



**Greater Long Island Clean Cities Coalition**  
*Advancing the Choice*

***Long Island Power Authority***  
***Operating for a Cleaner Environment***



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**Chief Operating Officer**  
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[www.lipower.org](http://www.lipower.org)



# LIPA's Mission, Vision, and Values

## Our Mission

*Our mission is to provide highly reliable and economical electric service through our valued workforce with a commitment to superior customer service, accountability and transparency in all of our operations, while being recognized as a leader in the advancement of efficiency and renewable energy.*

## Our Vision

The Long Island Power Authority strives to be:

- The most reliable overhead electric utility in the state
- The industry leader in the advancement of energy efficiency and renewable energy
- A responsible steward of the environment
- A catalyst for economic development in the region
- Focused on superior customer service
- The best managed electric utility in the state

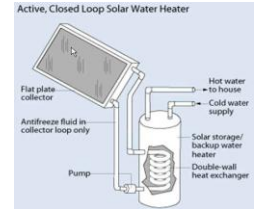
## Our Values



# LIPA's Renewable Energy Programs



- ▶ **Solar Pioneer Program** (up to 10kw)
  - \* over 4,500 residences and businesses
- ▶ **Solar Hot Water Program**
  - Leverage existing solar infrastructure for electric hot-water customers.
- ▶ **Solar Entrepreneur Program** (up to 50kw)
- ▶ **Long Island Unified Solar Code**
  - Island-Wide Collaborative Effort to streamline & standardize permitting for installation of residential solar electric & solar hot water systems
- ▶ **Utility-Scale Solar Projects**
  - 32MW at Brookhaven National Laboratory
  - Up to 17MW at Suffolk County Properties
- ▶ **Backyard Wind Program**
- ▶ **LI-NYC Offshore Wind Project**
  - LIPA, Con Edison, & NYPA



## ■ Energy Efficient Products



- ▶ Continue incentives and increase specialty **compact fluorescent light bulbs** (CFLs)
- ▶ Continue lighting **Invitation to Participate** for new retailers including grocery and drug stores as well as discount department stores
- ▶ Incentivize **LED fixtures**, which are coming down in cost faster than anticipated
- ▶ Continue new **refrigerator rebates** of \$75.00 and the highly successful **Refrigerator Recycling Program**
- ▶ **ENERGY STAR TV's** are being promoted through a mid-stream incentive to the retailer
- ▶ Rebates for energy efficient **pool pumps** continue; \$75 rebate for two-speed pumps and \$200 rebate for Variable-speed pumps, as well as installer incentives of \$75 for two-speed and \$100 for variable-speed pumps
- ▶ **Home Electricity Comparison Report** pilot program - provide neighbor electric use comparisons to influence customer usage behavior

# LIPA's Commercial Energy Efficiency Program is Smart for Business



## ■ Commercial Efficiency Program

- ▶ LIPA will continue to increase the focus on Retrofitting energy efficiency into existing commercial buildings through enhanced screening tools and incentives
- ▶ The **Solution Provider** will provide sales and outreach services to LIPA's largest customers and be responsible for ~44% of the Commercial program energy savings
- ▶ The **Small Business Direct Install** contractor will provide free assessments, low-cost to no-cost installation services based on the assessment, and provide equipment removal and recycling at the end of the installation service to one of LIPA's most challenging customer classes
- ▶ We have enhanced marketing efforts and continue to offer **Energy Efficiency Seminars** in an effort to increase the number of commercial customers that participate in the Commercial Efficiency Program

# LIPA Working with Partners to Prepare for Alternative-Fueled Vehicles on LI



## ■ Alternate Fueled Vehicle Groups

- ▶ EVAA, EDTA
- ▶ GLICCC
- ▶ EPRI

## ■ Electric Vehicle Task Force

- ▶ Establishment of a task force to assure that LIPA continues to provide reliable service while enabling electric vehicle technology

## ■ Industry Groups

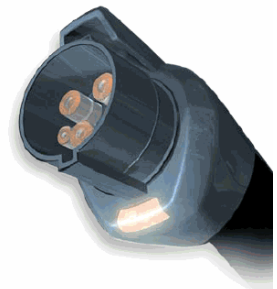
- ▶ Promulgate standards for charging and communications
- ▶ Encourage vehicle manufacturers to move towards plug-in and battery electric vehicles wherever possible

