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# **Energy Efficiency on Cape Cod and Martha's Vineyard**

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## **Cape Light Compact Energy Efficiency Plan: 2007-2012**

**Public Informational Update**

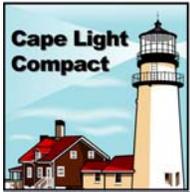
**February 1, 2007**

**6:30 P.M. – 7:30 P.M.**

**Barnstable County Superior Courthouse**

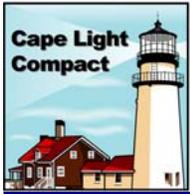
**Meeting Rooms 11 & 12**

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# Meeting Agenda

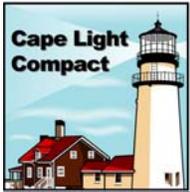
- About the Cape Light Compact
- Energy Efficiency Programs in Massachusetts
- State of Electricity Use on the Cape and Vineyard
- Cape Light Compact Energy Efficiency Programs
  - Historical Perspective (2001 – 2006)
- Proposed Energy Efficiency Plan 2007 – 2012
- Comments, Questions and Answers



## Background on the Cape Light Compact

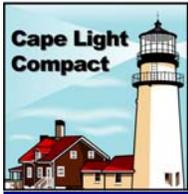
- Formed in 1997 to advance the interests of consumers in the newly restructured electric industry.
- Includes all towns on Cape Cod and Martha's Vineyard.
- Compact Governing Board made up of officials of all towns.
- Power supply:
  - Default service power supply commenced May, 2002.
  - All customers on competitive supply as of March 1, 2005.
  - Opt-in Cape Light Compact Green<sup>(SM)</sup>
- Consumer Advocacy.
- Energy Efficiency.





# Energy Efficiency in Massachusetts

- Since the 1980s, electric utilities in Massachusetts have implemented energy efficiency programs in their territories.
- Massachusetts Electricity Restructuring Act established a fixed charge on all ratepayers to collect funds for energy efficiency.
- The Restructuring Act also enabled towns and cities to establish municipal aggregators, who could:
  - Purchase power on behalf of all customers in the municipality.
  - Implement the energy efficiency programs instead of the local electric utility.
  - Administer rate-payer funded energy conservation surcharge



# Sample Electric Bill

**Account Number**  
1397 338 8010

**Billing Date**  
Jan 8, 2004

**Next Read Date**  
Feb 4, 2004

**Service Provided to**

E ORLEANS MA 02643

## Account Summary

Previous Bill	90.06
Payment - Thank You	-90.06
Total Cost Electricity	99.03
<b>Amount Due</b>	<b>\$99.03</b>

## Electricity Used

Rate 32-Residential Nonheat - Annual  
Meter 7047605  
Jan 06, 2004 Actual Read 15215  
Dec 04, 2003 Actual Read - 14544  
33 Day Billed Use 671

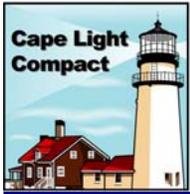
## Cost of Electricity

Delivery Services (PRORATED)			
Customer Charge			3.73
Distribution	.04524 X	671 KWH	30.36
Transition	.02652 X	671 KWH	17.80
Transmission	.00564 X	671 KWH	3.79
Renewable Energy	.00050 X	671 KWH	0.34
Energy Conservation	.00250 X	671 KWH	1.68
<b>Delivery Services Total</b>			<b>57.70</b>

<b>Supplier Services</b>			
Generation Charge			
Standard Offer Svc	.06159 X	671 KWH	41.33

