Resilient Mobility Transitions into the Future

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2. Jose M. Gonzalez, Senior Vice President of Corporate Development, Florida East Coast Industries
3. William Cross, Deputy Executive Director of Planning and Programs, Broward MPO
4. Nick Uhren, Executive Director, Palm Beach Transportation Planning Organization
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Electric Vehicles

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Likely the majority of vehicles on the road at some point will be electric

Forecasts for Electric Vehicle (EV) Penetration Predict ~25% of new sales by 2030

**Electric Vehicles (EV) Forecast**

- **Today:**
  - ~8 million registered personal vehicles in Florida
  - 30k electric vehicles or 0.4%

- **By 2025?:**
  - ~250k electric vehicles or ~4% of all vehicles

- **Grid implications:**
  - ~18 GWh of mobile batteries

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1 Source: Bloomberg New Energy Finance
FPL is a proponent of transportation electrification

### Current FPL EV Strategy

<table>
<thead>
<tr>
<th>Expansion of Market</th>
<th>Customer EV Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Expand EV fleets</td>
<td>Understand EV owner expectations</td>
</tr>
<tr>
<td>• Raise public awareness of EVs</td>
<td>Produce educational materials</td>
</tr>
<tr>
<td>• Support infrastructure development</td>
<td>Support events</td>
</tr>
<tr>
<td>• Engage government officials and commercial customers</td>
<td>Be the EV subject matter expert</td>
</tr>
<tr>
<td>• Encourage supportive EV regulatory and legislative policy</td>
<td>Ensure FPL processes support EV buyers</td>
</tr>
</tbody>
</table>

Additionally, adding EVs to FPL’s grid lowers rates
There are several benefits to drive electric

Why Drive Electric?

• Zero Emissions
  - EVs powered with FPL’s clean electricity have at least 70% fewer emissions than gas-powered vehicles when power plant emissions are considered

• Energy Independence
  - Less than one percent of all FPL power comes from oil
  - Fuel up with domestic electricity vs. foreign oil

• Lower Costs
  - Reduced fuel costs
  - Less maintenance
Major auto manufacturers have committed $170B towards EVs with 160 new models by 2023

### EV Announcements

<table>
<thead>
<tr>
<th>Manufacture</th>
<th>Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>GM</td>
<td>20 new all-electric models by 2023</td>
</tr>
<tr>
<td>Ford</td>
<td>“Team Edison” to lead EV development</td>
</tr>
<tr>
<td>VW</td>
<td>Invest $24B by 2030; 80 new Evs by 2025</td>
</tr>
<tr>
<td>BMW</td>
<td>12 all-electric models by 2020</td>
</tr>
<tr>
<td>Mercedes</td>
<td>$1B in Alabama plant; 50 hybrid or electric models by 2022</td>
</tr>
<tr>
<td>Volvo</td>
<td>All new models in 2019+ to be hybrid or electric</td>
</tr>
<tr>
<td>Nissan</td>
<td>12 all-electric models by 2022</td>
</tr>
<tr>
<td>Porsche</td>
<td>$7.4B to electrify 50% of its lineup by 2025</td>
</tr>
</tbody>
</table>
Thank you!
Brightline’s Clean Energy & Green Initiatives

Jose M. Gonzalez, SVP of Corporate Development of FECI

October 24, 2018
THE ONLY PRIVATELY OWNED, OPERATED AND MAINTAINED EXPRESS INTER-CITY TRAIN SERVICE IN THE UNITED STATES

- **Removing** 3 million vehicles from roads each year
- **Reducing** congestion, greenhouse emissions and fuel consumption

**SIEMENS**
Trainsets **100% Made in America** by Siemens and 40 other suppliers in over 20 states

**Connecting** Florida Residents, Business Travelers, Commuters & Tourists

**Leverages existing** Florida East Coast Railway used by trains for more than 100 years

**Combination of two companies**: Express intercity passenger rail service and transportation oriented real estate in South Florida downtowns
Clean Energy

