

**WEST
HARTFORD
CLEAN
ENERGY
TASK FORCE**

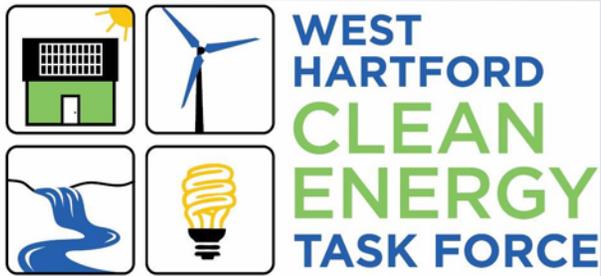
Save Home Energy Workshop

February 13, 2013

Roger Smith, Catherine Diviney

West Hartford Clean Energy Task Force

www.westhartford.org/green

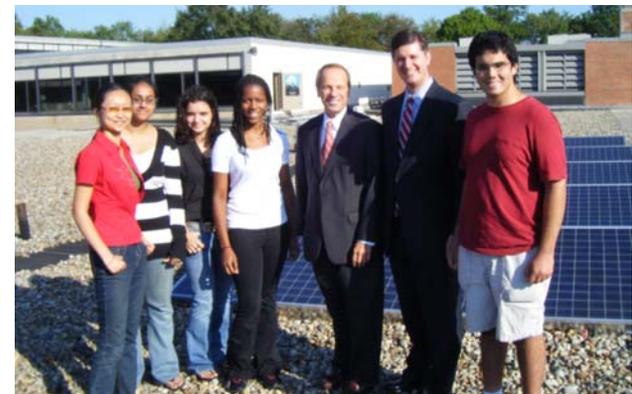


About West Hartford Clean Energy Task Force

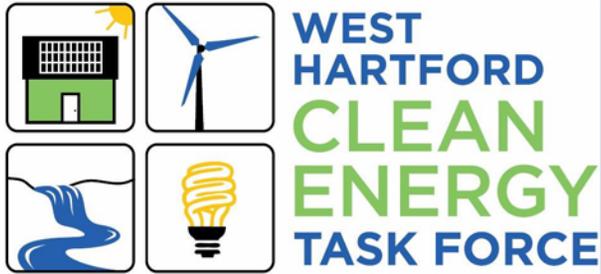
- Created in 2005 to support the town on energy related matters
- Worked with the town to create comprehensive energy plan in 2009
- Current initiatives include clean energy sign-ups, residential and small business energy outreach
- Join us! Next meeting: Wed 2/20, 7pm Town Hall



Legrand Tour

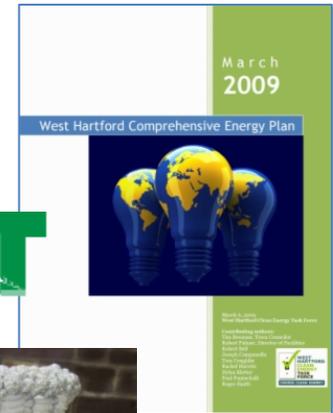


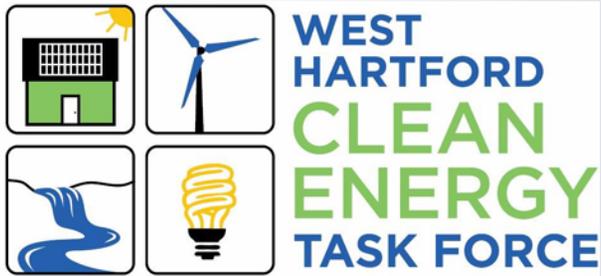
Conard HS Solar Panels



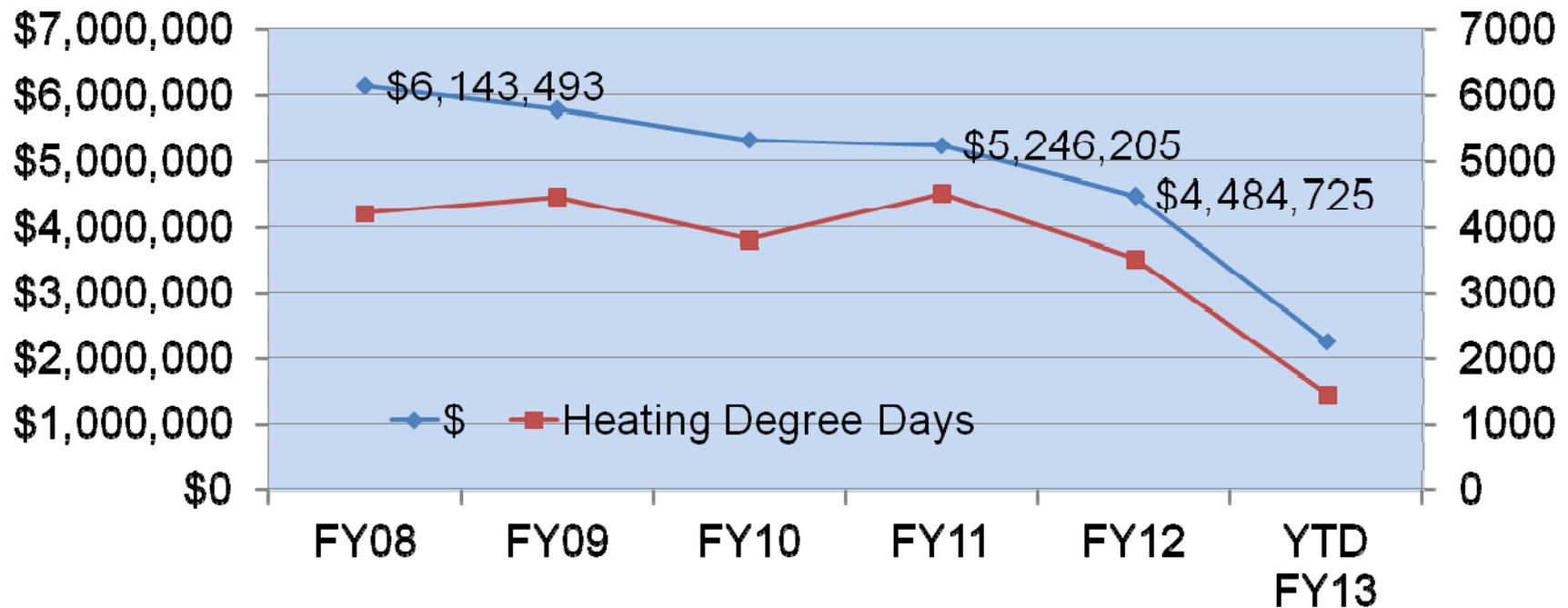
Town of West Hartford is a leader

- One of oldest (and best) task forces
- Model energy plan
- Part-time Energy Specialist position
- CT Clean Energy Community – meeting or exceeding clean energy and energy efficiency goals
- Annual WHPS Energy Conservation Challenge