## ■ System Studies

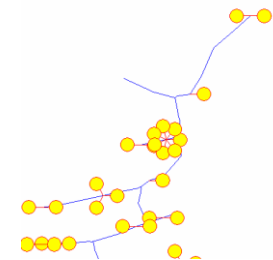
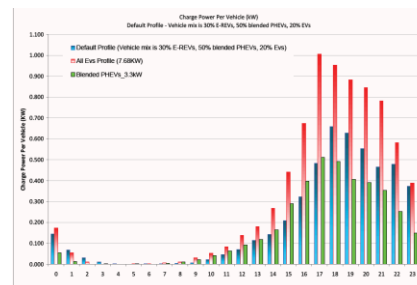
- ▶ Determine adoption rates and patterns
- ▶ Investigate effects on electric system infrastructure



Type	AC	DC
Level 1	120 VAC ≤ 12 amps, 16 amps ≤ 1.44 kW, 1.92 kW	200 – 450 VDC* ≤ 80 amps ≤ 19.2 kW
Level 2	208 - 240 VAC, 1Φ ≤ 80 amps ≤ 19.2 kW	200 – 450 VDC* ≤ 200 amps ≤ 90 kW
Level 3	TBD* assumed ≥ 19.2 kW 1Φ or 3Φ	200 – 600 VDC* ≤ 400 amps? ≤ 240 kW?



Source – Gery Kissel, SAE



# LIPA's PEV/PHEV Initiatives



## ■ Electric Vehicles

- ▶ Light Duty Fleet Vehicles
- ▶ Green Parks
- ▶ GEM
- ▶ THINK
- ▶ Upcoming (Leaf, Focus)



## ■ Hybrid Program

- ▶ Fleet Evaluation
- ▶ Hybrid Bucket Truck



## ■ PHEV Program

- ▶ PHEV Bus
- ▶ PHEV Bucket Truck
- ▶ PHEV Light Duty Evaluation

## ■ Infrastructure

- ▶ High Power Charging
- ▶ Solar Carport
- ▶ Charging Station Evaluation



# “Greening LIPA’s Fleet”

\* Reflects 2010 annual numbers

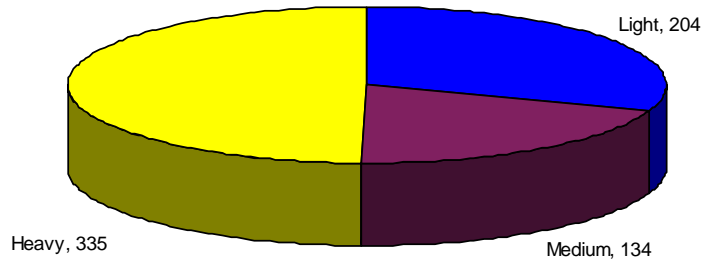
- **Electric/Plug-In Electric Vehicles**
  - ▶ As new vehicles are introduced, they are evaluated for inclusion in the fleet
- **Gasoline Hybrid**
  - ▶ Currently 38% of the fleet’s light duty vehicles
- **Bio-Diesel**
  - ▶ B20 used in all diesel vehicles in the fleet
  - ▶ 328 vehicles (primarily heavy duty) have used 476,000 gallons and travelled 2.2 million miles
- **CNG / Dual Fuel (CNG/Gasoline)**
  - ▶ 51 vehicles (primarily light and medium duty) have used 7,924 equivalent gallons – CNG; 14,022 gallons – gasoline; and, travelled 278,589 miles
- **Medium / Heavy Duty Hybrids**
  - ▶ Hybrid Bus – daily runs at SUNY @ Stony Brook
  - ▶ Recently added 2 hybrid bucket trucks to the fleet that are averaging about 25% more fuel efficient and achieving 12% emissions savings from “battery” work mode



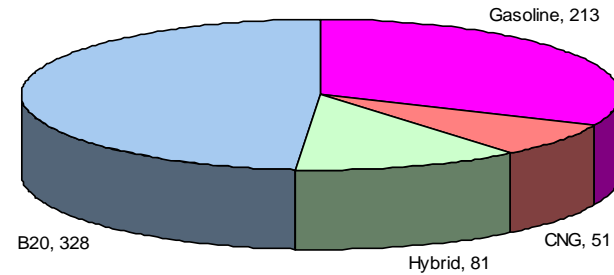
# “Greening” LIPA’s Fleet (continued)



Fleet Size (Mix)

