



# Maryland Electric Vehicle Station Infrastructure Webcast November 9, 2011

## Today's Webcast:

The presentation will begin at 2:00...

This Webinar will address emerging issues and models for better understanding of this exciting clean transportation development and what it means for EV readiness throughout Maryland.

## Presenter:



Jill Sorensen  
BEVI, Inc.

Baltimore-Washington Electric Vehicle Initiative



## Remember:

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- Q&A will follow the presentations
- To ask a question, click the hand icon or type your question. The moderator will acknowledge you.

**Organizer:** Rebecca Rush

**Moderator:** Rich Maranto

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# **Maryland Electric Vehicle Infrastructure**

**Jill Sorensen**

**BEVI, Inc.**

**For Benefit - Electric Vehicles and Infrastructure**

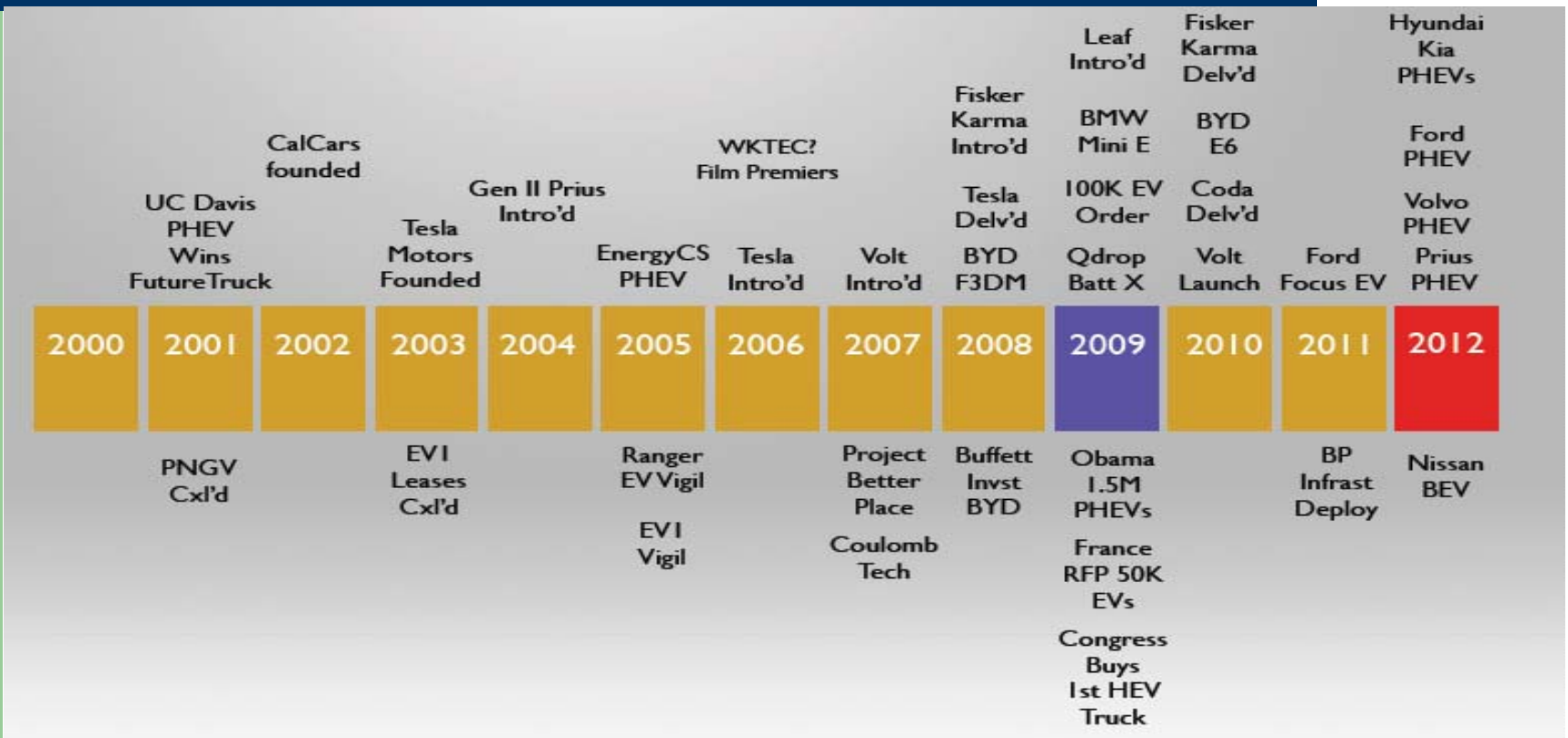
**Maryland Clean Energy Seminar webinar series**

**November 9, 2011**

# The EV Value Proposition

- EVs as clean transportation
- EVs as mobile power management resources
- EVs as carbon credit purchase agreements
- EV charging as grid stabilization (smart grid, microgrid, auxiliary grid)
- Maryland's EV Readiness, working with counties and cities on clean transportation as a matter of economic, environmental and national security

# EV interest and availability is growing



J. William "Bill" Moore • Publisher, Editor in Chief  
[EVWORLD.COM](http://EVWORLD.COM)  
[editor@evworld.com](mailto:editor@evworld.com)

**Pleasure: EVs are sporty, fun to drive, cheaper to re-fuel than gas!**



# Pain – what if we don't find alternative fuels?

- **Coal-burning power plants** are the largest U.S. source of carbon dioxide pollution -- they produce 2.5 billion tons every year.
- **Automobiles**, the second largest source, create nearly 1.5 billion tons of CO2 annually.
- **Built architecture.** 63% of our energy consumption is from HVAC and lighting, 40% of emissions is from built architecture.

