

Get Ready Tampa Bay: **Electric Vehicles As Part Of Our** **Region's Innovative Energy And** **Environmental Solutions**

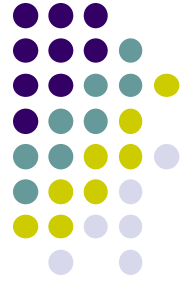
Avera Wynne, Planning Director
Tampa Bay Regional Planning Council

October 21, 2010





There Are Several Types Of Electric Vehicles



- Hybrid Conversions
 - Standard hybrids converted to plug-in with an after-market battery kit
- Dual-Mode Plug-in Hybrid (PHEV)
 - Gas engine and electric motor work together to optimally power the drive train
- Extended Range Electric Vehicle (E-REV)
 - Capable of medium range, high speed all-electric drive with small engine as back-up generator
- Battery Electric Vehicles (BEV or EV)
 - Greater battery capacity for long range, all-electric drive and no back up engine



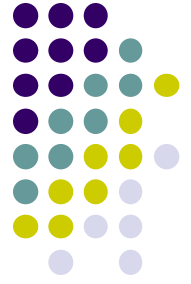
Toyota Prius



Chevy Volt



Tesla Roadster



Pros and Cons of EVs

Pros

- Reduced emissions.
 - Some vehicles by 2/3
- Much lower per mile operating cost.
- Reduced reliance on imported petroleum products.
 - Utilities are switching to NG and other cleaner fuel mixes.
- Potential use of renewable energy
 - Electric utilities use many sources of energy to generate electricity.

Cons

- All Electrics (EVs) can have range issues. “Range Anxiety”
- Limited “public” places to plug in.
 - But 80% charging done at home
- Initial purchase prices may be higher than comparable ICE vehicles.
 - Especially without incentives
- Public concern over disposal of spent batteries
 - Newer type batteries are less toxic



Q and A: General

- Q. Where will most charging be done?
 - A. At home. Home charging can be accelerated with 240 charging stations.
- Q. When will we see a lot of EVs on the road?
 - A. White House has set a target of 1 Million EVs by 2015.
 - A. Some studies have used an estimated 25% penetration by 2050.
- Q. Is there money available to help “get ready?”
 - A. Tax Credits
 - Up to \$7,500 tax credit for light duty vehicles
 - 10% tax credits for conversions
 - Up to 50% credits for infrastructure
 - A. Stimulus money and other DOE monies are sometimes available for infrastructure.

EVs run cleaner than ICEVs: Cleaner emissions (100 mile profile)



Nissan LEAF EV:

24 kWh charge* x 1.171 lbs CO₂ / kWh** = **28.10 lbs CO₂**

Nissan Versa***:

3.571 gal fuel x 19.4 lbs CO₂ / gal = **69.28 lbs CO₂**

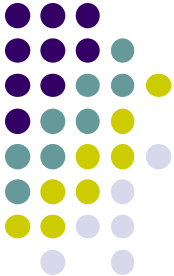
Reduction of greenhouse gas = **59.4%**

* Assumes charge depleted battery module

** Assumes 2009 Progress Energy Florida system average emissions

*** Fuel economy based on 24/32 mpg automatic transmission vehicle

EVs run cheaper than ICEVs



Technology	MPG	Cost / Mile*
PHEV	22 miles / 70 cent charge	\$0.031
Hybrid	46 mpg	\$0.054
Standard ICE	25 mpg	\$0.10

- Analysis Utilizes \$2.50 Retail Gasoline Price and \$0.138 / kWh Charge
- 30 – 40 mile electrically assisted driving range when using a combination of battery pack and internal combustion engine (ICE)
- PGN results: Initially ~ 22 mile all electric range, pre software upgrade. Mid – upper 20s, post installation.

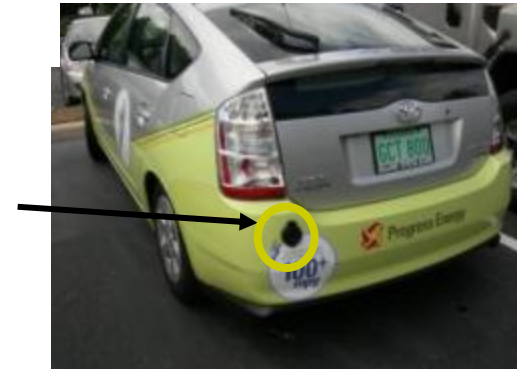
So one can say: “Electricity is around 75¢/gal”
Other studies are saying 3 to 4¢ per mile



Are We Ready To Plug In?



120 VAC
standard
plug





Installation of Charging Stations in Public Places



Solar Port

Cal Berkeley Campus



Elkhorn, Iowa (Pop. 650)



San Francisco



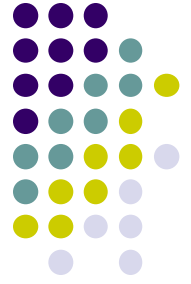
Some of Our Goals

- Get Tampa Bay electric car “ready.”
- Attract OEMs to Tampa Bay
- Positive economic impact and green jobs growth
- Reduce vehicle emissions
- Increase use of alternative and/or innovative energy
- Increased energy independence



Get Ready Tampa Bay

Roles and Activities



- Collaborate and Incubate ideas
- Marketing
- Public outreach and education
- Get fleet managers and businesses involved
- Promote installation of vehicle-charging stations.
- Update local codes
- Educate electricians and building inspectors to expedite the permitting process.
- Help expedite the standardization of codes and charging facilities

www.GetReadyTampaBay.org



Project Get Ready Cities



Orlando

Orlando, Florida is the most recent city to join Project Get Ready with their Get Ready Central Florida initiative.