- Brightline partnered with Florida Power & Light (FP&L) to provide clean biodiesel to fuel its trains
- FPL will supply Brightline with two million gallons of biodiesel-blended fuel annually, which is produced in Palm Beach County
- Biodiesel fuel is a cleaner-burning replacement produced from renewable sources like corn, soybeans and used cooking oil
Brightline Trains

- Brightline trainsets meet the highest emissions standards, Tier IV, set by the federal government.
- Each trainset is powered by Siemens Charger locomotives and equipped with fuel tanks designed to contain up to 2,200 gallons.
- The projected consumption of the trains is two gallons of fuel per mile.
  - The 67-mile one-way trip from Miami to West Palm Beach consumes 134 gallons.
  - Each trainset can carry approximately 240 guests.
Solar Trees & EV Charging Stations

- Brightline stations feature FPL SolarNow trees and other solar projects that provide emissions-free power for the grid and shade for guests.
- Each solar tree is capable of producing up to 3 kilowatts of solar energy, enough to power an electric vehicle 15,000 miles per year.
- Brightline guests who drive electric cars can charge them at the EV charging stations located in Brightline garages.
Clean Energy Statistics

- After Brightline connects to Orlando and a few years into stabilized ridership, the company expects to remove 3 million cars from the roadways each year.
- Higher speed trains reduce CO2 emissions by three times that of a bus, about four and a half times that of a normal car and close to five times that of airplanes.
STATIONS

Designed by
Located in the heart of the city, all the places you want to go to are walkable. Stroll down to West Palm Beach’s multiple art museums, entertainment venues, beaches and even wildlife sanctuaries.
Located in the heart of downtown, more than 100 shopping and dining options are closer than ever. A short walk and you’re at the Broward Center for the Performing Arts, museums and miles of beautiful beaches.
From the immersive arts and culture to the incredible sports, events and nightlife, Miami never disappoints. Enjoy world-renowned dining and shopping, the Art Deco District of Miami Beach and relax on fabulous beaches and marinas.
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The Transportation Sector Generates the Largest Share of Greenhouse Gas Emissions


- Transportation: 28.5%
- Industry: 22%
- Electricity: 28%
- Agriculture: 9%
- Commercial & Residential: 11%

Share of U.S. Transportation Sector GHG Emissions by Source, 2016

- Light-Duty Vehicles: 60%
- Medium- and Heavy-Duty Trucks: 23%
- Aircraft: 9%
- Rail: 2%
- Other: 4%
- Ships & Boats: 2%
- Other: 2%
Transportation Drivers: VMT and Population

2016 experienced the largest annual increase in VMT since tracking began in 1971.

1.7 Million New Population by 2045

5.9 Million Existing Population

Source: Federal Highway Administration
2045 Regional Transportation Plan Scenario Planning

Land Use and Development

Trend
Status Quo

Flexible Transit
“Flex” Revenue to Transit
Status Quo Development

Regional Transit
New Revenue
Full Regional Transit
Status Quo Development

Alternative Growth
Shift Growth to Regional Transit

Legislative Change and Transportation Investment

SEFTC Southeast Florida Transportation Council
TPM Miami-Dade Transportation Planning Organization
Broward Metropolitan Planning Organization
Palm Beach Transportation Planning Agency
<table>
<thead>
<tr>
<th>Trend</th>
<th>Compact Development</th>
<th>Technology</th>
<th>Resiliency</th>
<th>Community Vision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continues recent trends in growth &amp; transportation investments</td>
<td>Aggressively pursue high-density development, infill, &amp; redevelopment within key corridors</td>
<td>Aggressively pursue advancing &amp; emerging transportation technology integration</td>
<td>Aggressively respond to sea level rise, severe weather events, and other forces</td>
<td>Integrate individual community and agency visions</td>
</tr>
</tbody>
</table>

Hybrid Scenario
Resilient Transportation in South Florida

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Efficiency Supports Resiliency
Shared Mobility Supports Resiliency
Regional Transit Supports Resiliency

Tri-Rail Coastal Link
Resilient Mobility Transitions into the Future

Questions & Discussion