



# MEMORANDUM

AGENDA ITEM V.A.1

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DATE: JULY 1, 2013

TO: COUNCIL MEMBERS

FROM: STAFF

SUBJECT: ELECTRIC VEHICLE COMMUNITY READINESS PLAN

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As host of the Southeast Florida Clean Cities Coalition, the South Florida Regional Planning Council partnered with Florida Power & Light Company (FPL) to help prepare communities in the seven-county region for adoption of electric vehicles. Funded through the U.S. Department of Energy, this public-private partnership of local governments and private businesses worked together to examine benefits and challenges unique to the region in transitioning to electric transportation. The Plan, entitled "Getting Southeast Florida Plug-in Ready", was completed recently and may be accessed at the following link: [DriveElectricFlorida.org](http://DriveElectricFlorida.org).

FPL and Council staff will present the findings of the Plan that will guide Southeast Florida over the coming few years as the public begins to seek alternatives to gasoline-powered cars and trucks.

Attached are a:

- Fact sheet providing background information regarding the Southeast Florida Clean Cities Coalition, and
- PowerPoint presentation about "Getting Southeast Florida Plug-in Ready".

## Recommendation

Information only.

## Background

The Clean Cities program began in Florida in 1993 with the creation of the Southeast Florida Clean Cities Coalition by Executive Order of the Governor and the subsequent designation by the U.S. Department of Energy. The Coalition is managed by the South Florida Regional Planning Council, a regional public agency whose mission is to work with South Florida's public, private, non-profit, and civic leadership to create a sustainable future for the region.

The Southeast Florida Clean Cities Coalition is a public-private partnership composed of local government representatives and the private sector concerned with alternative fuel technology and programs. The role of the Coalition is to provide a fuel-neutral policy direction to maximize the use of vehicles operating on clean, alternative fuels throughout the region of nearly six million people living in Broward, Miami-Dade, Monroe and Palm Beach Counties.



## Southeast Florida Clean Cities Coalition

Chair: Patricia Asseff

Coordinator: Christine Heshmati

**2013 Emerald Sponsor:**  
TECO Energy

### Jurisdiction

Broward County  
Miami-Dade County  
Monroe County  
Palm Beach County



<http://www.floridagoldcoastcleancities.com/>

## Drive Electric Florida

Through the support of a U.S. Department of Energy planning grant, the South Florida Regional Planning Council and its Southeast Florida Clean Cities Coalition partnered with Florida Power & Light Company to create a community-based electric vehicle (EV) infrastructure readiness plan. This effort is helping to prepare for successful and accelerated deployment of plug-in EVs and infrastructure in the seven-county region of SE Florida and beyond.



The plan helps our communities to:

- Establish criteria to select, site and prioritize public EV infrastructure (EVSE),
- Analyze fleet life cycle costs for potential EV fleet conversions and deployment,
- Streamline regulatory and permitting barriers to EV and EVSE deployment,
- Create communications strategies for educational and outreach purposes, and
- Seek funding for future EV and EVSE deployment along a portion of the US-1 Corridor in Miami-Dade County

Findings have been released and are consistent with the US Department of Energy Clean Cities' goal to reduce US petroleum usage by 2.5 billion gallons per year by 2020.

### Recent and Upcoming Activities:

- September 2012: Alternative Fuel Vehicle Road Shows in Miami Overton and Delray Beach produced by Adventures and in partnership with Miami-Dade County and the City of Delray Beach
- October 2012: National Alternative Fuel Vehicle Day Odyssey Celebration with breakfast sponsored by the Miami International Auto Show
- November 2012: Participation in the "greening" of the Miami International Auto Show
- February 2013: Biennial Awards Breakfast
- May 2013: CNG Happenings in Southeast Florida
- July 2013: Idling Gets You Nowhere
- Sept 2013: Propane - The Liquid Natural Gas Solution