Rhode Island

We're excited to announce that the state of Rhode Island has just joined PGR in January 2010!



Houston, Texas

The City of Houston is currently working on two major efforts in preparation for the electrification of vehicles.



Greater Denver, Colorado

A total of 12 communities and more than two dozen governmental and private business partners have joined Denver in plans to get ready.



Toronto, Ontario

The Toronto Atmospheric Fund is working with partners in the municipal, utility, corporate and non-profit sectors to prepare the local landscape for plug-in vehicles to be part of Toronto's sustainable transportation plan.



Indianapolis Region

The Indianapolis Region is working with the Energy Systems Network to get ready. Check back here in the coming weeks for a regional charter, partner listings, working groups, and much more.



Raleigh & Research Triangle Region, North Carolina

Raleigh is getting ready! The City of Raleigh, Progress Energy, Advanced Energy, and RMI are collaborating to kick-off the Raleigh readiness initiative. Working groups are forming now. The Raleigh project is quickly expanding to collaborate with the entire Triangle region.



Portland, Oregon

Portland, Oregon is getting ready. PGR is working with interested citizens and companies in Portland to convene stakeholders and synthesize all the existing energy and work put into the plug-in vehicle revolution.



Some early successes

- Get Ready Tampa Bay kick-off event
- GRTB website and information portal
- OEMs interest growing in Tampa Bay/Florida
- Forbes Magazine named Tampa Bay as one of ...

America's Electric Car Capitals

- June 21, 2010

Chevy Volt Test Drive in Lake Buena Vista October 30th





Get Ready Tampa Bay

for electric transportation

- Home
- About Us
- Project Get Ready
- Partners
- News
- Links
- Join List Serv
- Event Video
- GRTB Charter

Technical Groups Now Forming!! Join the GRTB Email Lists for General Annou

GRTB presented to the Tampa Downtown Transportation Committee on October 8th.

GRTB participated in the New North Transportation Alliance/USF Transportation Expo on September 29th

GRTB to Presented at Hillsborough County E3 Forum on September 17th

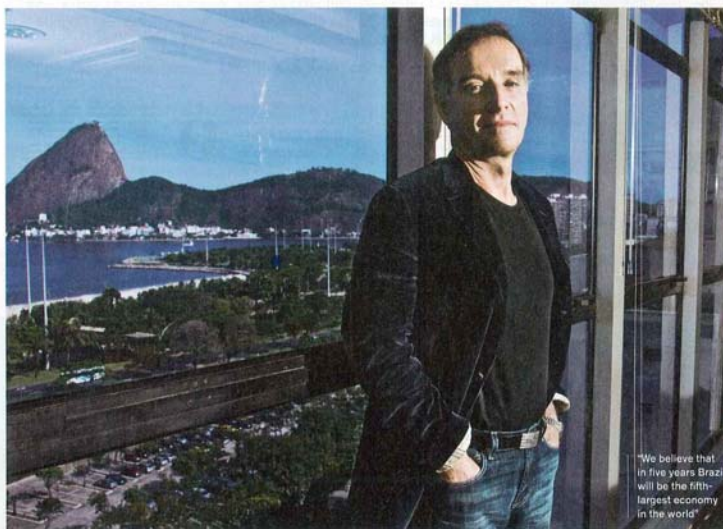
GRTB Presents to Clearwater Rotary - September 1

GRTB Charges up the USF TAMPA CAMPUS - August 2
Representatives from diverse departments of the University of South Florida gathered in Tampa on August 2 for an Electric Vehicle Roundtable session. Sponsored by Get Ready Tampa Bay and hosted by USF's Center for Urban Transportation Research, representatives from GRTB, Progress Energy, and TECO, briefed University officials on the state of development and deployment of electric vehicles in the Tampa Bay Region. Top faculty and staff from USF Offices of Sustainability, Corporate Relations, Facilities, and Parking & Transportation, all participated in the session as did USF researchers. College of Engineering Dean John Wiencek, the Clean Energy

The T. Boone of Brazil



AT THE TABLE CHARLIE ROSE



"We believe that in five years Brazil will be the fifth-largest economy in the world."

EIKE BATISTA Rich Man. Richest Man?

Eike Batista—known as a swashbuckling businessman and no stranger to the gossip columns—is already said to be the wealthiest person in Brazil. Because of his oil holdings and interests in a vast number of other businesses, he may well become the richest man in the world. Batista, one of seven children of a high-level government official, got into gold at an early age and eventually controlled mines from Chile to Russia. In addition, he has been

involved in energy, water, and steel companies. Now Batista is betting that Brazil will be a major oil power.

CHARLIE ROSE
Fifteen years from now, what do you want to have achieved?

EIKE BATISTA
We believe that in five years Brazil will be the fifth-largest economy in the world. And we're just one of the many

companies helping Brazil grow. Obviously, the oil discoveries will [bring about enormous changes]. We're talking about 100 billion barrels of recoverable oil.

Your father is a very distinguished Brazilian.

What I learned from my father is to think big. There's a movie called *Brazil's Engineer*, and it's about him because he built part of [the country's infrastructure—railways, super ports to ship iron ore to Asia. But I was educated by my mother because my father was very busy. She was German, from Hamburg, and she taught me discipline and caring for others.

When you look at America, what concerns you, what encourages you? You are now heavily indebted like Brazil was before. You have to be a little bit more Spartan. In the last 20 years you have focused too much on banking and finance. The best students went to banks or law firms. Where are the engineers? Americans should be driving electric cars, and you're not. | BW |

Get Ready to Plug-in!

