



131,163
tons paper



4.69
million dollars



6,528
MWh electricity



207,902
therms gas

December 14, 2009

Neighbor to Neighbor Energy Challenge

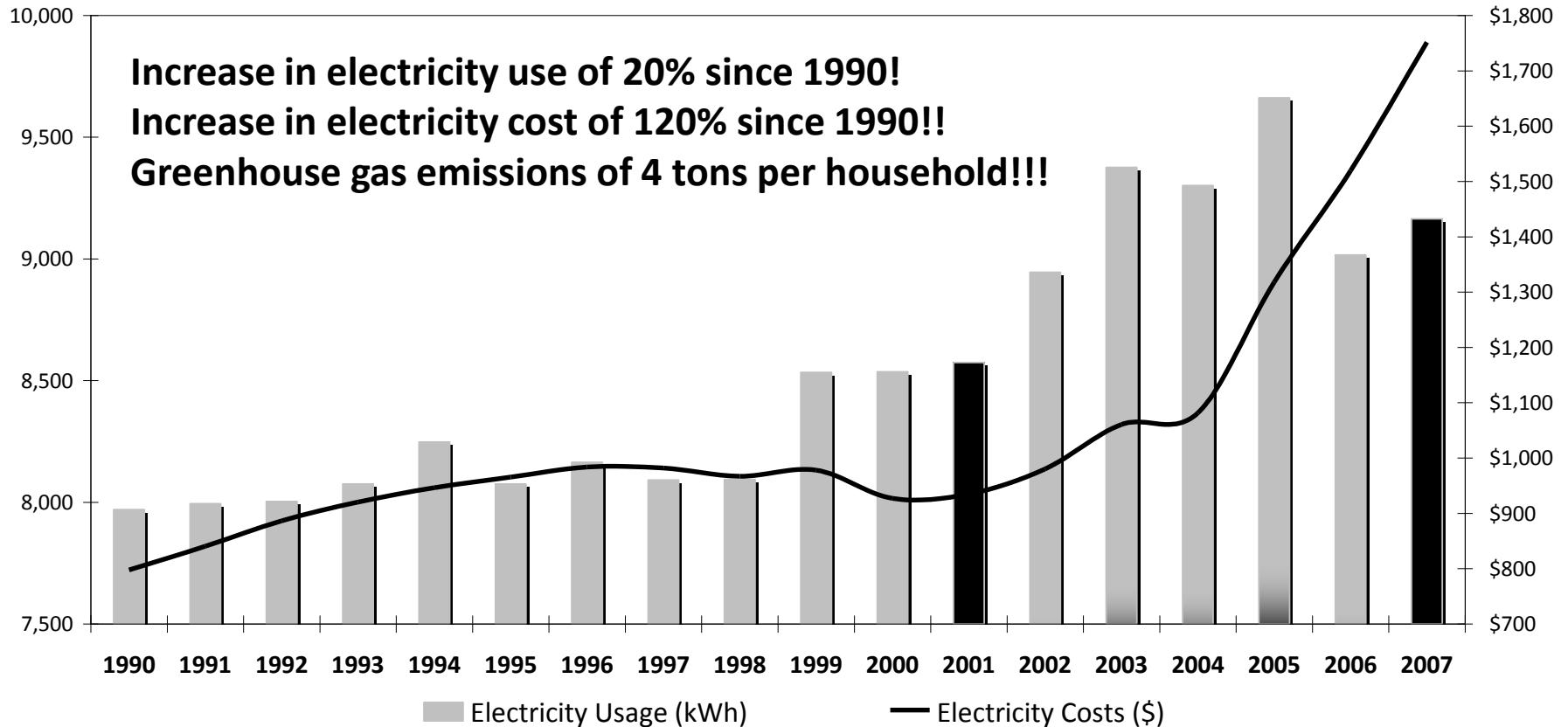
A Community Energy Savings Project

Submitted to the U.S. Department of Energy's Competitive Energy Efficiency Conservation Block Grant Program



The Challenge

Residential Electricity Usage in Connecticut



Nearly 1.5 million households paid over \$2.5 billion in electricity costs in 2007

References

EIA Data (2009).



Neighbor to Neighbor Energy Challenge

Goals

Target participation of **10 percent of households** to set specific, measurable stretch goals of **20 percent for energy savings and clean energy usage**, and provide support to assist them in achieving these goals.