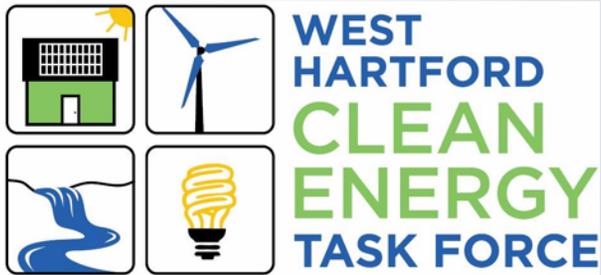




Town & BOE Utility Expenses



- Decreased through both cost savings and reduced use



What we're working on

- www.westhartford.org/green
- Tracking utility bills
- Energy procurement
- Energy efficiency projects/
Performance contracting
- Cx and utility incentives
- Green building
- Small business outreach / CPACE

WEST HARTFORD CONNECTICUT
Where City Style Meets Village Charm
Home | Living Here | Doing Business | Visiting | I We

WH is Green

- [Clean Energy Task Force](#)
- [Comprehensive Energy Plan](#)
- [West Hartford Public Schools Culture Of Conservation](#)
- [Utility Data](#)
- [Solar Projects](#)
- [Energy Efficiency Projects](#)
- [Recycling](#)
- [News](#)
- [Resources & Links](#)
- [Business Honor Roll](#)
- [Contact Us](#)

Events

Jan 24, 9:00 AM, WH-CETF Tour with Legrand. More info: catherine.divincio@westhartford.org

Feb 9, 9:00 AM - 3:00 PM, Energy Expo, Enfield, CT. www.CtEnergyExpo.com

Feb 10, 9:00 AM - 3:00 PM, West Hartford...

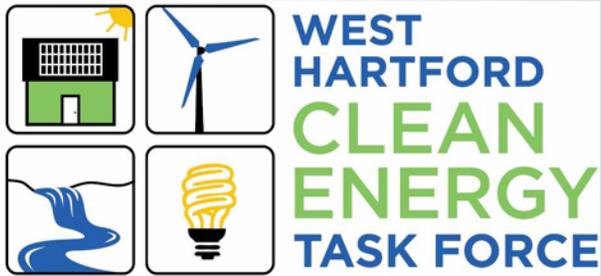
West Hartford is Green

The Town of West Hartford is committed to **Creating a Culture** and environmental resources are an important part of everyday responsibility to be good stewards of those resources for the future - student, teacher, staff, parent, community member, town contribute in some way, everyday.

West Hartford has a long history of environmental stewardship. In **2005**, we were one of the first towns to pledge to become a **CT Clean Energy** of the Connecticut Clean Energy Fund (now the **Clean Energy Finance Authority**). Through this program, West Hartford committed to purchases of 20% by 2010. In **September 2012**, The Town renewed this program, which was expanded to include both clean energy goals. In **December 2012**, West Hartford also became one of the first in the state to join the state-approved **C-PACE (Commercial Property Assessed Energy)** program, a tax-lien financing program which allows businesses affordable financing for energy upgrades in their buildings.

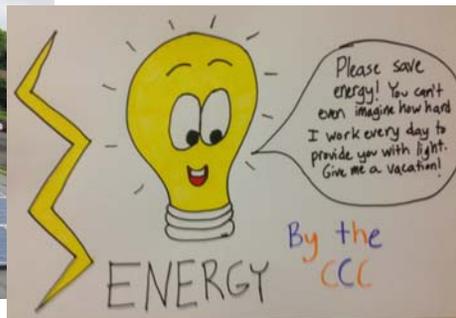
The Town also joined to the **U.S. EPA Community Energy Challenge Conference of Mayors Climate Protection Agreement**. West Hartford has the highest residential clean-energy sign-up rates in the state, all "points" towards free **solar PV systems**. We have an active **Clean** part-time Energy Specialist staff position. All of our schools participate in the **Conservation Challenge** to see which can save the most electricity.

West Hartford strives to **lead by example** and do our share to...

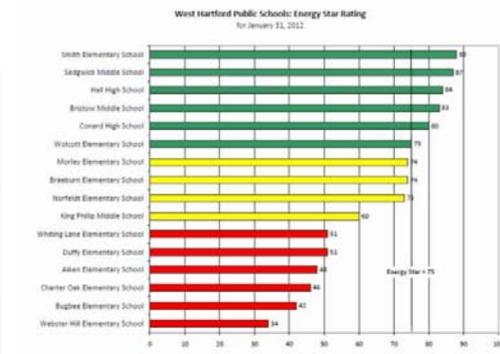


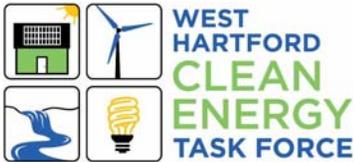
What we're working on

- Renewable/solar
- Energy Star ratings for schools (CT Green Leaf Schools Program)
- WHPS Conservation Challenge/energy dashboards



Site/Location	Size (DC)	% of Building Electricity
<u>Town Hall</u>	3 KW	small
<u>Conard High School</u>	3 KW	small
<u>Hall High School</u>	3 KW	small
<u>Bristow Middle School</u>	95 KW	20%
<u>Department of Public Works</u>	102 KW	50%
<u>Bishops Corner Library/Senior Center</u>	58 KW	40%
<u>Wolcott Elementary School</u>	11 KW	3%
<u>Conard Green Energy Community Display Lab</u>	1.5 KW	





Sign up for **CTCleanEnergyOptionsSM**

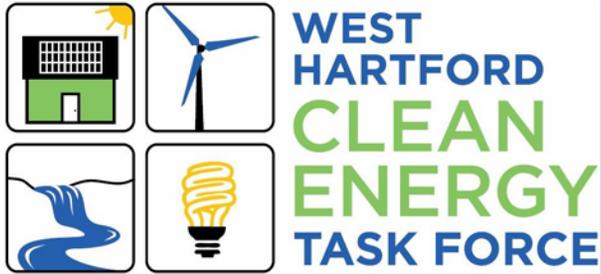
YOUR OPTIONS

[View 'COMPARE COSTS'](#)

3Degrees			
Offerings	New England Renewable Energy	Northeast Regional Renewable Energy	Additional \$ per kWh
100% Northeast Clean Power	5%	95%	\$0.0099 kWh
50% Northeast Clean Power			\$0.00495 kWh

Community Energy			
Offerings	Wind Northeast	Solar Northeast	Additional \$ per kWh
Community Energy 100%	99%	1%	\$0.0099 kWh
Community Energy 50%	99%	1%	\$0.00495 kWh

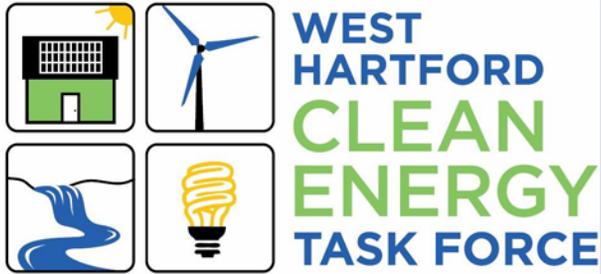




Why are we here?

