



What's Happening in the Northeast

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Overview

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2. How does LIPA meet Customer Needs
3. Clean Energy Initiative Results
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Who is LIPA?

LIPA, a ***non-profit municipal electric utility***, owns the retail electric Transmission and Distribution System on Long Island and provides electric service to more than ***1.1 million customers*** in Nassau and Suffolk counties and the Rockaway Peninsula in Queens. LIPA is the ***3rd largest municipal electric utility in the nation in terms of customers served*** and the ***6th largest in terms of electricity delivered***. In 2006, ***LIPA outperformed all other overhead electric utilities in New York State in all three major reliability categories***. LIPA does not provide natural gas service or own any on-island generating assets. Intergraded approach use of Efficiency, Conservation and Renewable Technologies



How does LIPA meet Customer Needs?

1. Intergraded approach use of Efficiency, Conservation and Renewable Technologies
2. Diverse Customer Base C/I, Resi, muni, ect...
3. Market Transformation efforts
4. Working relationship with Stakeholders
5. Facilitate the creation of infrastructure



What is the Clean Energy Initiative?

Currently, the CEI is a 10-year, \$355 million dollar commitment through 2008 to promote energy efficiency and the use of clean new electric generation technologies. The Initiative has several policy objectives among which are to:

1. Further customers' ability to control their energy bills
2. Provide a stimulus to the local economy
3. Defer or reduce capacity needs
4. Reduce power plant emissions
5. Contribute to a sustainable energy future



CEI Performance
1999-December 31st, 2006

How has the CEI Performed?

Total Cumulative Energy Saved since inception: ~1,811GWh

Where we've come from:

In Year 1 we were able to provide savings that were equivalent to powering ~720 homes. Near the end of 2006 that number has grown to well over 48,000 homes per year!

Total Capacity Savings: ~175MW (including LIPAge)

By fostering energy conservation and efficient energy use to reduce the amount of electricity consumed by LIPA customers:

The equivalent of over *2.92 million barrels of oil* or *18.13 million decatherms of natural gas* **were NOT burned to produce electricity**



CEI Performance
1999-December 31st 2006

Emissions Avoided:

5,290 tons of sulfur dioxide

1,677 tons of nitrogen oxides

1.20 Million tons of carbon dioxide

Were NOT released into the air

Additionally, acting as an economic stimulus, it's estimated that the CEI has led to the creation of over 6,230 secondary jobs on Long Island, as well as **saving customers over \$375 million** through rebates and lower electric bills (As of year end 2006)



How has the CEI become one of the Top Rated Energy Efficiency Programs in the Nation?

Initiating a multi-pronged approach to Transform Energy Efficiency on Long Island:

1. Established close and lasting relationships with local trade organizations like the **International Brotherhood of Electrical Workers Local 25 (IBEW25)**, **Long Island Builders Institute (LIBI)**, the **Hauppauge Industrial Association (HIA)**, in addition to nearly **30 other** local and national energy focused consortiums and organizations.
2. LIPA CEI employees serve on several **National and Local Board of Directors** seats for organizations such as the **Consortium for Energy Efficiency (CEE)**, the **Northeast Energy Efficiency Partnership (NEEP)**, the **United States Green Building Council (USGBC)**, **Solar Electric Power Association (SEPA)**, **Greater Long Island Clean Cities Coalition (GLICC)**.
3. The LIPA CEI team has ensured that **Local Civic and Environmental groups are kept abreast on emerging energy issues** and provide a channel for them to provide meaningful input.



Accolades and Accomplishments

- CEI on forefront of innovative program design
- EPA Awards and recognition
- Influence on regional and national energy policy.



What are the Program Offerings?

