

Residential HVAC Programs in the Northeast



Chris Neme, Vermont Energy Investment Corp.



On behalf of
Northeast Energy Efficiency Partnerships



ENERGY STAR® HVAC Partner Meeting

Chicago, IL

October 6, 2004

Introduction



Who is NEEP?

- Regional non-profit
- Helps coordinate regional efforts



• Presentation Focus

- New England, Long Island & New Jersey
- Central A/Cs and Gas Furnaces
 - Programs also address heat pumps, boilers, oil/propane equipment
- **2004 Program Features**
 - Most will be unchanged in 2005
 - Will flag some possible changes for 2005



Northeast HVAC Market



- **~225,000 new central A/C installations per year**
 - Saturations high in new homes (~80%)
 - Saturations growing in existing homes
- **~135,000 new furnace installations per year**
- **No data on new gas boilers or oil/propane equipment, but non-trivial**
 - Gas boilers as common as gas furnaces (roughly)
 - ~40% existing homes have oil heat



Regional Program Overview



State/Territory	Central A/C Equipment Incentives	Central A/C Sizing & Installation Focus	Gas Furnace Equipment Incentives	Gas Furnace Fan Efficiency Incentives
Connecticut	✓	✓		
Long Island, NY	✓	✓		maybe in 2005
Maine				
Massachusetts	✓	✓	✓	✓
New Hampshire			✓	✓
New Jersey	✓	✓	✓	✓
Rhode Island	✓	✓	✓	✓
Vermont	✓	maybe in 2005	✓	✓



Central A/C Rebates



State/Territory	Customer Incentives			Extra Contractor Incentives	Other requirements
	SEER 13 EER 11	SEER 14 EER 12	SEER 15 EER 13		
Connecticut	\$350	same	same	\$120	Proper Size/Chg/Flow
Long Island, NY	\$300	\$400	\$500		
Maine					
Massachusetts	\$300	\$450	same	\$100 if NATE	
New Hampshire					
New Jersey	\$300	\$500	same	\$100	Proper Size/Chg/Flow
Rhode Island	\$370	\$550	same		Proper Size/Chg/Flow
Vermont	\$200	same	same		

Central A/C Installation Focus



- **Connecticut**

- Promoting use of Honeywell Service Assistant
- \$50 - \$100 for diagnostic & improvements w/tool



- **Long Island**

- Requires proper size/chg/flow for equipment rebate
- Training technicians on Manual J, charge/airflow
- Future integration w/Home Performance w/Energy Star
- Future use of in-field verification tools likely



- **Massachusetts**

- Extra \$100 for installation by NATE certified tech

Central A/C Installation Focus (2)



- **New Jersey**

- Requires proper size/chg/flow for equipment rebate
- Training technicians on Manual J, charge/airflow
- Aggressive promotion of NATE certification
- Significant customer education efforts



- **Rhode Island**

- Requires proper size/chg/flow for equipment rebate
- Uses Proctor Check Me tool for verification

Gas Furnace Rebates



State/Territory	AFUE Incentives		ECM Fan Incentives
	90% AFUE	92% AFUE	
Connecticut			maybe
Long Island, NY			
Maine			
Massachusetts	\$150	\$400 if ECM	incl w/92% AFUE
New Hampshire	\$150	\$400 if ECM	incl w/92% AFUE
New Jersey	\$300	same	
Rhode Island	\$150	\$400 if ECM	incl w/92% AFUE
Vermont	\$300	same	\$150 to customer \$50 to contractor

Market & Field Research (STAC)

- Characterization of northeast HVAC market
- Impact of NATE certification on central A/C installation quality
 - Field tests of actual operating efficiency
 - Two samples: NATE installs, non-NATE installs
- Variable speed system efficiency during peak
 - Extensive field metering and monitoring of 5 systems



NEEP Program Contacts



Chris Neme, HVAC Program Manager

802-658-6060 ext. 1022

cneme@veic.org



Subid Wagley, Associate Programs Manager

781-860-9177 ext. 15

swagley@neep.org

Fax: (781) 860-9178 Web: www.neep.org

**More Detail in Following
Slides**



GasNetworks



- Bay State Gas
- Berkshire Gas
- New England Gas Company
- NSTAR Gas
- KeySpan Energy Delivery
- Unitil
- Northern Utilities of New Hampshire