-  Average CT home spends about \$3500 on energy each year
-  Inefficient homes waste 25%+ more energy than efficient ones
-  Inefficient homes often drafty, dry, uncomfortable!
-  Efficiency key solution to oil dependence, air pollution, global warming



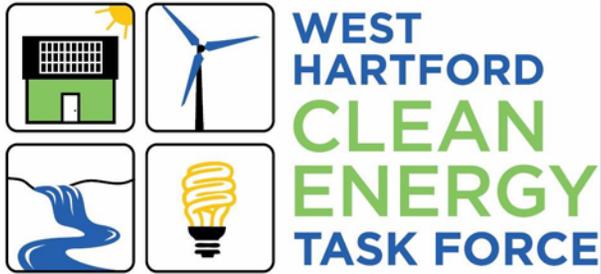


We're here to make saving energy easy!

- Catherine Diviney and Task Force members willing to answer questions at any time
- We communicate with contractors to help ensure quality
- Connect neighbors to learn from experience
- Provide latest information about energy incentives

Tonight's Contractors:

- New England Smart Energy Group
- Goodlife Insulation
- C-Tec Solar



Why act now?



Federal Tax credits

+



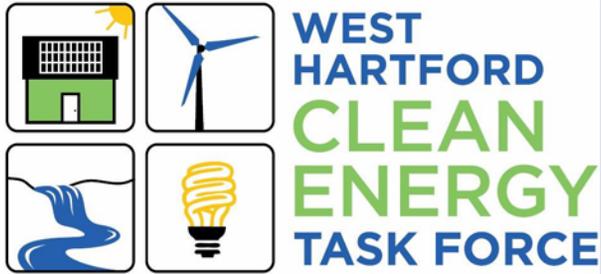
CT Energy Efficiency Fund rebates

+



CT Energy Loan financing

Best opportunity in years



Federal Energy Star Tax Credits

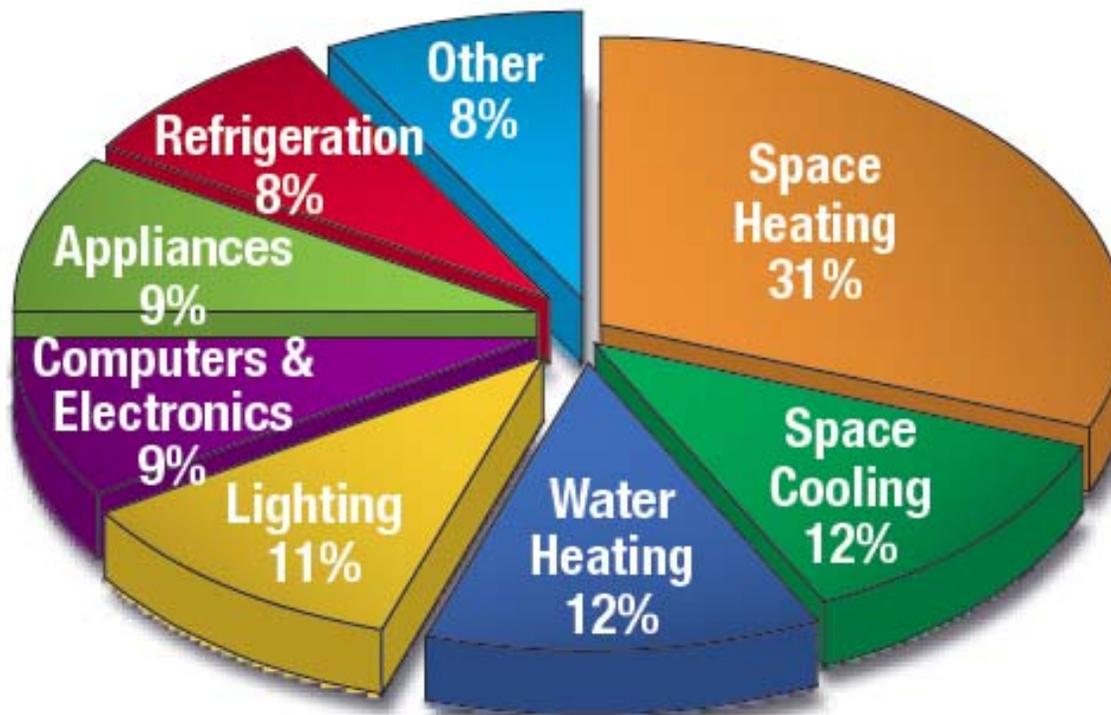
1. Energy Efficiency Improvements

- 10% of cost up to \$500
(Unless otherwise specified)
- For improvements done in 2012 or 2013

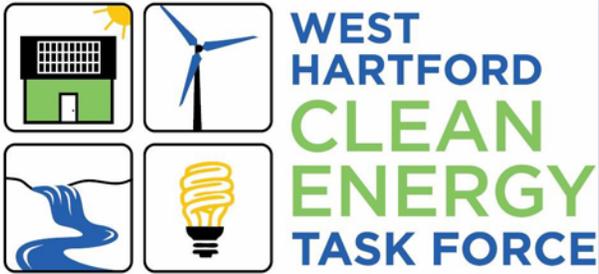
2. Renewable Energy Systems

30% of cost through 2016

Where do your Home Energy Dollars go?



Source: DOE 2007 Buildings Energy Data Book, Table 4.2.1., 2005 energy cost data.



Where not to Start?



All New Windows

© 2008 UNIVERSAL MEDIA SYNDICATE. SPECIAL ADVERTISEMENT FEATURE. ADVERTISEMENT. FOR HEAT SURGE, LLC. 3035 EVERHARD, NC, CANTON, OH 44705

Amish man's new miracle idea helps home heat bills hit rock bottom

Miracle heaters being given away free with orders for real Amish fireplace mantles to launch the new invention that slashes heat bills, but Amish craftsmen under strain of winter rush impose household limit of 2

Saves money: uses less energy than a coffee maker, so leave it on day and night and never be cold again

By MARK WOODS
Universal Media Syndicate

(UMS) Everyone hates high heat bills. But we're all sick and tired of turning down the thermostat and always being cold.

Well now, brand new HEAT SURGE™ miracle heaters are actually being given away free to the general public for the next two days starting at precisely 8:00 a.m. today.

The only thing local readers have to do is call the National Distribution Hotline before the 48 hour deadline with their order for the handmade Amish Fireplace Mantles. Everyone who does is instantly being awarded the miracle heaters absolutely free.

This is all happening to launch the new HEAT SURGE Roll-n-Glow™ Amish Fireplace that actually rolls from room to room so you can take the heat with you anywhere. That way, everyone who gets them first can immediately start saving on their heat bills.

For the first time ever, portable Amish fireplaces are being delivered directly to the doors of all those who beat the deadline.

These miracle fireplaces have what's being called the 'Fireless Flame' technology that gives you the peaceful flicker of a real fire but without any flames, fumes, smells, ashes or mess. Everyone is getting them because they require no chimney and no vent. You just plug them in.