(See Natural Resources Defense Council, [www.nrdc.org](http://www.nrdc.org))

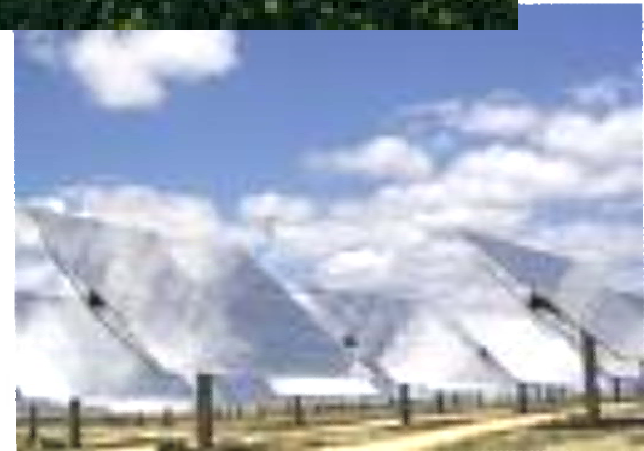


# What are we going to do about it?

- Reduce emissions (burn)
- Reduce energy consumption
- Increase and harness renewable energy
- Mitigate Traffic Congestion
- Fortify the grid
- Assure our energy security and independence



**Zero EMISSION**





# Chevy Volt – available for purchase



- 40-mile battery range gives you zero fuel consumption and zero tailpipe emissions
- About 340 miles total range (battery plus engine generator)
- \$1/day charging at 11 cents/kW hour
- Less than cost of one cup of coffee per day, and fraction of cost of 30 mpg sedan

# Nissan Leaf



[www.nissanusa.com/leaf-electric-car/index](http://www.nissanusa.com/leaf-electric-car/index)