## Electric Vehicle Community Readiness Plan

July 1, 2013

**Steering Committee**  
The Honorable Patricia Asseff  
Brian Hanrahan  
James Murley

**SFRPC**  
Bob Cambric  
Christine Heshmati

**FPL**  
Rob Regan  
Anne-Louise Seabury

**Drive ELECTRIC Florida** Getting Southeast Florida Plug-in Ready

**There are several important benefits of electric vehicles;  
growth of the market is good for Floridians and the nation**

# Get charged up!

<p><b>Save money</b> "Plug in" and spend far less than you do at the gas pump</p> <p style="text-align: center;"><b>Save 80%</b></p>	<p><b>Clear the air</b> Say goodbye to tailpipe emissions</p> <p style="text-align: center;"><b>70% fewer emissions</b></p>	<p><b>Support energy independence</b> Fuel your car with American-made energy</p> <p style="text-align: center;">At FPL we've reduced foreign oil use by <b>98%</b></p>	<p><b>Enjoy the ride!</b> Feel the excitement of quick, quiet and smooth acceleration</p> <p style="text-align: center;"><b>100% fun</b></p>
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CHANGING THE CURRENT. [www.FPL.com/ElectricVehicles](http://www.FPL.com/ElectricVehicles)

**Economic development is another key benefit – The Region's residents spend approximately \$10 billion annually on gasoline for transportation. The majority of that money is sent out of state.**

**Drive ELECTRIC Florida**

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But there's a long way to go before the majority of people choose electric drive; there is lot of work ahead of us to remove barriers (perceived and real!)

### Southeast Florida Planning Grant

- One of sixteen grants awarded nationwide to stimulate infrastructure planning and policy development
- Award of \$500,000 is for a seven-county regional planning effort
- Teams focused on:
  - Fleet adoption,
  - Infrastructure development,
  - Policy/permitting/codes/incentives,
  - Education & outreach,
  - U.S. 1 corridor demonstration project
- Funding through June 2013



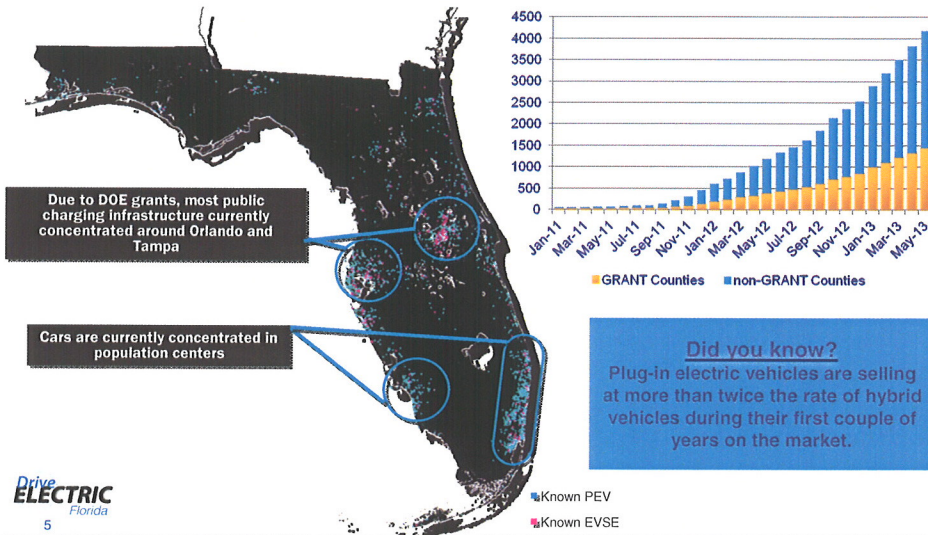
Work aimed at expanding market and removing barriers to electric vehicle and infrastructure adoption

There are more than a dozen models of plug-in electric vehicles today – with many more on the way



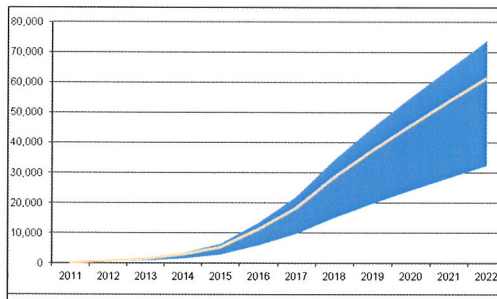
While plug-in electric vehicles are still a new market, sales are rising sharply and Florida is considered one of the top markets

### PEVs in Florida



And we're forecasting this growth to continue – including in Southeast Florida

### Southeast Florida Plug-in Electric Vehicle Forecast



Cumulative PEV Sales – Southeast Fla.

