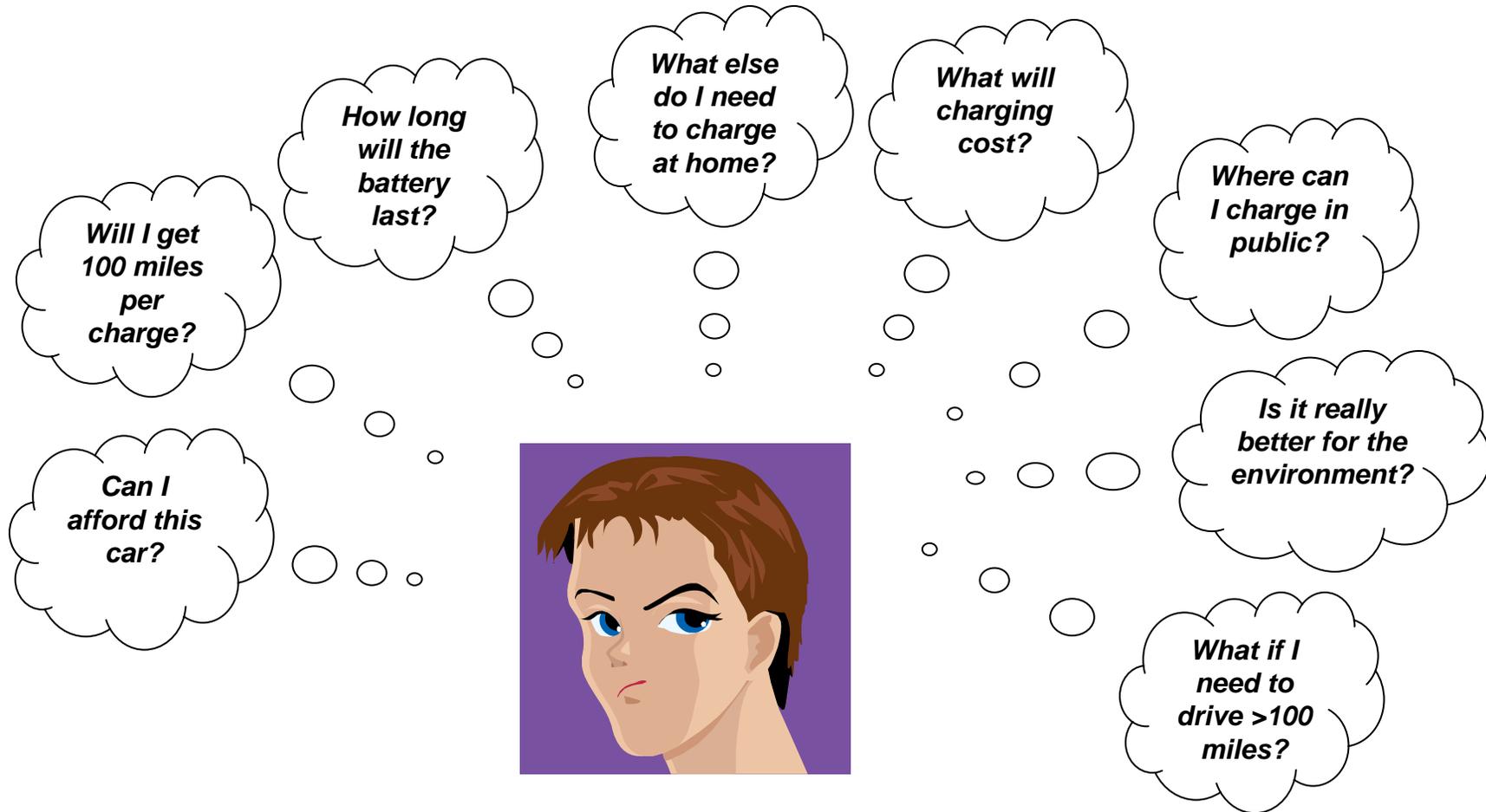
Superior driving performance
 Form factors and materials
 Infotainment features
 Personalization options
 Personal brand statement