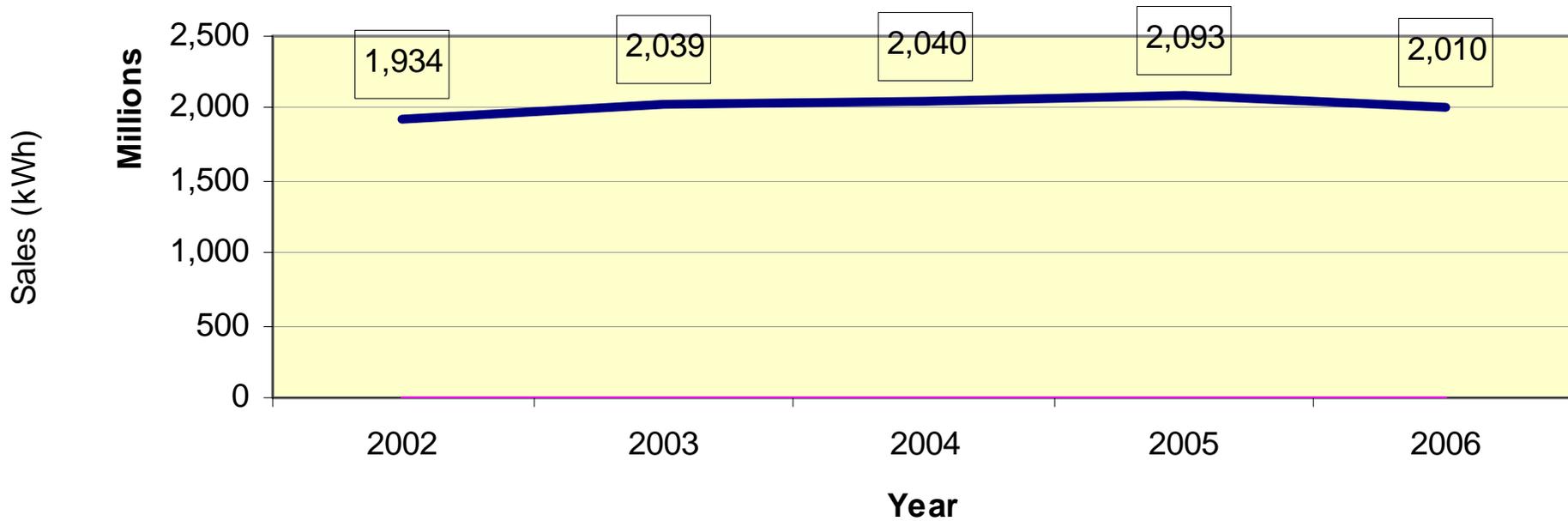
7047605	KWH
12/04	608
11/03	565
10/02	809
09/03	1023
08/04	629
07/07	650
06/04	516

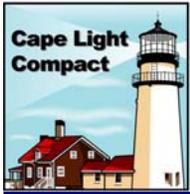
*Ratepayer  
funding of Cape  
Light Compact  
Energy Efficiency*



# State of Electricity Use on Cape & Vineyard

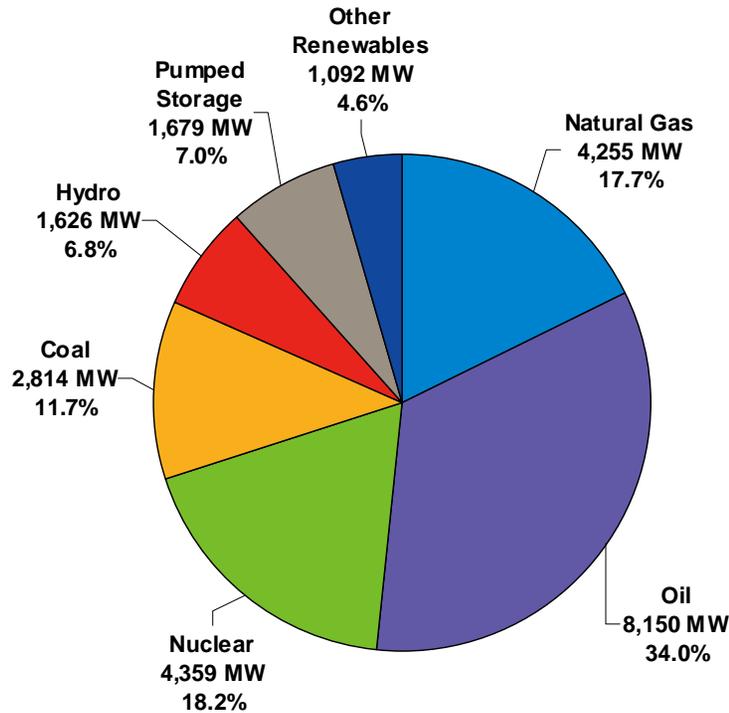
## Cape & Vineyard Total Annual Electricity Sales Comparison