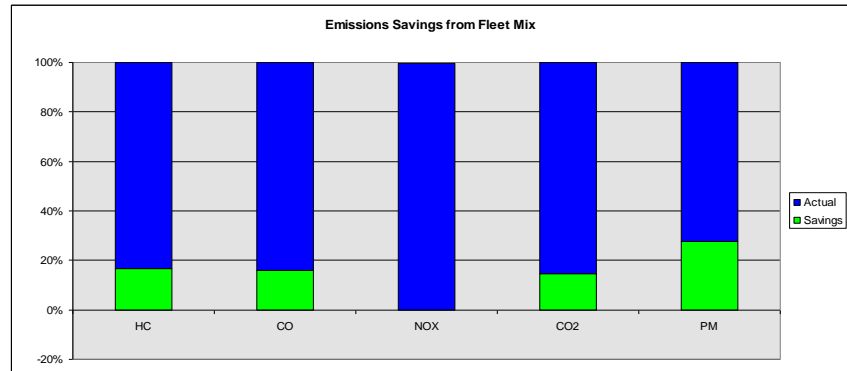


Fuel Mix



- Emissions Savings
  - ▶ HC - 683 kg (17%)
  - ▶ CO - 5,872 kg (16%)
  - ▶ NOX - -40 kg (-.2%)
  - ▶ CO2 - 1,093,674 kg (15%)
  - ▶ PM - 176 kg (28%)

Compared to the same fleet mix without the use of B20, hybrids, CNG



# LIPA's Plug-in Electric Vehicle Rebate Program



## ■ One-time \$500 Rebate for Qualifying Vehicles

- ▶ Plug-In Hybrid Electric Vehicles (PHEV) – Chevy Volt
- ▶ Plug-In Electric Vehicles (PEV) – Nissan Leaf
- ▶ 14 Vehicles Rebated to date

## ■ Benefits of owning an electric vehicle?

- ▶ Cut down greenhouse gas emissions
- ▶ Reduces dependence on foreign oil
- ▶ Costs less to run an electric vehicle
- ▶ PHEV can achieve up to double the gasoline fuel economy (miles per gallon) of a Hybrid Electric Vehicle (HEV) (i.e., Toyota Prius, Honda Civic Hybrid, etc.)
- ▶ Some PHEVs deliver more than 100 mpg under moderate driving conditions and driving styles



**Plug-in Electric Vehicles**  
**REBATE PROGRAM »**

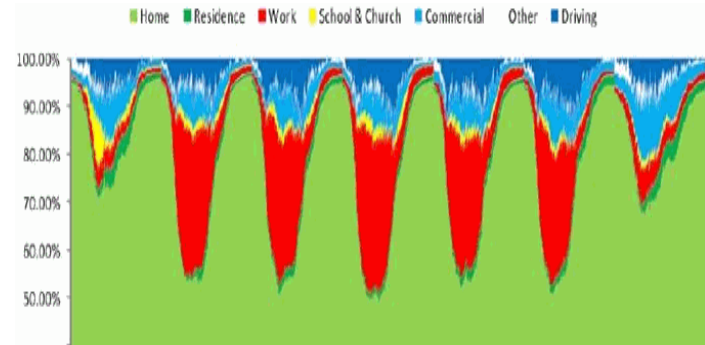


# Electric Vehicles – Getting Ready!



## ■ Charging Expectation

- ▶ Light green at home, Red at work →
- ▶ At any time, at least 50% of cars are home, with most there at end of the day
- ▶ During peak hours, 12% are arriving home and can be expected to begin charging



## ■ Clustering

- ▶ Distribution of vehicles will not be homogenous, but will appear in clusters
- ▶ Depending on local load, individual transformers can be overloaded
- ▶ Charging management/strategy must be adopted



## ■ Moving Forward

- ▶ Reinforce Infrastructure as needed
- ▶ Alternative – Time-of-Use -- charging rates to encourage off-peak charging

# A Smarter “Smart Grid” System



## ■ Philosophy

- ▶ Allow customer greater insight into their energy usage
- ▶ Greater visibility of the load and flow in the system for increased reliability

## ■ Technology

- ▶ Millions of meters and switches that can communicate back to the utility
- ▶ A communications system(s) capable of carrying the vast amount of information required in a reliable and secure manner
- ▶ Software and systems to process and visualize system conditions



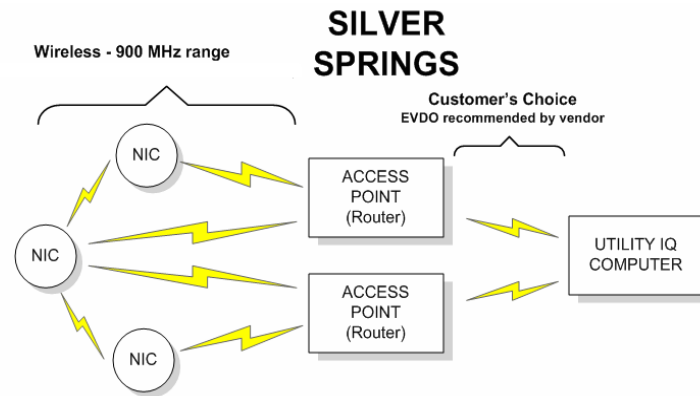
# “Smart Grid” Deployments



- **Smart Meter Pilots** - As part of Congressional Demonstration Project, which was obtained by Congressman Steve Israel, LIPA has deployed 2 - 900 MHz Spread Spectrum Mesh Technologies on Long Island.