Sustainability

Zero tailpipe emissions
 US energy independence

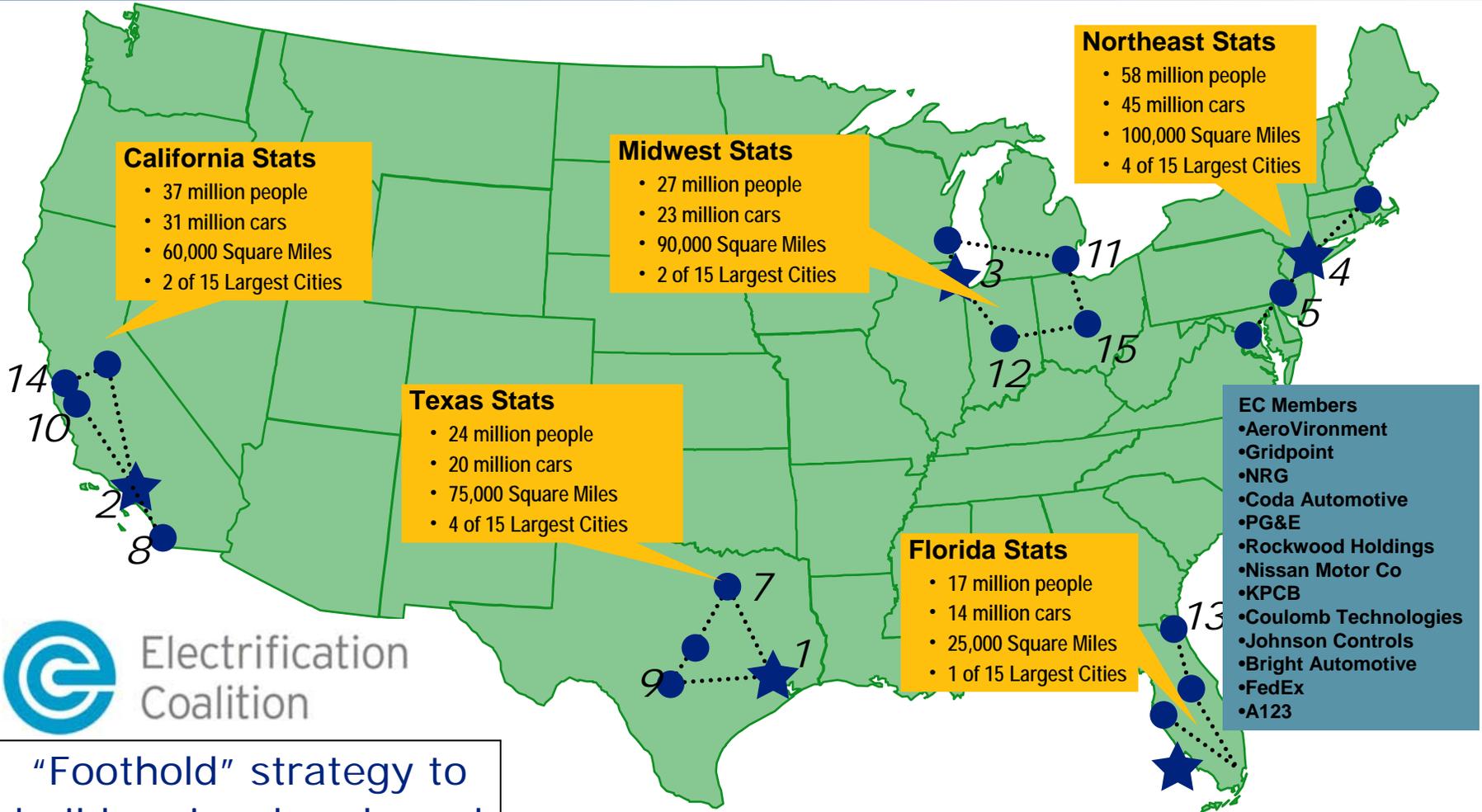
Very robust value proposition to a large segment of drivers

But there are challenges....



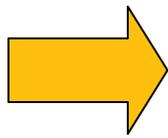


National Electrification Ecosystem



Electrification Coalition

“Foothold” strategy to build regional scale and learning with a two-phase ecosystem approach