Year	Low	Predicted	High
2012	443	844	1,010
2013	777	1,480	1,773
2014	1,492	2,836	3,402
2015	2,761	5,245	6,291
2016	5,864	11,143	13,368
2017	9,691	18,414	22,093
2018	15,021	28,540	34,243
2019	19,790	37,600	45,116
2020	24,183	45,946	55,132
2021	28,331	53,825	64,588
2022	32,394	61,545	73,853

Our forecast was developed more than a year ago, and appears to be too conservative – in fact, through May 2013, there are already 1,450 PEVs on Southeast Florida's roads, which was the amount predicted for year end.

Vehicles can be charged in a number of ways; characterized by the speed of charge. Selection should be based on site characteristics and the typical needs of users

### Infrastructure: Charging Levels

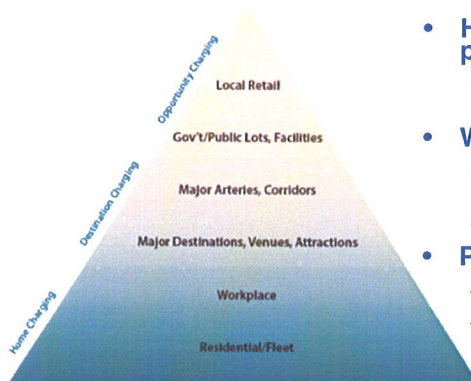
	AC Charging Home, Fleet and Public Use		DC Fast Charging Public and Large Fleet Use	
Type	Level-1	Level-2	Level-1	Level-2
Power	120V, 1.4 kW @ 12 amp 120V, 1.9 kW @ 16 amp	240V, up to 19.2 kW (80 amp)	200-500V, up to 40 kW (80 amp)	200-500V, up to 100kW (200 amp)
Charge Time (Miles of range per hour of charge)	3 to 5 miles	3.3 kW – 10 to 14 miles 6.6 kW – 20 to 25 miles 9.6 kW – 40 to 45 miles 19.2 kW – up to 60 miles	40 kW – up to 120 miles	100 kW – up to 300 miles

Cost and complexity tends to increase the faster the charging level. →

**Did you know?**  
Most plug-in electric vehicles can be charged overnight on a standard electrical outlet.

Electric vehicles are recharged where they are typically parked – at home, at work, at recreation, at retail/shopping sites

### Charging Locations



- **Home/Fleet: More than 80 percent of charging**
  - “home refueling,” charging overnight
- **Workplace: Supports ownership**
  - Provides charge for those without dedicated home charging
  - Extends daily range
- **Public: Allows for mass adoption**
  - Relieves “range anxiety”
  - BEST in destination locations or along major highway corridors

Electric vehicles start every day with a “full tank.” Charging needs are dictated by distance and destination.

**Southeast Florida has a high proportion of multi-unit dwellings, posing a hurdle to widespread access to home charging for many of the region's residents**

### PEV Charging at Multi-Unit Dwellings

About 41 percent of Southeast Florida's occupied homes are multi-unit dwellings – compared with 23 percent nationwide.



Photo courtesy: Art Seitz

**In contrast to single-family homes, charging installation at multi-unit dwellings is more complex**

Did you know?

Approximately 75 percent of multi-unit dwelling residents do not have access to an electrical outlet while parked.