Providing rebates for high efficiency heating equipment since 1997

GasNetworks



Continued Adjustment of Rebates to Reflect Market Response



Furnace Rebates - 90% and 92% AFUE with ECM

- \$150/unit and \$400/unit



Hot Water Boiler Rebates - 85% AFUE

- \$500/unit

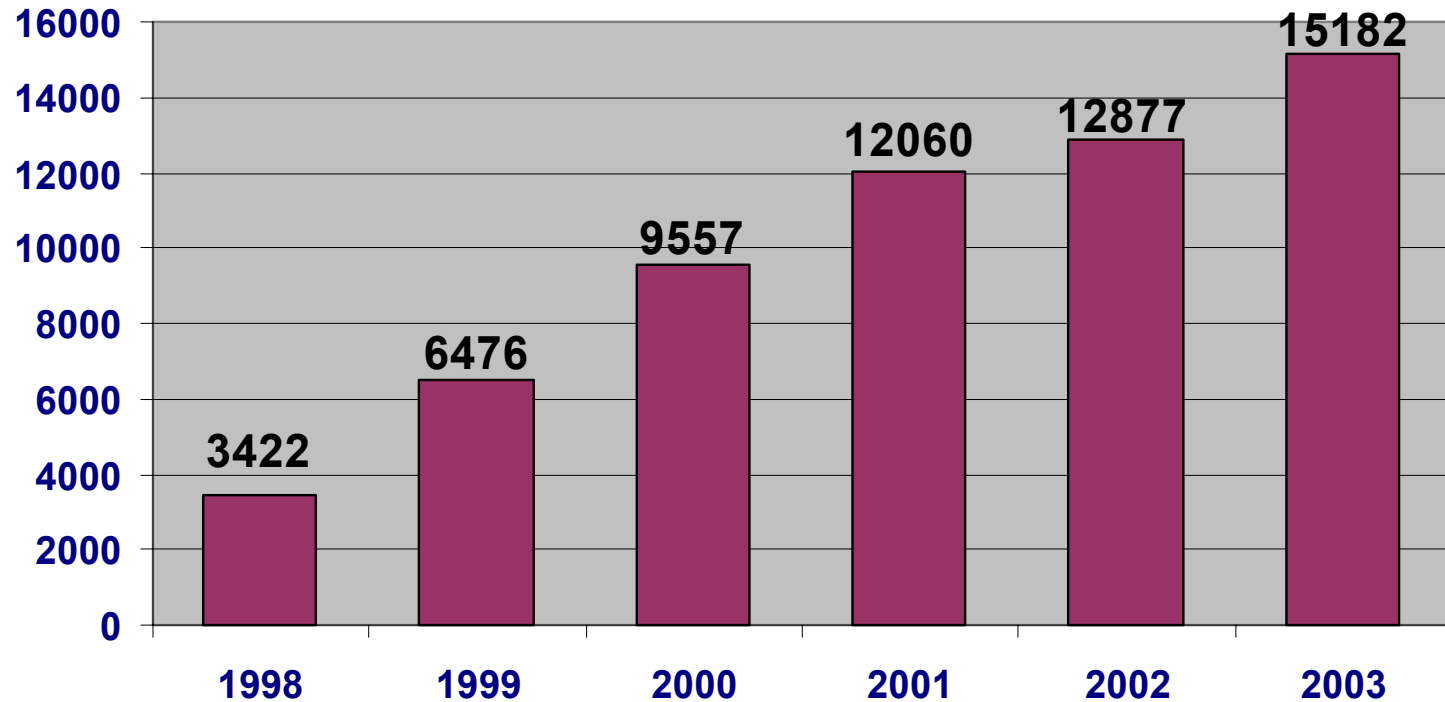
Steam Boiler Rebates - 82% AFUE

- \$200/unit

GasNetworks

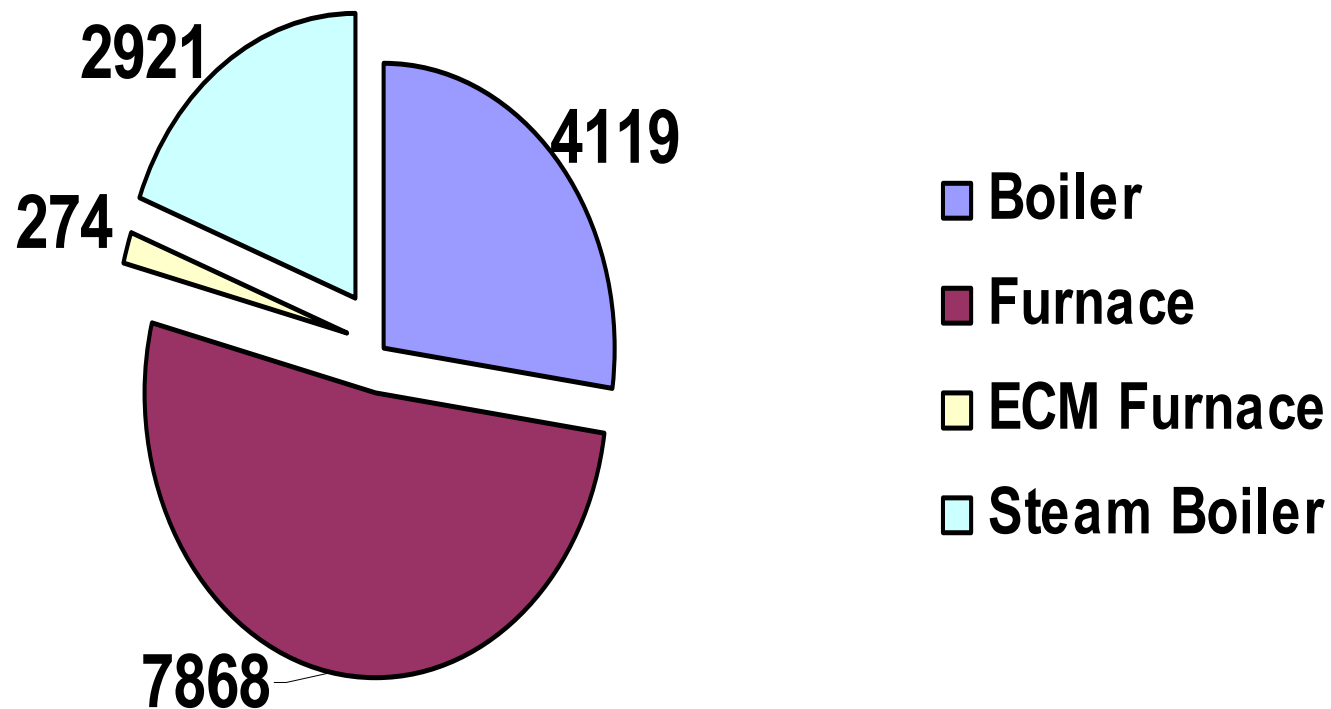


Total Residential HE Rebates



GasNetworks

Distribution of Rebates by Equipment Type 2003



GasNetworks



- Joint Utility promotion of Furnaces with High Efficiency Blower Fans
 - Utilities split \$400 rebate for gas furnaces ($\geq 92\%$ AFUE) with high efficiency blower fans (ECM or equivalent)
- Partnering Utilities:
 - Massachusetts Electric
 - NSTAR Electric
 - Western Massachusetts Electric
 - Unitil
 - Cape Light Compact



Massachusetts Cool Smart



April 2004 - Program launched

- Provides consumer rebates
- Offers special training and incentives for contractors
- Goals:
 - Provide 2,000 rebates
 - Provide 200 NATE Certifications



Program Sponsors:

Cape Light Compact, NSTAR Electric,
Nantucket Electric, Massachusetts Electric,
Unitil, and WMECo