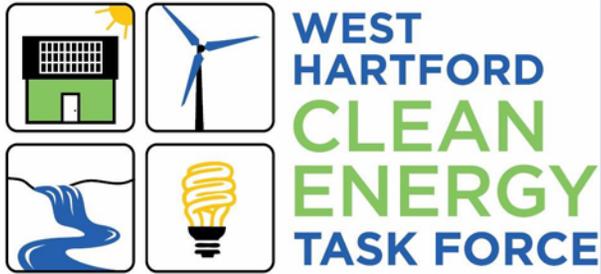
The Fireless Flame looks so real

HEAT SURGE
Fireless Flame Fire
Genuine Amish

UL LISTED

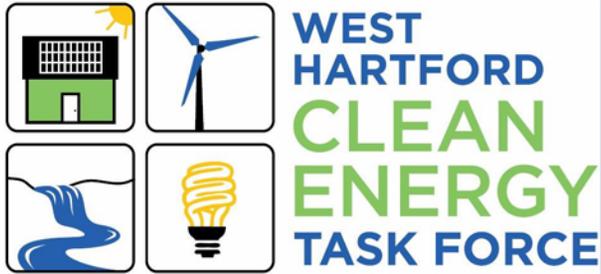
GENUINE AMISH MANTLES MADE IN THE USA: Amish craftsmen are pleased that Heat Surge officials have provided proof of certification of the coveted UL Listing for the miracle heater. Now, everyone wants to save money on heat bills this winter, so entire Amish communities are working from the crack of dawn to finish. These fine solid wood Amish made fireplace mantles are built to last forever. The solid oak mantle is a real steal at just two hundred ninety-eight dollars because all those who beat the order deadline by calling the National Hotline at 1-800-242-6155 to order the fireplace mantles are

Electric Space Heaters



Get started with Four Do-It-Yourself Actions

1. Purchase **programmable thermostat**- turn down heat/AC during day and at night
2. **Retire second refrigerator/freezer** (Cut \$10-25/month)
3. Pull down **window shades** during summer days
4. Put computers, TVs, stereos on **power strips** and turn off before bed



3 Keys to Deep Energy Savings

1. Zip up the windbreaker – **stop air leaks!**

Especially coming through attic and basement

2. Put on the sweater – **insulate!**

First make sure sweater not full of holes!

3. Inefficient Appliances – **upgrade!**

Start with water heater and then heating/cooling equipment



1. Windbreaker- air sealing

Attics & basements:

vast majority of home leakage

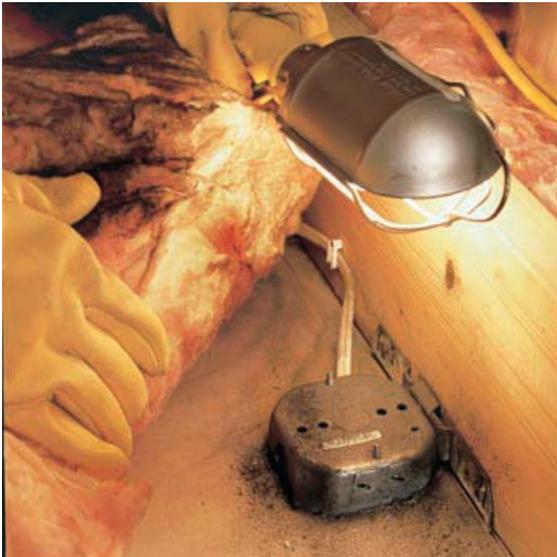
- plumbing stacks
- open walls without top plates
- chimneys
- attic kneewalls
- recessed lights
- attic hatch
- basement sill plate

Windows & Doors < 20%

Source: Michael Blasnik, M. Blasnik & Associates, 1/13/11



Windbreaker- air sealing



Dirty Insulation- sign of air leaks



Caulk to stop the leaks!



Use foam to fill large gaps

Replacement Windows? Rarely Cost Effective



Honeycomb Shades



Insulated Shades



WEST
HARTFORD
CLEAN
ENERGY
TASK FORCE



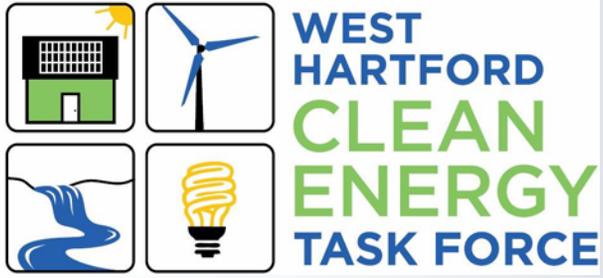
Windbreaker: Storm Windows



Exterior

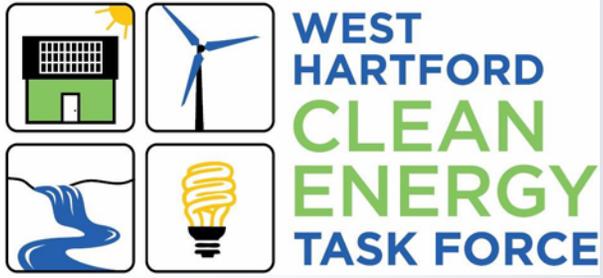


Interior



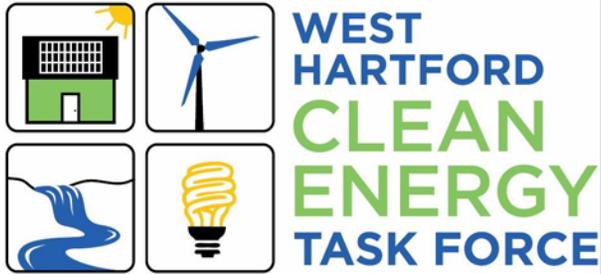
What's wrong with this picture?





Air sealing & Insulation- it really works!





Energy Priorities:

1. Zip up the windbreaker – **stop air leaks!**

Especially coming through attic and basement

2. **Put on the sweater – insulate!**

After you make sure sweater not full of holes!