Personal Energy Advisor

Set Goals and Establish an Individual Savings Plan

Online platform gives citizens personalized advice on how to save money, energy and other resources in their own lives, and how they compare to their friends, neighbors and community.

My Savings Plan


I want to save \$

each

at Cost

This July's bill: **\$106.89**

Last July's bill: **\$118.89**

 In July, you need to save 8 more dollars to reach your savings goal of \$20 a month!


Ways to Save » Home

<input type="checkbox"/> Ditch the extra fridge	\$10
<input type="checkbox"/> Hand clean your oven	\$4.86
<input type="checkbox"/> Insulate your ducts	\$5.06
<input type="checkbox"/> Reduce your shower length	\$4.39
<input type="checkbox"/> Unplug audio/visual appliances	\$4.01
<input type="checkbox"/> Use smartstrips for plugs	\$3.96


Annual Dollar Savings

\$1437

Annual Energy Savings

 **2529816 hours**
powering this lightbulb

How am I doing?

 Last month you saved \$12 compared to your normal bill.

Already or currently being done:

- ▶ Turn down thermostat at night
- ▶ Lower washing machine temperature
- ▶ Turn off coffee maker after





Neighbor to Neighbor Energy Challenge

Objectives

- Get residents on a “**Food Chain of Sustainable Energy Usage**”;
- Demonstrate the value of aggregated residential energy savings and clean energy usage in **energy and environmental markets** (i.e. renewable portfolio standards, energy efficiency resource standards, and carbon markets); and
- Develop a **replicable and scalable model**.



Neighbor to Neighbor Energy Challenge

Project Impacts (Lifetime)

- **EECBG Funds Requested** – \$4,171,124 (Years 1-3)
- **Funds Leveraged and In-Kind** – \$19,678,156 (Years 1-3)
- **Job-Years Created or Retained** – 386
- **Utility Savings** – \$147,996,891
- **Emissions Reductions (MTCO₂)** – 248,726
- **Energy Reduced (MMBtu)** – 1,769,356
- **Leverage** – 4.7 (Years 1-3)

Neighbor to Neighbor Energy Challenge

Project Impacts – Energy Efficiency and Clean Energy

Project Measures	Jobs	Energy Savings (MMBtu's)	Energy Savings (\$'s)	Emissions Avoided (MMTCO ₂)	EECBG Funds Expended	Btu's Saved per \$1,000 EECBG Funds	EECBG Funds per MTCO ₂ Reduced
Project Impact During Project Period (Years 1-3)							
Energy Efficiency	161	308,830	\$12,057,755	0.0219	\$2,788,848	110,737,657	\$127
Renewable Energy	98	7,574	\$23,023	0.0287	\$1,382,276	5,479,617	\$48
Total	259	316,405	\$12,080,778	0.0506	\$4,171,123	75,856,015	\$82
Project Impact Post Project Period (Years 4-6)							
Energy Efficiency	57	412,542	\$21,996,828	0.0357	\$2,788,848	147,925,711	\$78
Renewable Energy	61	7,977	\$104,489	0.0595	\$1,382,276	5,770,918	\$23
Total	118	420,519	\$22,101,316	0.0952	\$4,171,123	100,816,790	\$44
Total Project Impact (Years 1-6)							
Energy Efficiency	218	721,373	\$34,054,583	0.0576	\$2,788,848	258,663,368	\$48
Renewable Energy	159	15,551	\$127,512	0.0882	\$1,382,276	11,250,536	\$16
Total	377	736,924	\$34,182,095	0.1458	\$4,171,123	176,672,805	\$29
<p>⊗ EECBG funds expended include Years 1-3 funding only. The Project does not achieve impacts in Years 4-6 without the investment of EECBG funds in Years 1-3.</p>							
<p>Data sources: EIA (2009), eGRID2007 Version 2.1 (2008), and the National Climatic Data Center.</p>							