Massachusetts Cool Smart



Rebate for Qualified ENERGY STAR Equipment

Central A/C – SEER 13 and SEER 13 with ECM

\$300 and \$350/unit

SEER 14 and SEER 14 with ECM

\$450 and \$500

Heat Pumps – SEER 13, HSPF 8 (with ECM)

\$300 (\$500)

SEER 14, HSPF 8.5 (with ECM)

\$450 (\$650)

\$100 Incentive for NATE certified contractor



New Jersey - CoolAdvantage and WarmAdvantage Programs



Electric HVAC - CAC and HP

SEER 13, EER 11 - \$300 and \$400 (8.0 HSPF)

SEER 14, EER 12 - \$500 and \$650 (8.5 HSPF)



Furnaces and Boilers

Furnaces - 90% AFUE - \$300/unit

Boilers - 85% AFUE - \$300/unit



Ground Source HP → EER 13 - \$500/ton

Rebate availability:

Existing Homes – Statewide

New Construction – Limited to specified 'Smart Growth' areas

New Jersey - CoolAdvantage and WarmAdvantage Programs



Year 2003 Program Activity:

- 16,009 Rebates -- CAC/HP
- 8,777 Rebates -- Furnaces/Boilers



HVAC Trainees:

- 1,244 (mix of Manual J, charge/airflow, sales training, prep for NATE certification test)
- NATE certified technicians: 427 new certifications in CAC or HP
- 172 ENERGY STAR sales training



Inspections ensure that program sizing, airflow and charging specifications are met.