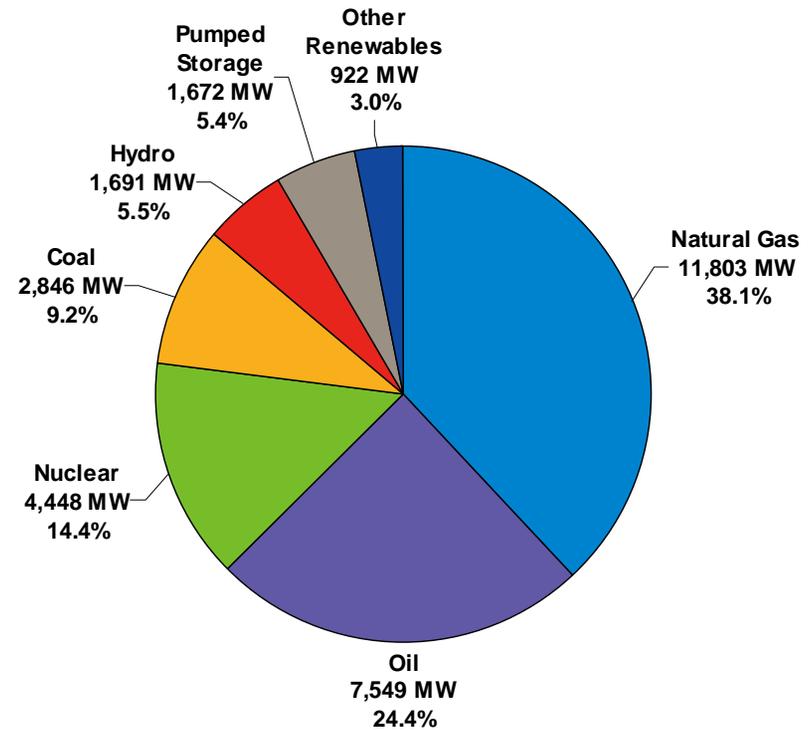
# New England's Generation Mix: More Than 60% Natural Gas and Oil

## Summer 2000



Total: 23,975 MW

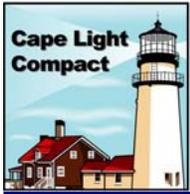
## Summer 2006



Total: 30,931 MW

Note: Units in the "Other Renewables" category include those fueled by biomass, refuse, and wind.

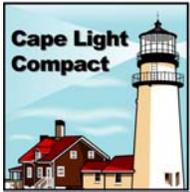
Source: ISO-NE MA Roundtable 2006



# Energy Conservation Goals

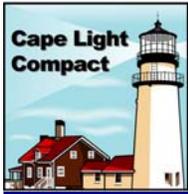
- ✓ Reduce Usage
- ✓ Save Money
- ✓ Help Environment





# Compact Efficiency Plan: Phase I

- The Compact prepared its first Energy Efficiency Plan in 2000, and began implementing programs on the Cape and Vineyard in July 2001.
- During the first 18 months the Compact programs have:
  - Served 13,394 customers.
  - Saved 7,900 MWh of energy.
  - Increased the efficiency of 134 newly built homes.
- In October 2002, the Compact held an Energy Fair:
  - Sold 968 efficient lamps and fixtures.
  - Sold 200 efficient torchieres.
  - Turn-in and sold 300 efficient dehumidifiers.
  - Saved roughly 169 MWh per year of energy.



# Compact Efficiency Plan Results for 2006

- The Compact is now implementing its Phase III Efficiency Plan
- Annual budget of rate-payer funds in excess of \$5 million
- High Annual Participation rates (Preliminary 2006 Results):
  - Served over 9,550 customers
  - Over 18,500 MWh of energy saved
  - Equivalent to supply needs of over 2,500 homes (avg 7200 kWh/yr)
  - 4 Energy Fairs held on Martha's Vineyard and Cape Cod in 2006
  - Second Annual CFL School Fundraiser
  - LED Holiday Light Fundraiser Pilot Project
  - Continue to expand and innovate (website, renewables)
  - Customer referrals is highest method of program promotion

**School Holiday Lights Fundraiser**

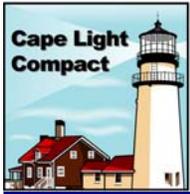
**THANK YOU!**  
Your purchase will help your local school group AND help you save energy. These festive Light Emitting Diode (LED) holiday lights use only **1/1000th** the electricity of standard C8 holiday lights. 24' strands with 70 bulbs draw only 3.4 watts – versus up to 350 watts for a comparable string of standard holiday lights. They are suitable for indoor or outdoor use and are cool to the touch and safe to use.

**What is a Light Emitting Diode (LED)?**  
A light emitting diode, or LED, is an example of solid state lighting that uses semiconductor technology to change electricity into visible light. LEDs last longer and use tiny amounts of energy.