3. Inefficient Appliances – **upgrade!**

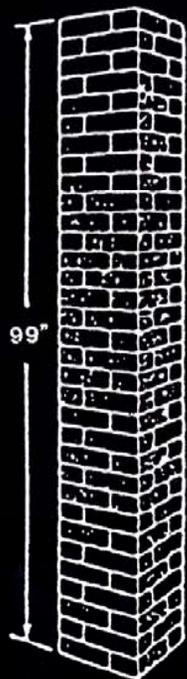
Start with water heater and then heating/cooling equipment



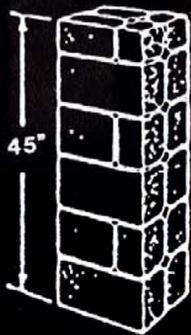


**WEST
HARTFORD
CLEAN
ENERGY
TASK FORCE**

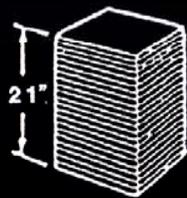
Thickness Needed to Achieve R-19



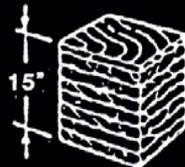
**Brick or
Plaster**



**Concrete
Block**



**Gypsum
or Plaster
Board**



Wood



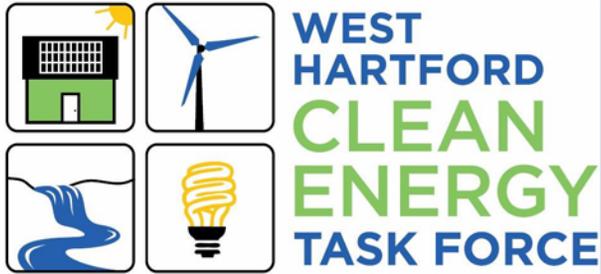
**Fiberglass
Insulation**



**Extruded
Polystyrene**



Polyurethane



Insulation Pros and Cons

Foams

- + most effective insulator
- + also provides air barrier
- requires skilled installer
- petrochemicals can offgas

Cellulose

- + Non-toxic, recycled paper
- + Better insulator than fiberglass, easy to install
- Can settle over time, moisture damages it

Fiberglass

- + Affordable, easy to install
- does nothing to stop air movement
- moisture/gaps reduces effectiveness



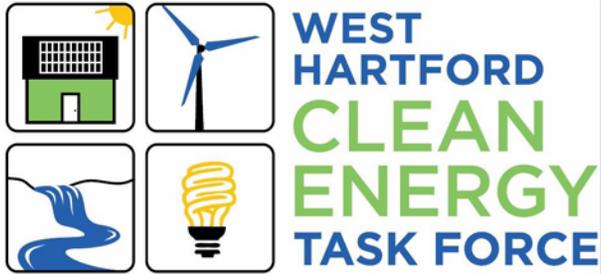


WEST
HARTFORD
CLEAN
ENERGY
TASK FORCE



Blown-in Insulation





Insulation Rebate

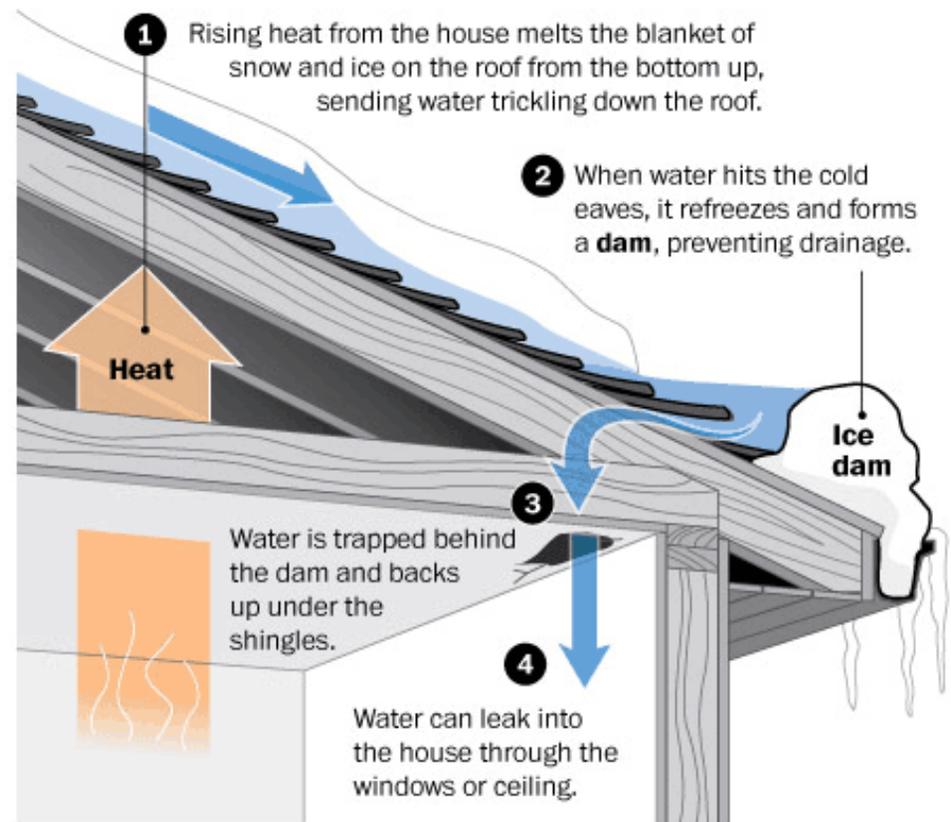
Home Energy Solutions rebate \$1.00/square foot

- Rebate can't be more than 50% of total cost (materials + installation)
- Must use licensed contractor



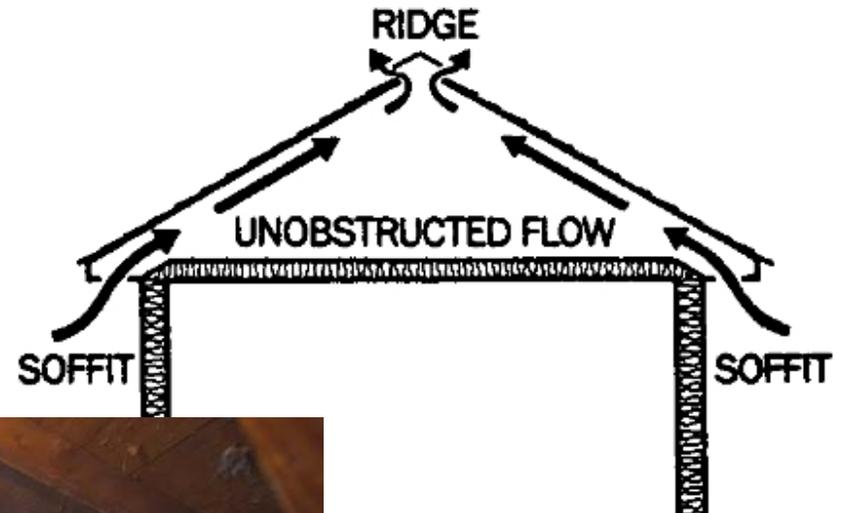
Bonus- Insulating and Sealing Stops Ice Dams

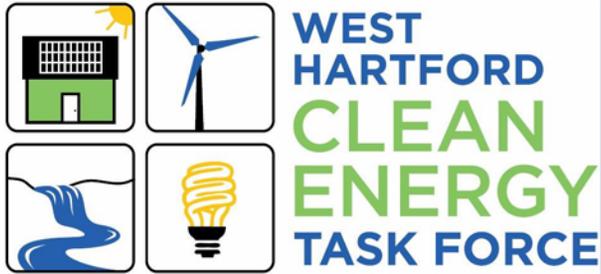
1. Heat enters attic
2. Heat melts snow on roof
3. Water freezes at edge
4. Melted snow hits dam, leaks into house