Neighbor to Neighbor Energy Challenge

Funds Requested, Leveraged Funds and In-Kind

Source	Year 1-3	Year 4-6	Total
EECBG Funds	\$4,171,123	-	\$4,171,123
Leveraged Funds and In-Kind	\$19,678,156	\$9,399,361	\$29,077,517
Ratepayer Fund Incentives	\$10,390,529	\$6,022,818	\$16,413,347
Federal Tax Credits	\$5,137,500	\$3,217,500	\$8,355,000
Financing	\$3,164,280	-	\$3,164,280
In-Kind and Volunteer	\$985,847	\$159,044	\$1,144,890
Total	\$23,849,279	\$9,399,361	\$33,248,640
Grant Leverage	4.7		
REC Revenue Opportunity	\$50,960	\$47,954	\$98,914

Neighbor to Neighbor Energy Challenge

14 Town Consortium



Town of East Hampton
Town of Lebanon



Neighbor to Neighbor Energy Challenge

9 Key Partners – Clean Energy Fund is the Lead Applicant



CONNECTICUT
CLEAN ENERGY FUND



EFFICIENCY2.0



SmartPower
Let's Get Energy Smart.



**Massachusetts
Institute of
Technology**

AFCFIRST
SINCE 1947

 A Great Bear Company



**CLEAN WATER
FUND**



Neighbor to Neighbor Energy Challenge

Program Elements – Community Resources

- **Personal Energy Advisor** – an online personal energy savings plan and action advisor, and community-wide leader boards that are intended to change residential energy usage behavior;
- **Clean Energy Community Corps** – on the ground volunteer work force educating the community and residents one-on-one and undertaking actions;
- **Interest Rate Buydown** – low interest loan financing program to support major retrofits and solar thermal projects ; and
- **Community Incentive** – performance-based community incentives for both clean energy and energy efficiency.

Neighbor to Neighbor Energy Challenge

Program Elements – Energy Efficiency and Conservation

- **Lighting Retrofit** – in the home lighting retrofit to take-out and recycle inefficient incandescent light bulbs and replace with efficient specialty CFL's in high usage rooms;
- **Home Energy Solutions** – a home energy assessment including a blower-door test, duct test, hot water savings measures, efficient lighting measures, and a “kitchen table wrap-up” (\$75 co-pay by the home owner is required); and
- **Major Retrofit** – incentives for efficient HVAC systems, insulation, and other appliances with state (between \$0.50-\$1.00 ft² for insulation and rebates for HVAC and appliances) and federal (up to \$1,5000) incentives.