## 2012 In Our EV World

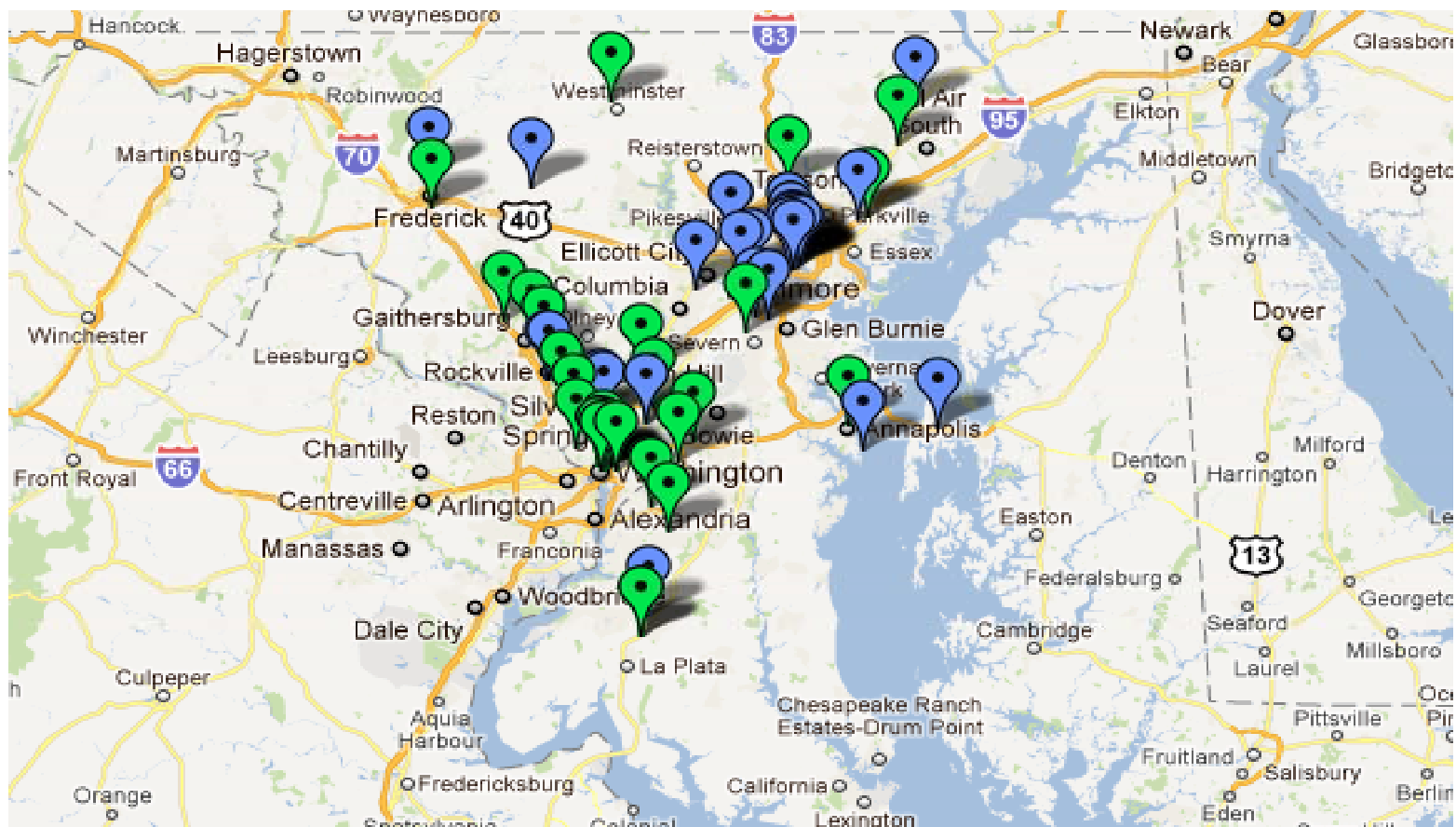


- Nissan launches LEAF consumer sales
- Better Place operational in Israel and Denmark
- Ford introduces Escape PHEV
- Toyota brings out Prius PHEV
- Volvo introduces C-30 PHEV
- Hyundai & Kia roll-out of PHEVs in N.America
- Bright Automotive plans production of IDEA EV.
- Tesla Model S deliveries under way
- GM ups Volt production to 60,000
- Volkswagen ramps up for E-Up! production
- \$39,000 Fisker sedan starts production

# Electric Vehicle Infrastructure Planning: Where to charge?

- 80% of charging is expected to take place at home
- then place of employment, mass transit location to which commuter regularly travels
- then public facilities like shopping malls

## BEVI EVIP Clean Corridors and Clean Cities



## Key EVI developments in Maryland

- EVIC - Creation of Maryland Electric Vehicle Infrastructure Council
- EVIP - electric vehicle public charging infrastructure program
- HOV access, Excise tax credit for EV lease or purchase, EVI tax incentives support
- solar and emerging solar-EV infrastructure development

## CCBC automotive training

- The Community College of Baltimore County (CCBC) is a member of the National Alternative Fuels Training Consortium (NAFTC)
- CCBC supports workforce development and educational programs for Veteran students
- CCBC is a Job Center for Veteran students

# Stakeholders and champions

- U. S. Department of Energy, Clean Cities and ARRA Programs
- Governor's Office, MEA, MDOT, MDE, DBED, MCEC
- BGE and Pepco, coordinating outreach and education with area utilities
- EV ready counties and local governments
- Commercial sector – EV charging equipment and vehicles:  
Semaconnect, Eaton, GE, Coulomb, Ecotality, NRG, AeroVironment,  
GM, Ford, Toyota, Tesla, Coda, Fisker, BMW, Smart ED, TimberRock ES



## Risk

- Cost (vehicle lease versus purchase, charging, electricity, time of day)
- Range anxiety
- Tax grid
- Availability of vehicles

## Benefit

- Reduced or zero emissions, environmental benefit: **clean cities!**
- Fuel expenses reduced; fuel at convenient places (home and work)
- Potential to fortify grid if charging tied to renewable energy, battery back-up
- Range no problem with PHEV and EREV
- National security and energy independence

# Additional Clean Cities Benefits

- Encourage car-sharing, car pooling, biking and walking, alternative fuels, traffic congestion mitigation by developing public transportation alternatives
- Raise awareness of healthy lifestyles and healthy cities
- More urban planning to reduce traffic, convert built architecture to micro-power plants (solar, wind, geothermal), promote energy planning, conservation and management through storage options and smart grid connectivity

# EV Planning Resources

- **Maryland EVIC:**  
[http://www.mdot.maryland.gov/Planning/Electric\\_Vehicle/Index.html](http://www.mdot.maryland.gov/Planning/Electric_Vehicle/Index.html)
- **Maryland Energy Administration Clean Cities:**  
<http://energy.maryland.gov/Transportation/index.html>
- **Rocky Mountain Institute Project Get Ready:**  
<http://projectgetready.com/category/resources>
- **City of Houston:** <http://www.greenhoustontx.gov/ev/pdf/longrangeevplan.pdf>
- **City of Portland:** <http://chargeportland.com/docs/EVs-the-Portland-Way.pdf>
- **City of Toronto:** [http://www.toronto.ca/environment/transportation\\_ev.htm](http://www.toronto.ca/environment/transportation_ev.htm)
- **First Responders and Automotive Training:**  
[http://www.afdc.energy.gov/afdc/vehicles/electric\\_maintenance.html](http://www.afdc.energy.gov/afdc/vehicles/electric_maintenance.html)



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## Question and Answer



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