Our mission: To reduce the economic and environmental costs of energy use
Our Panelists

Jennifer Wallace-Brodeur, Director, Transportation Efficiency

Justine Sears, Consultant

Bethany Whitaker, Senior Consultant
Using Energy Efficiency Finance Models to Electrify Fleets
Energy Services Company (ESCO)
Transportation ESCO?
Plug-in Vehicles (EVs)

All electric

Plug-in hybrid
T-ESCO Framework

1. Focus groups
2. Fleet assessments
3. Financial modeling
T-ESCO Framework

1. Focus groups
   - Interest in medium duty
   - Strong interest in greening fleets
   - Mixed feelings about financing

2. Fleet Assessments

3. Financial modeling
Fleet Assessments

3 Step Approach to EV Integration

(1) Data log existing fleet of vehicles

(2) Test your duty cycle data in FleetCarma’s EV models

(3) Compare benchmark with customized analysis provided through online reports

How are vehicles currently used in the fleet?

Will EVs be capable to do the job? Will they save fleet money?

Which EV technology best matches fleet needs and optimizes TCO?

Vermont Energy Investment Corporation
T-ESCO Fleet Assessments

Three participants

Installed logging devices in 21 vehicles for approximately 1 month
Daily Utilization

- Mon Oct 12 2015
- Tue Oct 13 2015
- Thu Oct 15 2015
- Fri Oct 16 2015
- Mon Oct 19 2015
- Tue Oct 20 2015

The chart shows the daily utilization pattern for the specified dates.
<table>
<thead>
<tr>
<th>Year</th>
<th>Model</th>
<th>Range Capable</th>
<th>Charge Capable</th>
<th>Energy</th>
<th>Emissions</th>
<th>Annual Cost</th>
<th>FleetCarma Score</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>Ford Fusion FWD</td>
<td>-</td>
<td>-</td>
<td>32 MPG&lt;sub&gt;eq&lt;/sub&gt;</td>
<td>0.80 lb/mi</td>
<td>$7,868</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2015</td>
<td>Toyota Prius-Plugin</td>
<td>✔️</td>
<td>✔️</td>
<td>53%</td>
<td>54%</td>
<td>$6,040</td>
<td>✔️</td>
<td>65</td>
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<tr>
<td>2015</td>
<td>Ford C-MAX Energi</td>
<td>✔️</td>
<td>✔️</td>
<td>42%</td>
<td>46%</td>
<td>$6,429</td>
<td>✔️</td>
<td>58</td>
</tr>
<tr>
<td>2015</td>
<td>Ford Fusion Energi</td>
<td>✔️</td>
<td>✔️</td>
<td>39%</td>
<td>42%</td>
<td>$6,710</td>
<td>✔️</td>
<td>56</td>
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<tr>
<td>2016</td>
<td>Chevrolet Volt</td>
<td>✔️</td>
<td>✔️</td>
<td>36%</td>
<td>43%</td>
<td>$6,576</td>
<td>✔️</td>
<td>54</td>
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<tr>
<td>2015</td>
<td>Via Motors Pickup Truck 4WD</td>
<td>✔️</td>
<td>✔️</td>
<td>5%</td>
<td>10%</td>
<td>$12,028</td>
<td>-</td>
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<td>2015</td>
<td>Smart fortwo electric drive</td>
<td>❌</td>
<td>✔️</td>
<td>79%</td>
<td>99%</td>
<td>$4,062</td>
<td>❌</td>
<td>12</td>
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<tr>
<td>2016</td>
<td>Mitsubishi iMEV</td>
<td>❌</td>
<td>✔️</td>
<td>60%</td>
<td>99%</td>
<td>$4,308</td>
<td>❌</td>
<td>11</td>
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<tr>
<td>2015</td>
<td>Nissan Leaf</td>
<td>❌</td>
<td>✔️</td>
<td>76%</td>
<td>99%</td>
<td>$5,119</td>
<td>❌</td>
<td>7</td>
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<tr>
<td>2015</td>
<td>Ford Focus EV</td>
<td>❌</td>
<td>✔️</td>
<td>70%</td>
<td>99%</td>
<td>$5,105</td>
<td>❌</td>
<td>7</td>
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</table>
Fleet Savings (6%)  
$8,349  

Emission Reductions (58%)  
↓61 tons  

Fuel Reduction (59%)  
↓4,758 gal

If recommended vehicles are replaced with the best fit plug-in vehicle, the fleet will save $8,349 over a 7 year service life. The recommended fleet vehicles save 6% of the fleet budget.

If recommended vehicles are replaced with the best fit plug-in vehicle, the fleet can realize an emission reduction of 61 tons over a 7 year service life, representing a 58% reduction in CO₂ emissions.

If recommended vehicles are replaced with the best fit plug-in vehicle, the fleet will reduce gasoline consumption by 4,758 gallons over a 7 year service life, representing a 59% reduction in fuel.
T-ESCO Services included in Program Design

- Technical Assistance
- Fleet Assessment
- Financing
T-ESCO Financial Modeling

Making the business case

- Lease or purchase
- Opportunities for savings (right-sizing, fuel savings)
- Fleet size and composition matters
Indianapolis
“Freedom Fleet”

Total Cost of
Ownership Model
Indianapolis “Freedom Fleet”

- Fleet analysis
  - Right-size fleet
  - Assess which vehicles can be swapped
  - Car sharing technology/platform
- Purchase and maintain EVs
- Install EVSE
- Charge Indianapolis a price / mile
  - Vision Fleet actively monitors driving and charging
Key Findings: T-ESCO Concept

1. The timing is right
   - 2017 EVs have extended +200 mile range

2. External fleet management is appealing for many organizations

3. Requires fleet managers to adopt new management and financing models

4. Fleet conversions work by correcting inefficiencies plus integrating EVs

5. Effective strategy to reduce transportation GHG emissions
Key Findings - Financial Resources

1. Favorable financing for transportation infrastructure
   - State Infrastructure Bank

2. Temporary Incentives for Light Duty Electric Vehicles
   - Federal incentives for consumers
   - State incentive programs

3. Federal Grants for Medium and Heavy Duty EVs
   - Diesel Reduction Act Grants (EPA)
   - LoNo Emission Program (Federal Transit Administration)
Future opportunities

• How do we serve underserved markets?
  • Those that traditionally may not have access to efficient technologies

• How can a T-ESCO address fleet inefficiencies?

• Can a T-ESCO model be adapted to replace an employee mileage reimbursement program?

• Does a T-ESCO model make sense for transit fleets and other heavy duty markets?
Thank You
www.veic.org

Justine Sears
jsears@veic.org