**PRICING**  
Multi-Color C8 Candle Bulbs \$11.00  
White C8 Candle Bulbs \$15.00

If you have any questions or comments about this fundraiser, please call Cape Light Compact at 905-375-6648.

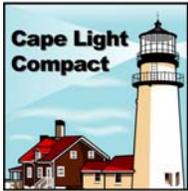
This fundraiser is sponsored by Cape Light Compact, your energy efficiency service provider.



# Compact Efficiency Plan: 2007 - 2012

## Program Budgets

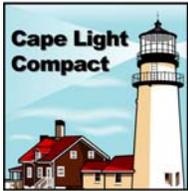
- The Plan has a budget of over five million dollars per year.
- The budgets are allocated to customer sector based on the amount of funds contributed from electricity sales (kWh):
  - Low-Income: \$0.7 million
  - Residential: \$2.1 million
  - Commercial: \$2.3 million
  - Total: \$5.1 million (approximately)
- Many of the key budgets are allocated to each town, based on the amount of funds contributed by each town.



# Compact Efficiency Plan: 2007 – 2012

## Program Cost Effectiveness (Annually)

BCR Activity	TRC Benefit/ Cost	TRC Net Benefits	Total Benefits (\$000)	Total Costs (\$000)	PA Costs (\$000)
<b>Residential</b>					
A02a Residential Lost Opportunity	1.57	\$680	\$1,881	\$1,201	\$338
A03a Residential Retrofit 1-4	2.08	\$1,564	\$3,007	\$1,443	\$1,079
A04a Residential Lighting	7.40	\$3,071	\$3,551	\$480	\$364
A04b Residential Appliances	2.96	\$2,007	\$3,033	\$1,026	\$347
<b>Subtotal: Residential</b>	<b>2.76</b>	<b>\$7,322</b>	<b>\$11,472</b>	<b>\$4,150</b>	<b>\$2,129</b>
<b>Low Income</b>					
B03a Low-Income Retrofit 1-4	3.26	\$1,318	\$1,902	\$584	\$584
B03b Low-Income Retrofit Multifamily	3.66	\$173	\$238	\$65	\$65
<b>Subtotal: Low Income</b>	<b>3.30</b>	<b>\$1,491</b>	<b>\$2,140</b>	<b>\$649</b>	<b>\$649</b>
<b>Com/Ind</b>					
C02a C&I Lost Opportunity	1.99	\$218	\$438	\$220	\$180
C03a Large C&I Retrofit	2.82	\$1,010	\$1,565	\$555	\$481
C03b Small C&I Retrofit	2.86	\$3,378	\$5,194	\$1,816	\$1,594
<b>Subtotal: C&amp;I</b>	<b>2.78</b>	<b>\$4,607</b>	<b>\$7,197</b>	<b>\$2,591</b>	<b>\$2,254</b>
<b>Grand Total</b>	<b>2.82</b>	<b>\$13,419</b>	<b>\$20,809</b>	<b>\$7,390</b>	<b>\$5,032</b>

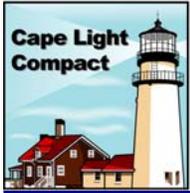


# Compact Efficiency Plan: 2007 – 2012

## What's New

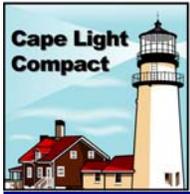
- Residential New Homes Program:
  - Newly designed, new vendor, enhanced rebates
  - \$1.5 million MTC grant for Green Affordable Homes
- Residential RCS/MassSAVE Home Energy Audit Program:
  - “75% pilot” to provide higher incentives to increase implementation
  - Adding central air conditioning or heat pump tune-up
- Low Income Programs:
  - 90% of funding to single family customers, coordination with LIHEAP
  - New construction delivered through common vendor with appliance package for low income occupants
- Commercial & Industrial Programs:
  - Small C&I “CFL pilot” and “Vending Miser Blitz”
  - Sponsor Advanced Buildings offered by New Buildings Institute
  - Coordinate and cost-share with KeySpan Energy Delivery
  - Joined UMass Amherst-Massachusetts Energy Efficiency Partnership





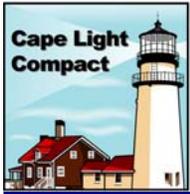
# Residential RCS/MassSAVE Program

- Customers receive an in-home energy audit, tiered based on level of interest (from walk-thru to comprehensive).
- Auditor provides a report on home energy use and efficiency opportunities.
- Low-cost efficiency measures are installed for free: light bulbs, water heater measures, pipe wrap, & weatherization.
- Refrigerators may be eligible for rebates of \$150, depending upon size, age and efficiency.
- Thermal measures, such as insulation, are eligible for a rebates of 50% - 75% of the cost, including installation costs.
- Customers with electric space heating may be eligible for an special rebate of \$3,000 to replace the heating system with an efficient alternative.