Graphic: Laura Stanton, Washington Post 2010

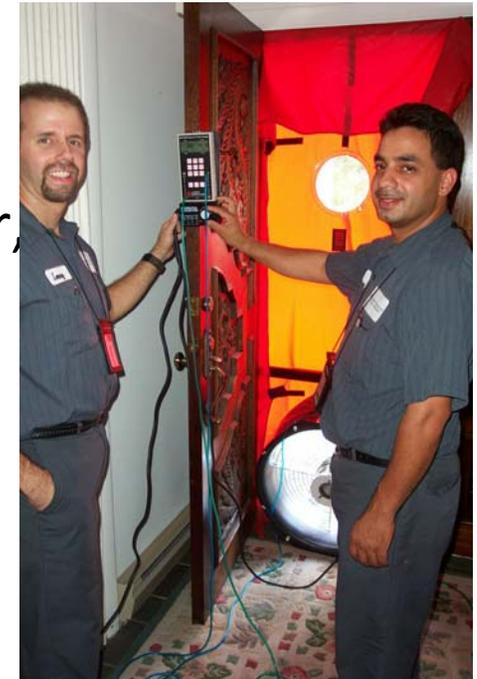
To Solve Ice Dams: Seal, Insulate, Ventilate





Home Energy Solutions (HES)

1. Gateway to deep energy savings
 - **Prioritized Recommendations**
 - **Rebates:** Appliance, Furnace, Water Heater,
 - CT Energy Loan **Financing**
2. In-house Services
 - \$75 for gas/electric; \$99 for oil/propane
 - Blower door-guided air sealing
 - Duct sealing
 - Water-saving measures
 - CFL lighting





WEST
HARTFORD
CLEAN
ENERGY
TASK FORCE

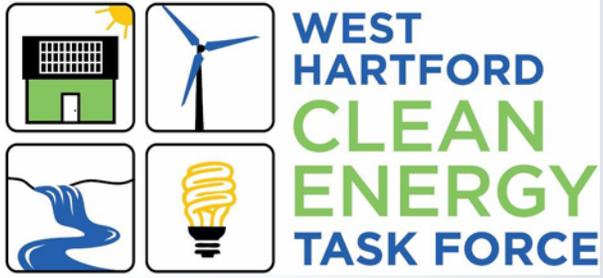


Home Energy Solutions- Income Eligible

Income Guidelines for the 2012 Fuel Season	
Gross Annual Income	
Family Size	60% State Median
Household Size – including homeowners and renters that pay separately for heat.	
1	Under \$31,815.58
2	Under \$41,604.98
3	Under \$51,394.39
4	Under \$61,183.80
5	Under \$70,973.21
6	Under \$80,762.62
7	Under \$82,598.13
8	Under \$84,433.64

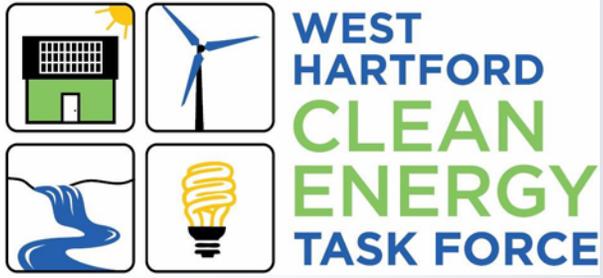
**Income chart is effective July 1-June 30 of each year.*

Free air sealing and insulation!



HES- Seal Air Leaks





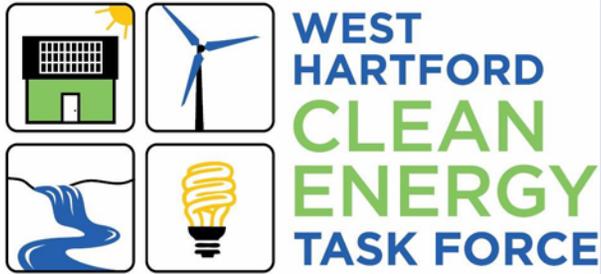
HES- Hot water pipe wrap, faucet aerator



HES includes up to 40 CFLs. On average, how much electricity do CFLs save vs incandescents?

- A. 20%
- B. 50%
- C. 75%**
- D. 95%

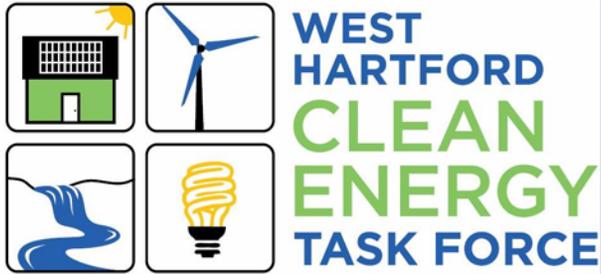




HES- Duct Blaster duct sealing

- Focuses on ducts in unheated areas of home
- Seals leaks to keep heat where you want it



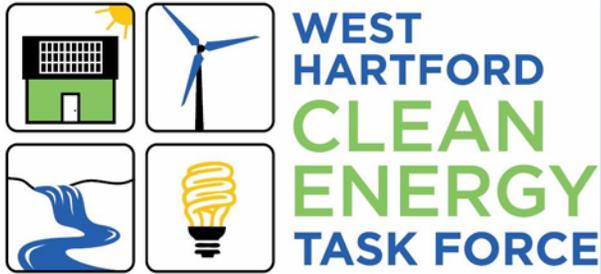


Access to Rebates and Financing

Technicians discuss measures taken, recommend improvements, offer rebates

- **Refrigerator** \$50.00 rebate
- **Freezer** \$25.00 rebate
- **Clothes Washer** \$50.00 rebate
- **Dehumidifier** \$25.00 rebate
(Replacement)
- **Insulation** \$1.00 per sq./ft.





New Insulation Loan Pilot program:

- 0% loan from \$1,000 to \$2,500
- Pilot to end June 30, 2013
- Electric, gas and oil/propane homes
- On bill repayment through CL&P
- 36 month maximum term
- Must have done HES
- No credit check! Paid electric bill on time.

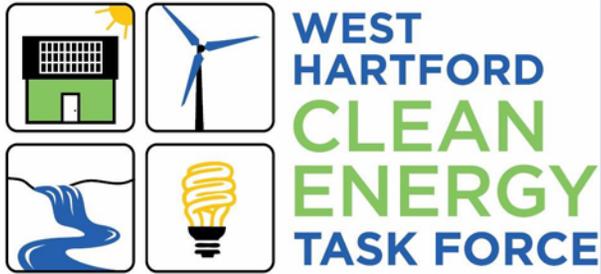
Details and contractor list:

<http://www.chif.org>



RESIDENTIAL FINANCING





HES Loan program:

2.99% loan: Insulation, Heat pump water heaters, Tankless/indirect nat. gas water heaters, Ductless heat pump (electric)

4.99% loan: Central AC, Furnace/Boilers, Windows, Geothermal, Ductless heat pumps (Gas, Oil)

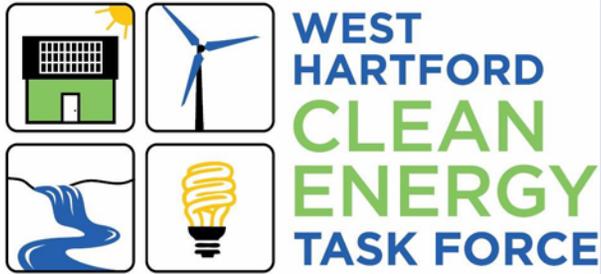
Combine 2.99% and 4.99% measures and the whole package is 2.99%!