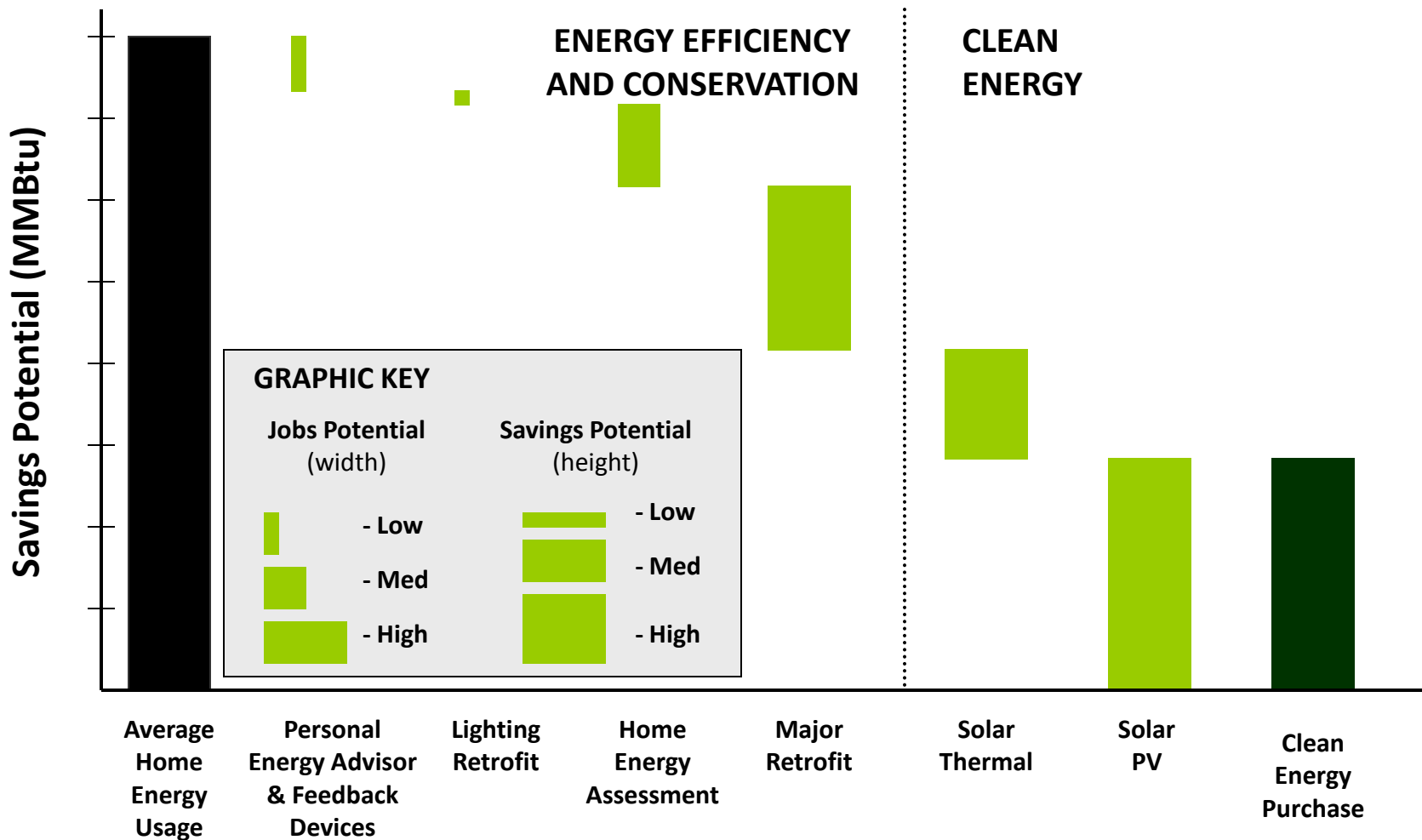
Neighbor to Neighbor Energy Challenge

Program Elements – Clean Energy

- **CTCleanEnergyOptions** – a voluntary program to support clean energy on the grid from several offerings from Community Energy and Sterling Planet (\$0.013/kWh additional); and
- **Solar Thermal and Photovoltaic Systems** – systems for household water heating and electricity production with incentives provided by the state (\$500/MMBtu and \$1,600/kW, respectively) and the federal government (30% of the installed cost).

Food Chain of Sustainable Energy Usage

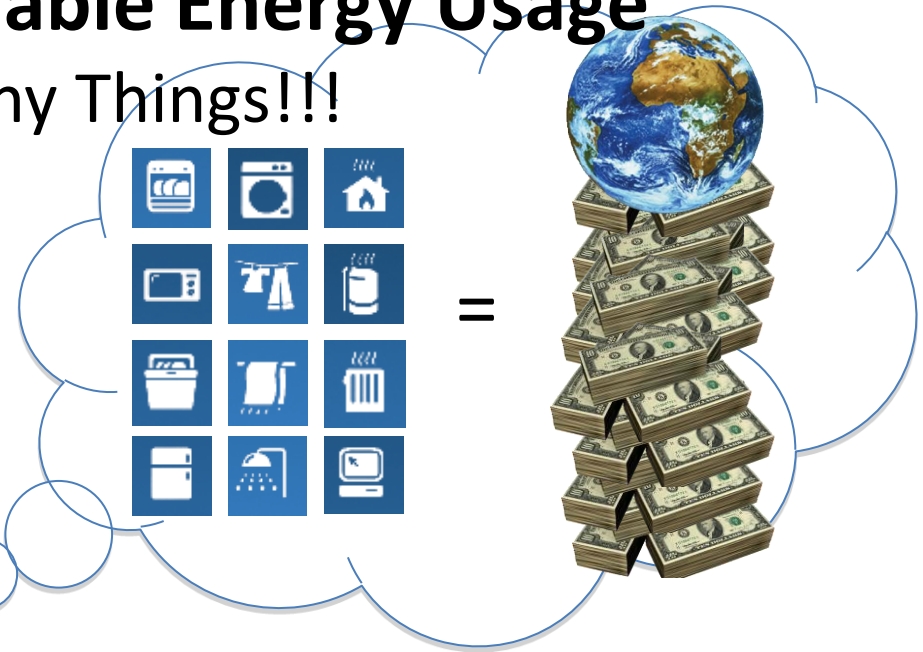
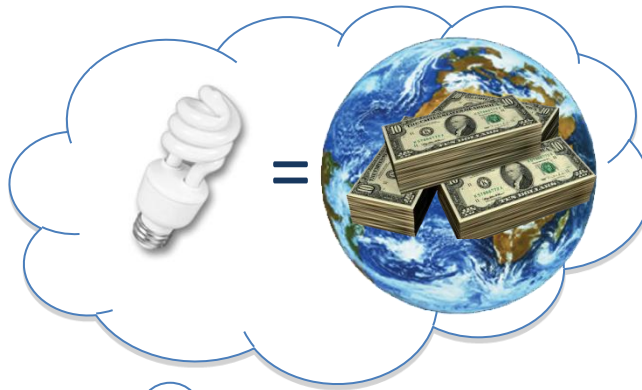
Jobs – Energy Savings and Usage – Emission Reductions