Rhode Island – Cool Change Program



Electric HVAC - CAC and HP

SEER 13, EER 11 - \$370 and \$370 (8.0 HSPF)

SEER 14, EER 12 - \$550 and \$550 (8.5 HSPF)



- \$100 Spiff to the HVAC Contractors for filling out rebate forms, passing CheckMe test, completing inspections to ensure that program sizing, airflow and charging specifications are met.
- 35 Technicians trained on program requirements and quality installations in 2003.



New York - LIPA Cool Homes



Electric HVAC - CAC and HP

SEER 13, EER 11 - \$300 and \$400 (8.0 HSPF)

SEER 14, EER 12 - \$400 and \$600 (8.5 HSPF)

SEER 15, EER 13 - \$500



Contractor receives \$120 for (mandatory) completion of Manual J calculation.

Inspections ensure that program sizing, airflow, and charging specifications are met.

New inspections process more in-depth, verify airflow & Manual J calculations in addition to visual inspections.

New York - LIPA Cool Homes



Program Activities

- 5,527 applications for rebates processed in 2003
- 84 contractors trained to date on Manual J, airflow, and/or charging
- Consumer marketing in 2003 included Yellow Pages, updated website, consumer brochure, website and bill stuffers



Connecticut - High Efficiency Heating/Cooling Program

Electric HVAC - CAC

SEER 13, EER 11 - \$350

Electric HVAC - HP

SEER 13, EER 11, 8.0 HSPF - \$350

Ground Source Heat Pumps

EER 13.4, COP 3.1 - \$350

2,237 Qualified Rebates - CAC and HP combined in 2003.

Program disruption in 2003



Connecticut – Southwest Tune-up Program



After the Program suspension in 2003,
Southwest CT is now offering a
comprehensive set of services:



- \$50 Contractor incentive for quality installations
- Program Focused in Southwest CT
- Partnered with Honeywell Services to provide HVAC Diagnostic system tools to HVAC contractors
- 30 participating contractors and 100 Honeywell Service Assistant tools in use at this time



Vermont HVAC Program



Vermont Gas Program Activities for 2003:

- 189 rebates for furnaces (AFUE 90% or higher - \$350/unit)
- 137 rebates for boilers (AFUE 87% or higher - \$450/unit)



Efficiency Vermont

- CAC and Furnace Program launched in May/April 2004.
- \$50 Incentive to Contractors/Sales person
- 35 CAC rebates and 10 furnace fan rebates through the end of July.

New Construction Programs



Varying approaches to high efficiency HVAC:



- Included in HERS calculations for ENERGY STAR Homes compliance
- System commissioning services offered in some programs (MA)
- Rebates for high efficiency equipment (NJ)



Strategies to Increase Residential HVAC Efficiency in the Northeast



Budget: \$596,104

Schedule: July 2004 – 2005

Funders: US DOE, NJ BPU, NYSERDA



Tasks:

- Regional HVAC Market Characterization (Northeast)
- Assess Emerging Technologies & Practices
- Estimate HVAC Efficiency Potential in Northeast
- On-site survey comparing installations in NY & NJ by trained/certified and other contractors
- On-site monitoring of High SEER equipment in NY and NJ
- Draft program design to transform/develop market for duct sealing



NEEP's role is project admin and management as well and technical expertise, as in kind contributions.

Northeast HVAC Program Administrator Contacts

Dick Moran, Gas Networks and NSTAR Electric (MA)

781-441-3895

richard_moran@nstaronline.com



Kevin Galligan, Cape Light Compact (MA) -

508-375-6828

kfg@cape.com



Dave Legg, National Grid (RI & MA) – 508-421-7265

Dave.Legg@us.ngrid.com

Norm Barry, CL&P (CT) - 860-832-4753

barrynj@nu.com

Northeast HVAC Program Administrator Contacts



Tom Turco, UI (CT) – 203-499-2111

Tom.Turco@uinet.com



Maggie Ramos, LIPA (NY) – 631-436-4225

mramos@keyspanenergy.com



**Cameron Johnson, NJ Clean Energy Program –
609-777-3316**

cameron.johnson@bpu.state.nj.us