



FPL Electric Vehicle Initiatives

Jason Gaschel

Program Manager, Electric Vehicles
October 17, 2018

Agenda

-  Electric Vehicle Suitability Assessment

FPL has long supported clean transportation

FPL Initiatives

- **FPL's Green Fleet**
 - Over a decade of leadership
 - 100 million miles using biodiesel
 - Over 570 hybrids and electric vehicles (EV)
- **Promoting plug-in EVs**
 - 100+ consumer education events a year
 - Engage with national advocacy groups
 - DOE Workplace Charging Ambassador
 - 150+ charging ports at FPL locations



FPL's programs have been recognized by the U.S. Department of Energy

FPL analyzed feasibility of fleet transformation

FPL Fleet Study

- **FPL collaborated with NREL and EZEV to evaluate fleet vehicles**
 - Determine criteria for replacement with electric vehicle (EV)
 - Smart phone based telematics / no vehicle data transmitted
- **Project parameters and outcomes**
 - Selected 25 vehicles in Customer Service Business Unit
 - Monitored driving habits for 3 months
 - Benchmarked against several electric vehicle options
 - Report produced at end of study to guide future purchase decisions



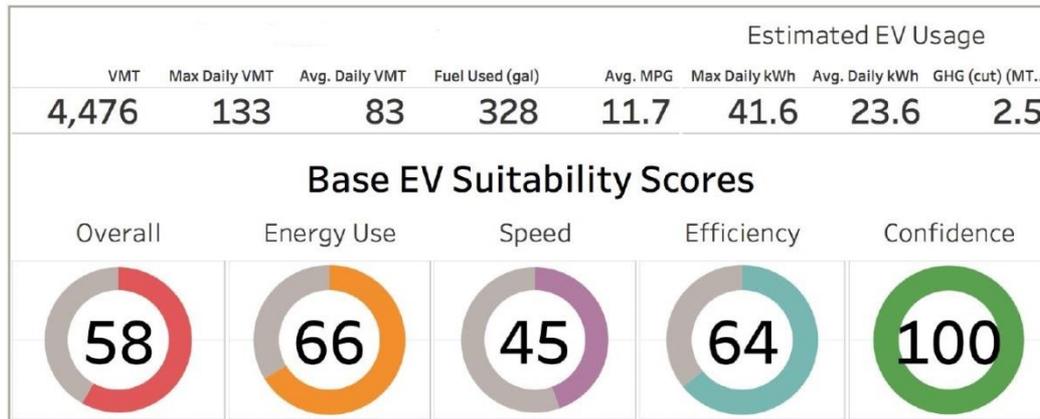
The pilot project allowed FPL to gain internal experience that can translate to benefits for customers

Pilot Details

- **Requirements to participate:**
 - Fleet vehicle approaching end of service life
 - Drivers possess a company cell phone with downloaded app
 - Each participant vehicle's characteristics modeled
 - Passive trip monitor with USB beacon located in vehicle
- **Report determined Base EV Suitability Score**
 - Driver range evaluated in 5 categories
 - Overall, Energy Use, Speed, Efficiency, Confidence
 - Scores are compared to electric vehicle models
 - Report determines if the driver's profile is good fit for EV
 - GPS map of daily routes and charging station locations
 - Idling time, mileage and mpg calculated

Visual data allows for meaningful comparison between vehicle choices

Example Screenshot from Report



The pilot project provided a data driven report to inform fleets about electric vehicles

Conclusion

- **Pilot helps to get the conversation with fleet managers started**
 - Internal fleet vehicle replacements
 - FPL customers who own and operate fleets
 - Give vehicle manufacturers feedback on future product offerings
- **Allow utility fleets to meet EEI's 5% capital spend challenge for electric vehicles**
 - Data needed to drive decision making
 - Report helpful to the FPL as tool to plan for future vehicle replacements and determine locations to add charging stations

FPL is here to help

FPL Contact

Jason.Gaschel@FPL.com

Office: 561-694-3340





FPL®

Appendix

Volkswagen violated several sections of the Clean Air Act

Background

- Emission Control Systems were programmed to circumvent dynamic emissions control testing required by the EPA
- Approximately 500,000 light duty Volkswagen 2.0L Turbo Diesel vehicles produced between 2009-2015 were found to be non-compliant
- Initial settlement with U.S. Government \$14.7B



Expensive for VW, but an opportunity for the EV market

Settlement has three sections, two of interest to Florida

Settlement Details

- **Automotive repair or buyback (\$11B)**
- **The Mitigation Trust (\$2.9B)**
 - Florida allocated **\$166 M** based on 5.6% of vehicle population
 - Trust funded over 3 years to be spend over 10 years
 - FL Department of Environmental Protection overseeing plans
- **Zero Emission Vehicle (ZEV) Investment (\$2B)**
 - Electrify America (EA) created as VW subsidiary to deploy chargers
 - California investment \$0.8B, and Florida gets a share of \$1.2B
 - Private, 10 Year Investment, where EA decides charger placement

Trust funds can be spent on commercial vehicle upgrades and electric vehicle charging infrastructure

Eligible Spending Actions

- **Repower/Replace commercial vehicles**
 - Includes buses, forklifts and ground service equipment
 - Funding model favors electric drive
 - Opportunity to fund electric buses
- **Up to 15% of funds can be used EV chargers (\$24 M)**
 - Purchase, install, O&M
 - EV charging: public, workplace, multi-unit dwelling, fast charging

Public Comment in Florida has supported investment in Electric Vehicle technologies

The goal is to achieve NOx reductions

Eligible Actions

1) Class 8 and Drayage Trucks



2) School, Shuttle, Transit Buses



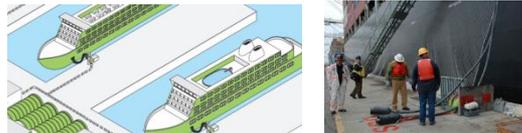
3) Freight Switchers



4) Ferries/Tugs



5) Ocean Going Vessels Shore Power



6) Class 4-7 Freight Trucks

Class 7	26,001 - 33,000 Lbs.	 utility	 beverage	 distribution van
Class 6	19,501 - 26,001 Lbs.	 rollback recovery	 grocery	 general freight
Classes 4 & 5	14,001 - 19,501 Lbs.	 stake	 cell forward distribution	 walk-on van

Medium Truck

7) Airport Ground Support Equipment



8) Forklifts



10) DERA Program

Used to off-set cost share expense for grant program funded as part of Energy Policy Act.

9) EV Supply Equipment (Chargers)



Funding favors municipal over private fleets

Heavy Duty Vehicle Repower or Replacement

- Government and privately owned buses qualify for different funding support
- Florida has already decided not to fund projects at 100%

Cost percentage that may be funded	Govt-Owned	Non-Govt Owned
Repower with new diesel or AFV engine	100%	40%
New diesel or AFV vehicle	100%	25%
Repower with new all-electric engine (incl. infra.)	100%	75%
New all-electric vehicle (incl. infra.)	100%	75%

» Source: EEI VW Settlement Webinar