Food Chain of Sustainable Energy Usage

From “One Thing” to Many Things!!!

*Move People from
One Thing...*



...to Many Things

By getting them on the “food chain of
of sustainable energy usage”



Community Marketing and Outreach

Engaging Trusted Messengers with Appropriate Language

**This is way cool! I
can stop climate
change by
unplugging!**

**With a fixed income,
this energy efficiency
stuff makes economic
sense!**

**I want to support my
community by being
Energy Smart!**



Neighbor to Neighbor Energy Challenge

Program Overview – Targets

Program Activity	Year 1	Year 2	Year 3	Yrs 1-3 Total	3 Yr HH Penetration		Total Households Reached	6 Yr HH Penetration Rate
					Rate	Yrs 4-6 Total		
Events	120	119	26	265	0%	-	265	0%
Personal Energy Advisor	3,018	5,030	-	8,048	8%	-	8,048	8%
Lighting Retrofits	2,883	4,441	-	7,324	8%	-	7,324	8%
Home Energy Solutions	2,510	2,489	1,250	6,250	6%	3,750	10,000	10%
Major Retrofits	502	498	250	1,250	1%	750	2,000	2%
Feedback Devices	200	-	-	200	0%	-	200	0%
CTCEO sign-ups	1,006	1,006	1,006	3,018	3%	3,000	6,018	6%
Solar Thermal installs	75	75	-	150	0%	150	300	0%
Solar PV installs	50	50	-	100	0%	150	250	0%

Neighbor to Neighbor Energy Challenge

Estimated Benefits to the Town Consortium

TOWN	# HOMES	% HOMES	\$ UTILITY SAVINGS	MTCO2 REDUCTIONS	EECBG TOWN INVESTMENT	TOTAL INVESTMENT
BETHANY	1,975	2.0%	\$3,003,832	5,048	\$84,660	\$674,834
CHESHIRE	9,932	10.2%	\$15,105,852	25,387	\$425,741	\$3,393,646
EAST HADDAM	4,340	4.5%	\$6,600,825	11,093	\$186,037	\$1,482,926
EAST HAMPTON	5,174	5.3%	\$7,869,279	13,225	\$221,787	\$1,767,894
GLASTONBURY	13,290	13.7%	\$20,213,126	33,971	\$569,684	\$4,541,034
LEBANON	3,096	3.2%	\$4,708,792	7,914	\$132,712	\$1,057,866
MANSFIELD	5,878	6.0%	\$8,940,012	15,025	\$251,964	\$2,008,442
PORTLAND	3,926	4.0%	\$5,971,161	10,035	\$168,290	\$1,341,467
RIDGEFIELD	9,160	9.4%	\$13,931,696	23,414	\$392,649	\$3,129,863
WESTON	3,627	3.7%	\$5,516,404	9,271	\$155,474	\$1,239,303
WESTPORT	10,118	10.4%	\$15,388,744	25,863	\$433,714	\$3,457,200
WETHERSFIELD	11,547	11.9%	\$17,562,150	29,515	\$494,969	\$3,945,472
WILTON	6,155	6.3%	\$9,361,309	15,733	\$263,838	\$2,103,090
WINDHAM	9,089	9.3%	\$13,823,710	23,232	\$389,605	\$3,105,603
TOTAL	97,307	100.0%	\$147,996,891	248,726	\$4,171,124	\$33,248,640