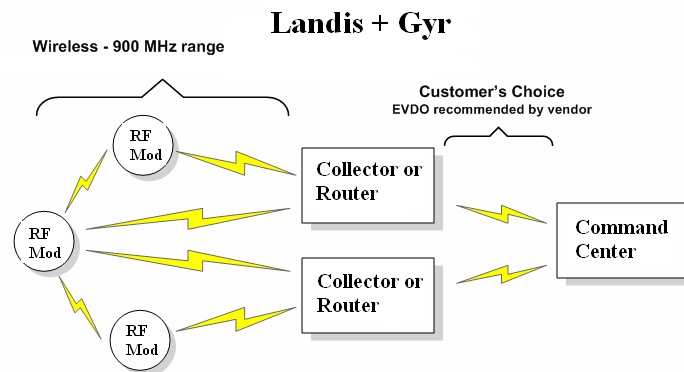
- ▶ **Silver Springs (Bethpage, New York)**

- \* 48 Residential GE I210 Meters
- \* 95 Commercial GE KV2C Meters



- ▶ **Landis + Gyr (Hauppauge, New York)**

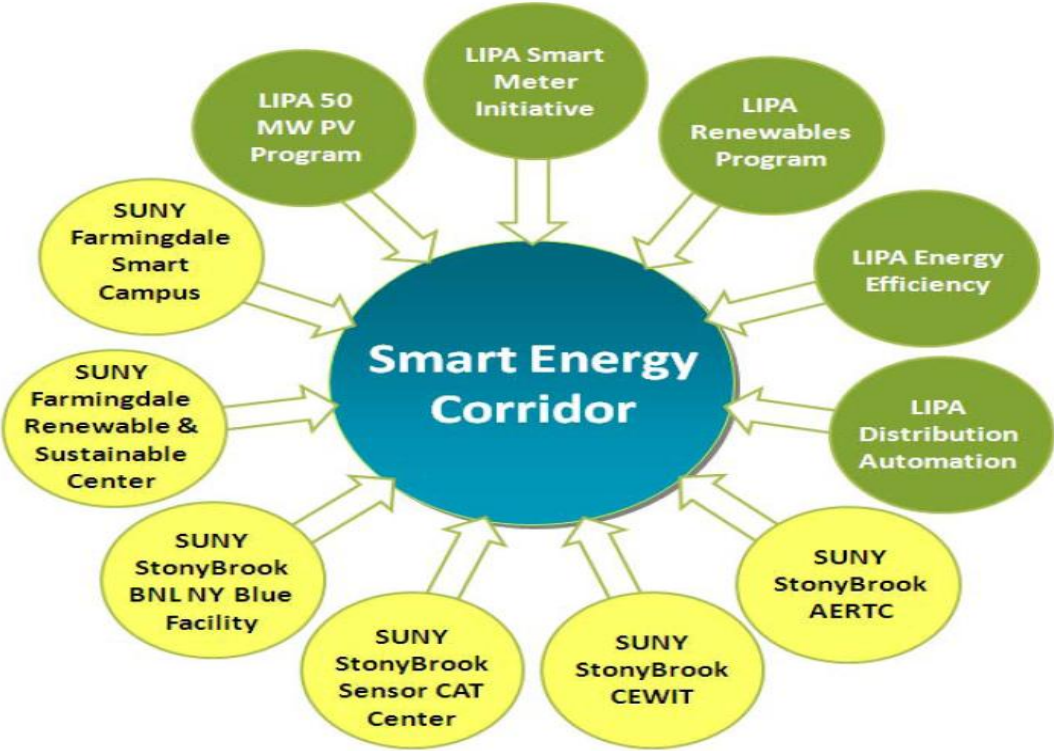
- \* 53 Residential L+G Focus Meters
- \* 109 Commercial L+G S4 Meters



# Smart Grid Demonstration Project



**Smart Grid Corridor Project** (Route 110) - The Long Island Power Authority ("LIPA") has teamed with Stony Brook University ("Stony Brook") and Farmingdale State College ("Farmingdale"), two branches of the State University of New York ("SUNY"), to create a "Smart Energy Corridor."



# Smart Grid Demonstration Project (continued)

## Smart Grid Corridor Project (Route 110) - The Long Island Power Authority "Smart Energy Corridor."

**OMS/DMS Pilot**

**Distribution Automation**

**AMI Technology**