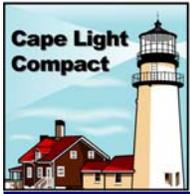
# Diagnostics – Blower Door Testing





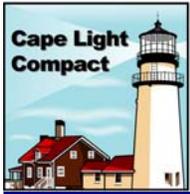
# Air Sealing





# Insulation

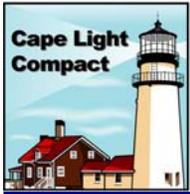




# Residential Products and Services Program

- No energy audit required.
- Energy Star® Lights Catalog
- Retailer Promotions
- Rebates for efficient equipment are available at the time of purchase:
  - Compact fluorescent light bulbs: \$2 rebate.
  - Efficient light fixtures: \$10-\$15 rebate.
  - Efficient torchieres: \$20 rebate.
  - Efficient clotheswashers: \$75 rebates on select models.
  - Other promotional efforts with retailers and manufacturers.

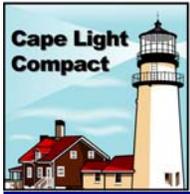




# Residential New Construction Program

- Seeks to improve the efficiency of homes at the time of construction or renovation ( [www.energystarhomes.com](http://www.energystarhomes.com) )
- Promotes the US EPA Energy Star Homes Program.
- Works with builders, architects and home buyers to introduce efficiency at early stages of home design.
- Provides a technical assistance and verification services to help homes qualify for the Energy Star Homes label.
- Also offers rebates:
  - \$250 - \$750 for building performance (CodePLUS or HERS Rating).
  - Additional Appliance Upgrade Incentive for Low Income occupied-homes
  - FREE HVAC commissioning services.
  - FREE code compliance documentation.
  - FREE CFL bulbs in all sockets.

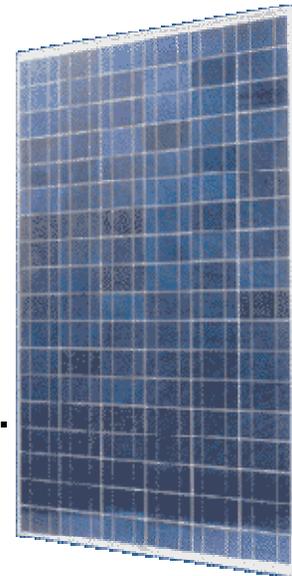


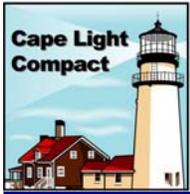


# Green Affordable Homes Program



- Built on lessons learned from 2003-2004 RNC Demonstration Project and grant from MTC.
- Seeks to promote homes that are not only super-efficient, but also environmentally sensitive, i.e., “green” homes, LEED-H scorecard.
- Uses a state-of-the-art rating system to identify and provide points for efficient and environmental improvements.
- Provides a tiered incentive structure to encourage higher efficiency.
- Building performance rebates as high as \$19,000 per unit.
- Renewable Energy Systems rebated up to \$20,000 per unit.
- Program launch for developers set for February 27, 2007.

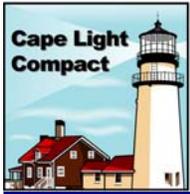




## Low-Income Programs

- Delivered through local community action agency.
- Cover the full cost of efficiency measures – customers do not have to contribute to costs.
- Address all cost-effective efficiency applications in a home.
- Integrated with other LI weatherization programs.
- Priority focus on programs for two key sectors:
  - Single-family homes/customers.
  - Multi-family homes.

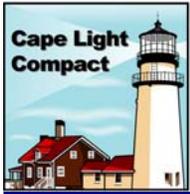




## Commercial and Industrial Programs

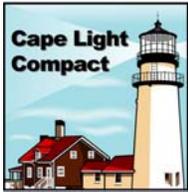
- Separate programs for key sectors:
  - New construction.
  - Small C&I customers.
  - Large C&I customers.
  - Government agencies.
- Programs provide audit or detailed technical assessment of the efficiency opportunities for each business.
- Programs offer financial incentives so as to reduce the payback period for efficiency improvements to 1-2 years.
- Government Agencies Program will pay for 100% of costs (capped at \$75,000 per project per year).
- The Compact has implemented a cost-share of site assessments to include KeySpan Energy Delivery for gas/thermal opportunities.