- Residential Programs
 - Lighting & Appliances
 - Energy Star ®
 - Cool Homes HVAC
 - REAP – Low Income
 - Asst. Home Performance
 - Information & Education
 - NY ENERGY STAR Labeled Homes
 - NY ENERGY STAR Home Performance
 - Solar Pioneer
- Non-Residential Programs
 - Commercial Construction
- Multi-Sector Programs
 - Customer-Driven Efficiency
 - LIPAedge (Direct Load Control)
 - RECAP 75MW Retrofit
- Research Development & Demonstration



How are these Programs Delivered?

- Provide rebates that deliver cost competitive energy savings
- Engage the market actors to encourage high levels of participation
 - Work with local distributors
 - Meet with local Architects and Engineers
 - Inform customers as to the services offered
- Provide the resources to train and motivate a modern work force
 - Full Cost/Subsidized training courses
 - Workshops and Conferences designed to educate
 - Coordinate project activities with LIPA experts



Renewable Energy Programs

Solar Pioneer Program

What we Do:

Incentive rebates to customers to put PV on their homes and Businesses

How we do it:

- Rebate \$3.75 per watt up to 10 Kilowatts/ an additional \$1 for Schools, non-profits and municipalities
- Net metering is offered to residential customers to allow them sell electricity back to the grid

Technology impacted:

- Peak coincident benefits
- Distributed Generation of Solar Electric (Photo Voltaic) Panels
- Invertors
- Interconnection Devices
- Over 1000 homes and businesses.





CEI Research Development & Demonstration **Preformed (through 2006)**

Renewable Technologies

Includes- fuel cells, wind, solar PV, geothermal, wave power, alternate fueled vehicles & other emerging technologies

Summary- National leadership in (Distributed Generation)

DOE/DOT- recognition, co-funding & interest

Fuel Cells – 166 installations; 830 kw

Wind –5 sites totaling 170kw

PV – 4 sites, >1 MW

Geothermal – new design; 2 test sites, 1 operating

Alternate Fueled Vehicles-electric and hybrid 112

Cumulative Energy Generated 7,794 MW-hrs

Cumulative Emissions Savings

38,563 lbs of SO₂;

11,738 lbs of NO_x;

5,267,015 lbs of CO₂

Equivalent to 10.7 million car miles

Equivalent to 12,538 bbls of oil or 77,945 decatherms of gas



R&D Wind land-based demonstration program

- **Success and lessons learned**
 - Local zoning approval is time consuming
 - Large vs. small turbine manufacturer financial & warranty issues
 - Good public acceptance of LIPA's wind demonstrations
- **Barriers to Implementation**
 - Zoning Variances (>30 ft) and Permitting Process
 - Critical Siting Issues
 - Environmental
 - Cost
 - Competing Land Use
- **Future efforts**
 - Install additional land-based wind turbines (100 KW)
 - Low Wind Speed Turbine Technology Program (LWST) DOE/AWS lower cost barrier
 - Anemometer loan program for siting studies
 - Support NYS Wind Tariff
 - Web-Based Wind Tools



R&D – Geothermal (GeoColumn)

Overview

- Innovative design and small foot print address major market barrier- installation cost
- Installed, beta-tested, and removed at Hofstra
- Installed and tested at Nassau County Sands Point Preserve

Objective & Strategy:

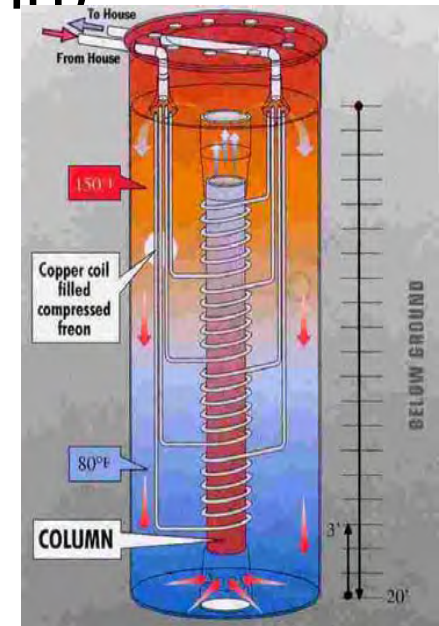
- Determine summer & winter performance
- Assess material and installation costs
- Commercialization potential

