Electric Vehicles are Part of a Larger State Energy Plan

**Headline Targets**

- 40% reduction in Greenhouse Gas (GHG) emissions from 1990
- 50% of electricity generation from renewable resources
- Statewide energy efficiency increase

**Guiding Principles**

- Market transformation
- Community engagement
- Efficiency
- Private sector investment
- Innovation and technology
- Customer value and choice

**Regulatory Mechanisms**

- Reforming the Energy Vision (REV)
- Clean Energy Standard
Con Edison REV Demonstration Projects

Residential Marketplace

Commercial Marketplaces

Low & Moderate Income & Energy Storage

Future Projects

• Develop new demonstration projects via Request for Information (RFI) process
Market Size Estimation

Step 1
Define use cases and assumptions

Step 2
Derive break-even-point (BEP) for each use case

Step 3
Derive EV volume by use case over time

Use cases
- Vehicle
- Mileage
- Ownership
- Charges/day
- Individual customer plans
- ...

Market forecasts
- Fuel price
- Electricity price
- Component cost
- Incentives
- ...

Ramp up
0%
100%
BEP

Use case n
Use case 2
Use case 1

Use case 2

Use case 1

TCO
ICE
EV

BEPl

2016 17 18 19 ...

Use case n

Electric vehicles in k units
Energy consumpt. in GWh

2016 2018 2020

Source: Team
Electric Vehicle Market Phases
Con Edison Filtered its Target Areas Based on Several Criteria

**Input**
- Current situation of ConEd
- All possible product market combinations

**RFI focus**
- Short list of meaningful opportunities for ConEd
- Roles / product mix to choose partners

**A) Which roles?**
- Regulatory framework
- ConEd’s strategy

**B) Which products?**
- TCO model
  - Time until impact
  - Sufficiently large impact
  - Profitability
  - Ease of implementation
  - Future proof

**C) Which Customers?**
- Business case
  - Individuals vs. fleets
  - Commercial vs. non-commercial decision criteria

**“Litter bin”**
- Roles not in focus
- Products / services not in focus
- Products / services not in focus
Sample of Examined Use Cases

Transit Buses
School Buses
Taxis
Distribution Vans
Ride-hailing Cars
Passenger Cars w/ Home Charging
<table>
<thead>
<tr>
<th>RFI Focus Areas (1 of 2)</th>
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<tbody>
<tr>
<td><strong>Network Planning</strong></td>
</tr>
<tr>
<td>• Con Edison can create network design, data access &amp; analytics services</td>
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<tr>
<td><strong>Smart Home Charging</strong></td>
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<tr>
<td>• Smart L2 home charging can be deployed to effectively shift PEV load to off-peak hours with little inconvenience for customers</td>
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<tr>
<td><strong>Transit Bus Charging</strong></td>
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<tr>
<td>• Charger management is useful for fleet deployments of electric vehicles, including but not limited to transit buses</td>
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<td>L2 Curbside</td>
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<tr>
<td>• L2 curbside charging can be achieved with a positive impact on overall customer bills through increasingly efficient installation and rising utilization</td>
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</tbody>
</table>
Different Focus Areas Share Underlying Skills

- Company identifies best locations for chargers in other demos and beyond
- Builds knowledge and tools around grid network and traffic modeling, GIS modeling, smart charging profiles & tariffs
- Identifies infrastructure investment deferral

- Builds knowledge how to collect and utilize charger data (incl. respond to customers) and on interconnection protocols, e.g. OVGIP
- Helps to improve planning accuracy, installation process and asset management

- Builds knowledge around customer behavior, smart charging and effects on grid load and tariffs

- Builds knowledge around smart charging and bus driving pattern to optimize charger placement

- Builds knowledge around building of public network with multiple stakeholders rather than just individual customers
- Goal of reducing installation cost and improving utilization over period of 3 years
Electrification of Transportation RFI

- Up to $25 million.
- Three major goals:
  - Replace ICE (Internal Combustion Engine) miles with PEV passenger miles
  - Optimizing the utilization of the electric infrastructure
  - Inducing private sector capital and/or other resources (such as a commitment to utilize electric vehicles)
- Solicitation closes June 19th

Go to: coned.com/evrfi
Next Steps,

Thank You, &

Conclusion

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