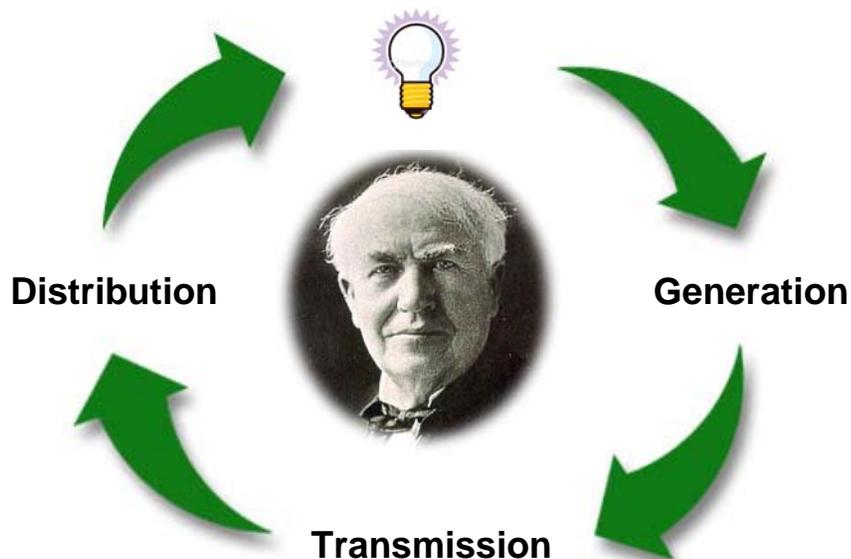


14 millions EVs on the road by 2020

www.electrificationcoalition.org

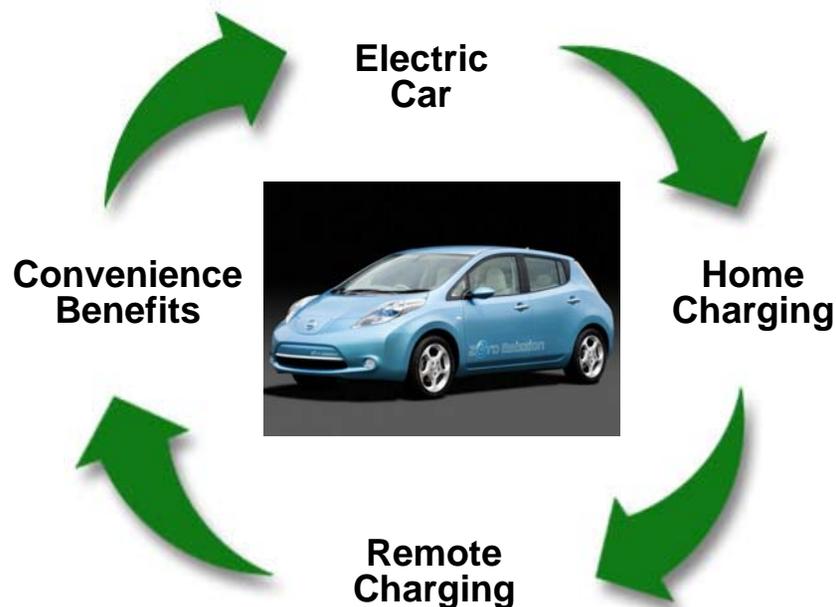
How to Succeed? Copy Thomas Edison

NOT: How do I invent an electric light bulb?



BUT RATHER: How do I get people to switch their home lighting from kerosene to electricity?

NOT: How do I invent an electric car?



BUT RATHER: How do I speed adoption of electricity as a transportation fuel?

A System Approach is Required

- Home Charging
 - Home charging station
 - Installation & Maintenance
 - Electricity
- Remote Charging
 - Public “Fast Charge” stations
 - Public “Convenience Charge” stations
- Fixed Monthly Fee
 - Substantially Lower Cost/Mile vs Gasoline
 - Uses Renewable/Clean Energy Sources
 - Charge at Home or on the Road

NRG Actions to Build EV Ecosystem

- **Develop Marketing Programs To Drive Awareness And Education**
- **Integration With Automaker Sales Channels**
- **Install & Maintain Home Charging Stations**
- **Advocate for Legislation and Public Policy that Encourages Adoption Of Electric Vehicles**
- **Install and Operate a Public Charging Network**
- **Integrate with Other EV Ecosystems for Seamless Customer Charging**
- **Manage Charging to Optimize Customer Needs, Power Costs, and Distribution Capacity**
- **Manage Energy Risks of Car Efficiency, Driver Behavior, Weather, Regulatory, and Commodity**
- **Manage Invoicing/Billing Operations To Deliver Simple and Clear Package Pricing**

Houston, Texas ready by end of 2010; Other Markets to follow

Goals for Public-Private Cooperation

1. Gain early access to the first wave of mass produced electric vehicles
2. Achieve EV acquisition price parity to gasoline vehicles
3. Support Public EV charger build-out
4. Enable convenience benefits to electric vehicle owners

Public-Private cooperation is critical to ecosystem success



Ideas for Public-Private Cooperation

Agency	Idea	1 Early Access	2 Price Parity	3 Charger Build-out	4 Conv. Benefits
All	1. Add EVs to public fleets	√			
Federal	1. Electrification Coalition ecosystems recommendations		√	√	
State	1. Sales tax exemption for EV purchases in Texas 2. Support for EV purchase via Texas Emissions Reduction Plan	√	√		
	3. HOV Access for EVs				√
PUC	1. Qualify EV chargers for TDSP energy efficiency funding programs 2. Separately meter EV chargers to enable innovative bundles			√	
State & Local	1. Property tax credits for EV chargers and installation 2. Financing of EV chargers thru property taxes (PACE)			√	
	3. Free tollway access for EVs				√
	4. Waive registration fees on EVs				
	5. HOV Access for EVs				√
	6. Preferred parking and charging at Park-n-Ride facilities				
	7. Expedited building permit process for home charger installation			√	
	8. Self-inspection of home charger installs by qualified installers				
	9. Building code support of residential and commercial EV chargers				
	10. Preferred parking and charging benefits at city facilities				√