Successes & Lessons Learned:

- Performance reliability
- Need site specific data for benchmark performance
- Containment design issues (leakage)
- Discussions/Meetings on commercialization plans

Future Efforts:

- Licensing; finalize commercial agreement
- Technology Transfer (RD&D/Marketing)
- Manufacturer rebate for LIPA customers
- Goal that this cost effective technology “sells itself”



Tidal Power

- Long Island has many suitable locations and sites where tidal energy could be viable
- GCK-Gorlov Helical Turbine demonstration
- Commercial reliability
- Multi-directional turbine
- Environmentally sensitive low wellhead
- Mixed results, about half of its rated power

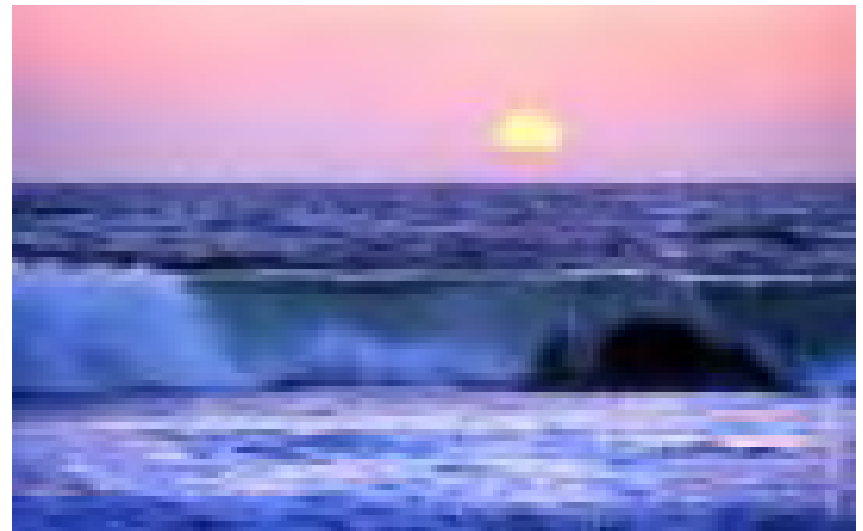




Wave Energy

Wave Power study conducted by Giannoti Associates

- In favorable locations around the world, wave energy density can average 65MW per/mile
- Long Island wave energy density is estimated at around 20MW/mile
- Environmental sensitivity
- Competing resource uses





Hybrid Bus

- Load profile modifier
- Helps to meet the needs for the National Initiative for Plug in Hybrid Electric Vehicles (PHEV)
- Public desire to offset emissions from the transportation sector
- LIPA's desire to transform the PHEV market





Current NYS Energy Policy and Initiatives

- **PSC Energy Efficiency Portfolio Standard Proceeding 15/15**
 - 15 % Reduction of forecasted energy use by 2015 statewide
- **NYS Renewable Portfolio Standard**
 - 25% of NY State total generation to be from renewable resources
 - Lt Gov's Renewable Portfolio Standard Task Force – revisiting goals
- **Executive Order 111-** all NYS facilities/Bldg's to be energy efficient
 - Advisory Council reviewing progress to date and developing plans for future compliance and interagency coordination
- Overall, coordination of all these efforts should result in a holistic approach to comprehensive and cost effective impacts for New York ratepayers



LIPA Future Efforts and Initiatives

- **ELI- Efficiency Long Island**
 - Worked on for 27 months
 - Will support 15/15 Goals
 - Makes sense on just a pure resource basis
 - Awaiting Board action in several months
- **Leverage the success of CEI initiative program**
 - Program contraction –new/existing resi & C/I and efficient products
 - No more siloing- all opportunities addressed
 - Depth and comprehensiveness of savings substantially increased

Conclusion

All these pieces of the Clean Energy Initiative programs put together into ELI = Efficiency & savings

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