The Future is Now!
Utility-EV Group Buys and Electric Fleets

By Eric Heineman
Electric Vehicle Operation Manager
Former State of IL Sustainability Director
Electric Vehicle Reality Show Star
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Price is decreasing, Range is increasing, and charging time is decreasing

• In 2010, a Nissan battery pack in a LEAF cost $30k to make, in 2017 it costs 10k, thus bigger packs are on the way

• DC fast charging a LEAF can take 15 minutes (to get a 60% charge)

• L2 Charging gives a LEAF, 25 miles per hour of charge
In America’s Heartland, A Power Company Leads Charge For Electric Cars

February 14, 2017 · 4:42 PM ET
Heard on All Things Considered

ROBERT SIEGEL  ANDREA HSU
$10,000 Off a New Nissan LEAF

Through Constellation’s EZ-EV program, new and existing Constellation electric supply customers can receive a $10,000 discount on the purchase of a new 2016 or 2017 Nissan LEAF.

LIMITED TIME OFFER: This great deal expires MARCH 31, 2017.

SIGN UP
Electric Vehicles

SPECIAL OFFER - Nissan LEAF $10k discount available for a LIMITED TIME.

Looking to buy or lease an electric vehicle? Ameren provides key resources and information to help you make your decision.

- **Today's EV Options**: Discover your options among today's electric vehicles.
- **What's the Cost?**: Know the costs of owning an electric vehicle.
- **Incentives & Resources**: Find current EV buying incentives and rebates.
- **Charging at Home**: Prepare your home for your electric vehicle.
- **Find a Public Charging Station**: Locate charging stations in your community.
- **Guide to Electric Vehicles**: Learn the basics before you buy or lease.
Special Nissan LEAF Pricing!

For a limited time, Nissan is offering a $10,000* incentive to employees & customers of IPL

Offer is valid through March 31, 2017 on ‘Retail purchase’ of 2016 & 2017 LEAFs

*The $10,000 incentive cannot be combined with any other Nissan special incentives (lease, APR, or rebates)

- Available Best-In-Class 107 Mile Range
- No Oil Changes Ever
- Never Buy Gas Again
- Potential State HOV Access
- 24 Months of Complimentary Public Charging


$10,000* Incentive

Up to $7,500 Federal Tax Incentive

Up To: $17,500
# The Business Case for Fleet Electrification

## Total Cost of Ownership (TCO) Cost Comparison: Hybrid vs. EV

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Life Cycle (Yrs)</th>
<th>Acquisition$^1$</th>
<th>Life Fuel$^2$</th>
<th>Life Maint$^3$</th>
<th>Salvage$^4$</th>
<th>TCO$^5$</th>
<th>GHG Emissions</th>
<th>tons CO$_2$/Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hybrid</td>
<td>Ford CMAX</td>
<td>10</td>
<td>$25,028</td>
<td>$5,830</td>
<td>$6,481</td>
<td>$2,503</td>
<td>$34,836</td>
<td></td>
<td>19.6</td>
</tr>
<tr>
<td>EV</td>
<td>Nissan Leaf</td>
<td>10</td>
<td>$22,638</td>
<td>$1,980</td>
<td>$5,553</td>
<td>$2,264</td>
<td>$27,907</td>
<td></td>
<td>0.3</td>
</tr>
</tbody>
</table>

1. Washington State vehicle contract pricing including sales tax (the Leaf is tax exempt until June 30th, 2019)
2. Fuel assumptions: 5500 miles/yr; $3.18/gal (3 yr avg); EV kWh cost = $0.036/mi (@$0.08/kWh); CMAX MPG = 30;
3. Routine maintenance only (PM, breakdowns, repairs)
4. Salvage assumptions: 10% of original cost
5. TCO = acquisition + life fuel + life maintenance - salvage

Replacing a Hybrid with an EV = **98%** reduction in GHG emissions

$6,930 reduction in lifetime cost per vehicle

Operating costs for 300 vehicles:

<table>
<thead>
<tr>
<th>Type</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hybrid (CMAX)</td>
<td>$10,450,908</td>
</tr>
<tr>
<td>EV (Leaf)</td>
<td>$8,372,019</td>
</tr>
</tbody>
</table>

**$2,078,889** Savings w/ EV conversion

This is the most conservative scenario of converting highly efficient hybrids to EVs. Savings will increase by converting less efficient vehicles like SUVs, PEO scooters and non hybrid midsize sedans in addition to hybrids.
What do you want the world to look like? And what are you, and I, going to do to make it look that way?

Photo-thanks to National Wildlife Federation
Test Drives today!

• 10:30 am- 12:30 pm outside, come drive the 100% Electric, Affordable Nissan LEAF!

Thank you!

Eric Heineman
@e_heineman