**Many fleets are excellent candidates for electrification – particularly those with predictable routes, with a 'home' base (making charging easier)**

### Leading Fleets to Community Leadership



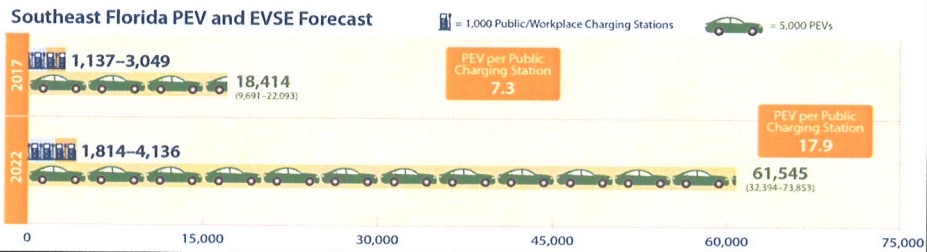
- **Several public and private entities within the region express interest in fleet electrification**
  - Enhanced image, lower operating costs, lower emissions, meeting government emissions standards
- **However, barriers are in still place preventing widespread fleet adoption**
  - Limited product selection
  - Agency purchasing guidelines/lists
- **Will continue working through issues, and educating fleets as part of routine Clean Cities activities**

An electric fleet vehicle says something about the values of the agency or company operating it.

Public charging supplements home charging and workplace charging; there are approximately 100 public charging stations in Southeast Florida today

### Public charging

- Should be prioritized where needed the most
- Destination locations (places where people travel from afar and stay for few hours) and along major highways, rest stops
- Quantity of public charging should grow as demand increases; a phased growth
- Payment models should be fair and maximize space utilization, i.e. vehicle turnover
- Charging levels selected based on expected mileage and parking duration of users



To tie together the principles of the grant project, a plan for a car share demonstration project was developed for the U.S. 1 corridor area in Miami-Dade County

### U.S. 1 Corridor Demonstration Project

- Capitalizes on area's existing mass transit footprint
- Would expose up to 50,000 commuters per day to PEVs and charging opportunities
- Identified a potential demand for approximately:
  - 140 car share vehicles (15-20% PEV)
  - 40 public charging stations





Effective policies, codes, permitting, and financial and non-financial incentives can help ease some barriers for PEV buyers and charging site hosts

### Policy, codes, permitting, incentives

Permitting	Zoning	Building code	Incentives
<ul style="list-style-type: none"> <li>Streamline and standardize</li> </ul>	<ul style="list-style-type: none"> <li>Charging infrastructure as a ancillary or principal use</li> </ul>	<ul style="list-style-type: none"> <li>Charging stations or conduit with new development or major renovations</li> </ul>	<ul style="list-style-type: none"> <li>Non financial incentives – preferred parking, HOV lane, etc.</li> <li>Financial incentives – Free managed lane access, purchase rebates, etc.</li> </ul>

Federal, state, local governments can encourage adoption of plug-in electric vehicles in a variety of ways.

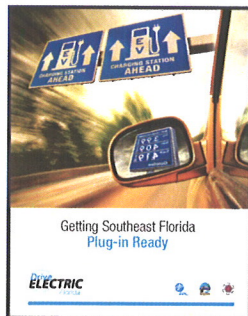
The team is available for meetings, workshops, and other outreach activities to help Southeast Florida communities continue to prepare

### Tools and Resources

Contact us:

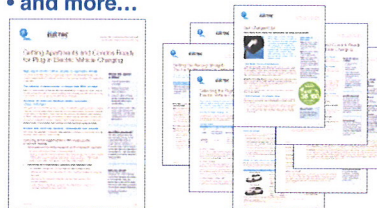
[Help@DriveElectricFlorida.org](mailto:Help@DriveElectricFlorida.org)

[Electric-vehicles@FPL.com](mailto:Electric-vehicles@FPL.com)



Review the fact sheets on topics including:

- Installation at multi-unit dwellings
- Equipment selection
- Siting charging stations
- Workplace charging
- Fleet considerations
- and more...



The full report – and nine topical fact sheets can be found at [www.DriveElectricFlorida.org](http://www.DriveElectricFlorida.org)



## Questions

Drive  
**ELECTRIC**  
Florida

Getting Southeast Florida  
Plug-in Ready