<http://www.chif.org>



RESIDENTIAL FINANCING





HES Loan details

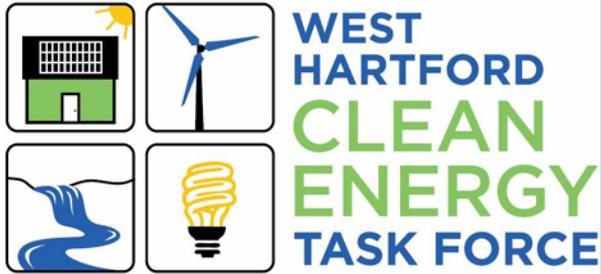
- Complete Home Energy Solutions (18 mo)
- \$2500 to \$20,000
- Up to a 10 year term
- Unsecured: not home equity loan
- Need good credit score- 640+ FICO
- Available to variety of income levels
- Work must be done by Approved Contractor

<http://www.chif.org>



**RESIDENTIAL
FINANCING**





Energy Priorities:

1. Zip up the windbreaker – **stop air leaks!**

Especially coming through attic and basement

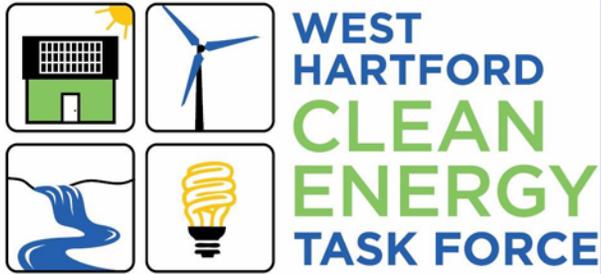
2. Put on the sweater – **insulate!**

First make sure sweater not full of holes!

3. **Inefficient Appliances – upgrade!**

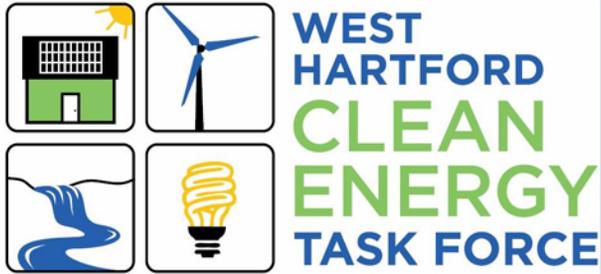
Start with water heater and then heating/cooling equipment





Appliance Strategies

- 1. Out with the old-** retire or unplug the old fridge or freezer in the basement
- 2. Air seal and insulate *first*** to save money on heating systems. A smaller (and cheaper unit) will be able to do the job
- 3. In with the new-** prepare for new hot water heater and furnace/boiler *before* they fail!



Appliances: Water heating

Water heating can account for 14%-25% of energy consumed in home

- Traditional tanks about 60% efficient
- Tankless water heaters: 82% efficiency (min. for EnergyStar)
- Condensing units 86%+
- Electric Heat Pump water heaters

Which is best for you?

Depends on how much hot water you use.
Conservation First!



Appliances: Water heating

Heat water with \$\$\$ Oil/Propane/Electricity?

1. Indirect Tank with efficient boiler
2. Electric Heat Pump Water Heater
3. Efficient Propane Tankless System
4. Solar Hot Water

Heat Water with \$ Natural Gas?

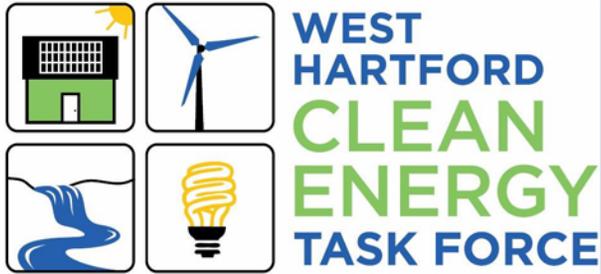
1. Energy Star tank (67%+)
2. Energy Star tankless (82%+)
3. Condensing tank (86%+)
4. Solar Hot Water



Tankless



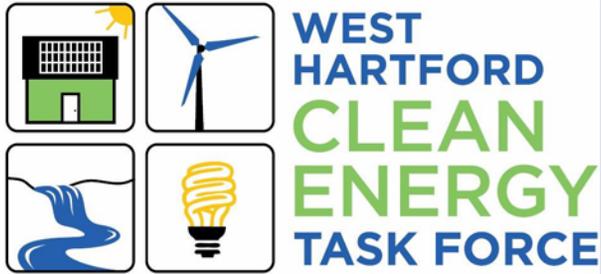
Heat Pump



Appliances: Tankless Water Heater (Gas)

- \$200 CT Efficiency Fund rebate for Energy Factor ≥ 0.82
- Rebate only for natural gas heater (not propane)





Appliances: Solar Water heater

1. CT Clean Energy Fund Rebate

www.ctcleanenergy.com/solarthermal/

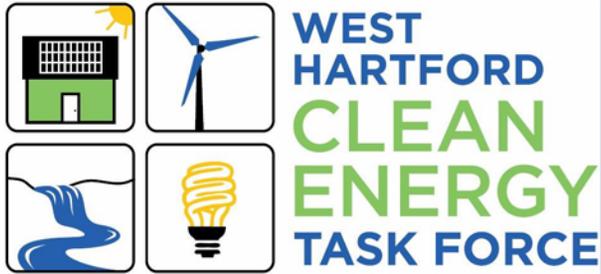
Rebate ~ 30% of system cost

Funding limited- first come first served

2. 30% Federal tax credit available through 2016

3. No state sales/property tax





Appliances: Electric heat pump water heater

- Uses ½ energy as electric water heater. Electricity used to transfer heat from surrounding air to produce heat
- Needs open basement
- \$400 Efficiency Fund Rebate for Energy Star to replace existing electric hot water heater

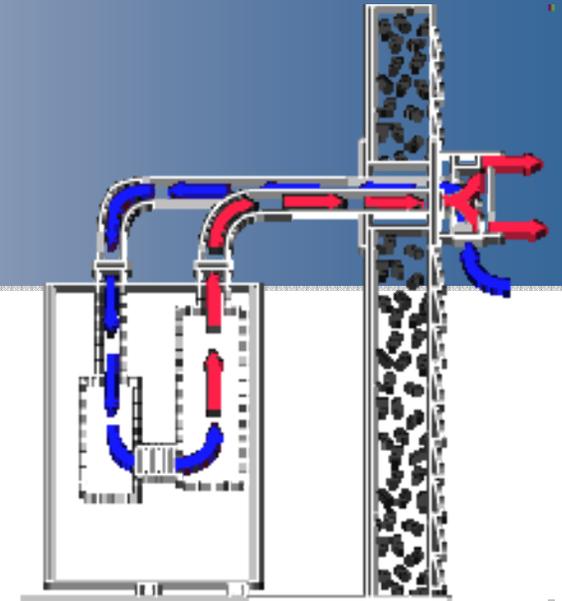
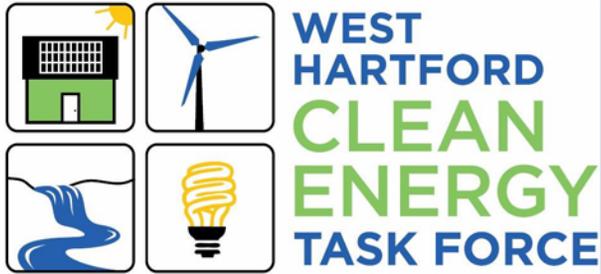


Appliances: Furnace/Boilers



Unlike people, boilers don't get better with age...