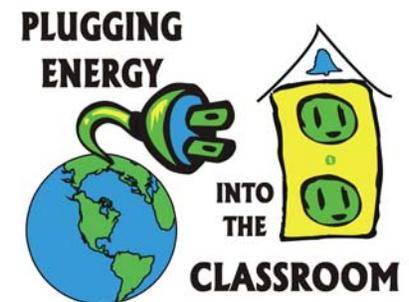
# Types of C&I Energy Saving Measures



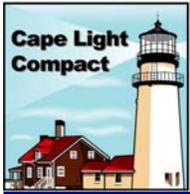


## NEED Project in Grades 3, 4 and 5

- Combined efforts of Barnstable County Cooperative Extension Service and Cape Light Compact.
- Partner with the NEED Project to provide teacher workshops, teaching tools, lesson plans and hands-on kits.
- Consistent with Massachusetts Science Standards
- Local teacher advisory board guides program
- HIGH Participation to date:
  - 100% of schools on Martha's Vineyard
  - 95% of schools on Cape Cod
  - parents and extended families
- Award winning program in 2003-2004 & 2004-2005 & 2005-2006 school years



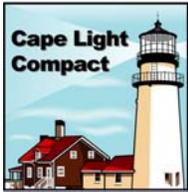
**NEED Project**



# Benefits of the Compact Efficiency Programs

- The programs offer immediate benefits by reducing the cost of generating, transmitting and distributing electricity.
- For every dollar spent on the Compact's programs, there is roughly three dollars of reduced electricity costs.
- Over the six-year plan, we estimate that the programs will result in *net* (i.e., after removing the costs) benefits of roughly \$81 million in reduced electricity costs.
- These programs will also help to reduce the environmental impact of electricity generation, estimated annual emission reductions\* of:
  - CO<sub>2</sub> 12,575,235 lbs
  - SO<sub>2</sub> 23,165 lbs
  - NO<sub>X</sub> 6,162 lbs
- These programs will also help stimulate jobs and economic development on the Cape and Vineyard.

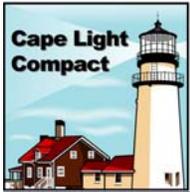
\*Source: Marginal emissions rates are for 2004 from a NEPOOL 2006 study as follows (lbs/MWh): CO<sub>2</sub> – 1,102; SO<sub>2</sub> – 2.03; NO<sub>X</sub> – 0.54)



## Helpful References

- [homeenergysaver.lbl.gov](http://homeenergysaver.lbl.gov) — Consumer Guide to Energy Savings Info.
- [www.eere.energy.gov](http://www.eere.energy.gov) - US DOE Energy Efficiency and Green Buildings
- [www.energystar.gov](http://www.energystar.gov) - Energy Star
- [www.mtpc.org](http://www.mtpc.org) - Massachusetts Technology Collaborative/Renewable Energy Info.
- [www.energyconservatory.com](http://www.energyconservatory.com) - Diagnostic Tools for Building Performance
- [www.reliance.org](http://www.reliance.org) - Cape and Islands Self Reliance
- [www.usgbc.org](http://www.usgbc.org) — U.S. Green Building Council  
– LEED Ratings





## Contact Info

### Compact Administrator:

- Maggie Downey (508) 375-6636 [mags@cape.com](mailto:mags@cape.com)

### Power Supply:

- Joe Soares, Sr. Power Supply Planner (508) 375-6623 [jas@cape.com](mailto:jas@cape.com)

### Energy Efficiency Programs:

- Kevin Galligan, Program Manager  
(508) 375-6828 [kfg@cape.com](mailto:kfg@cape.com)
- Margaret Song, Residential and Marketing Coord.  
(508) 375-6843 [msong@cape.com](mailto:msong@cape.com)
- John Burns, Commc'l, Industrial, Municipal Pgms  
(508) 375-6829 [burnsje@cape.com](mailto:burnsje@cape.com)
- Debbie Fitton, Energy Education Coordinator  
(508) 375-6703 [dfitton@capelightcompact.org](mailto:dfitton@capelightcompact.org)

[www.capelightcompact.org](http://www.capelightcompact.org)