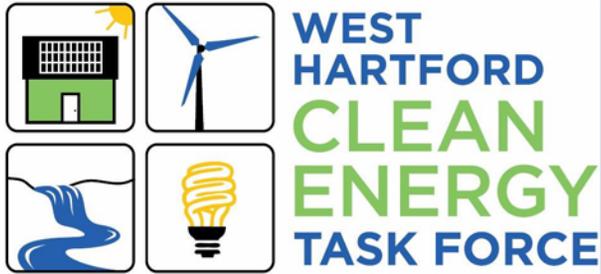




Appliances: Furnace/Boiler

Tips to choose a boiler:

- Look for **Energy Star** and **high AFUE rating**
- **Avoid “tankless coil”** water heating that runs boiler in summer. Choose indirect tank (or tankless.)
- **Look for “outdoor reset”** to adjust heat to outdoor temp.
- **Look for “sealed combustion direct-vent”** instead of sending household air up the chimney



Appliances: Furnace/Boiler

Efficiency Fund Rebates

A. High efficiency gas furnace

\$1000 rebate for 95% AFUE (through HES)

\$600 rebate (not through HES)

B. Natural gas boiler w/integrated water heater

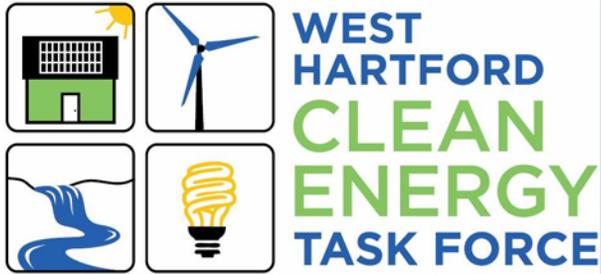
\$1500 for 90% AFUE (through HES, replace working unit)

\$750 rebate (not through HES)

C. Fuel Oil Furnace Rebate

\$200 for 86% AFUE, high efficiency ECM fan





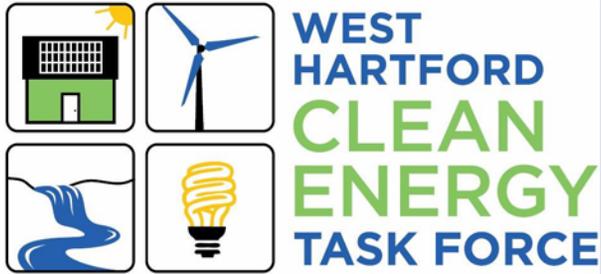
Advanced Heating /Cooling

Ductless heat pump

- Provides efficient electric heating + cooling
- Cheaper than oil or electricity for heating
- Several units can heat many types of homes
- \$250 rebate
- \$1000 rebate if home electrically heated

Must be professionally installed





CLEAN ENERGY
FINANCE AND INVESTMENT AUTHORITY

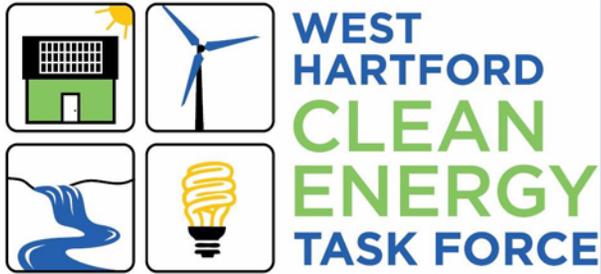
The Extra Mile: Solar power

www.ctcleanenergy.com/solarhome

- **Rebate Available**
- **Lease/financing options**
- **Federal tax credit- 30% through 2016**
- **State sales and property tax exempt**



Judy Allen Solar PV



5 High Impact Action Steps

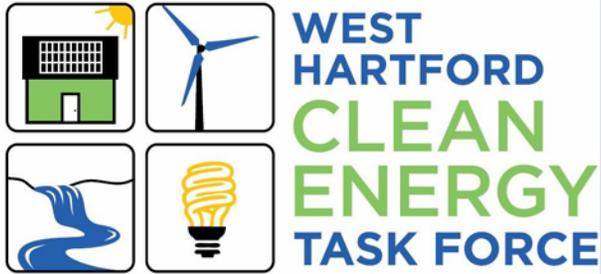
\$ Upgrade lighting to CFL and LED bulbs

\$ Replace refrigerator with EnergyStar model

\$ Seal cracks and air leaks

\$\$ Insulate attic, basement, and walls

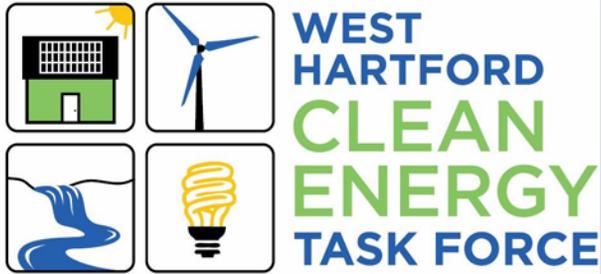
\$\$\$ Install solar power!



Together We Can

- Save money!
- Reduce our dependence on fossil fuels
- Set an example for other towns!

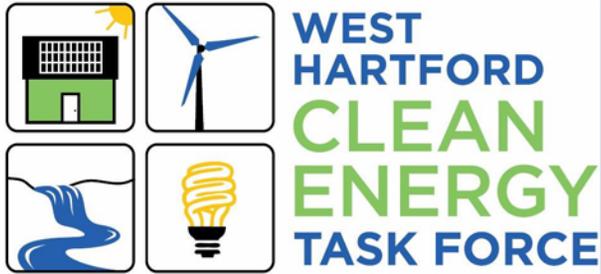




Get started tonight:

1. Sign up for Home Energy Solutions
2. Sign up for consultation for solar or insulation
3. Sign up for CT Clean Energy Options
4. Tell your Friends!





Questions?

www.westhartford.org/green

Contacts:

- Catherine Diviney 860-561-7581
catherine.diviney@westhartford.org
- Roger Smith, 860-232-6232
rsmith@cleanwater.org