

# Commonwealth Solar Hot Water Rebate Program

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NESEA BuildingEnergy11

# Massachusetts Clean Energy and Climate Plan for 2020

“A policy framework will be established to achieve a mature and self-sustaining market for solar thermal water and space heating in both residential and commercial buildings.”

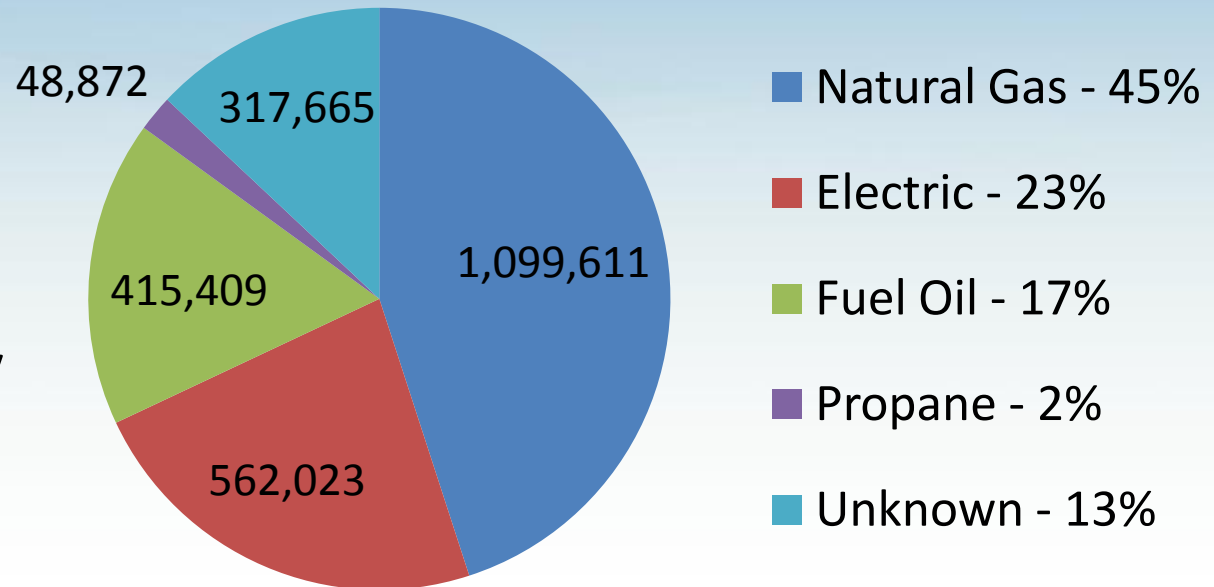
- <http://www.mass.gov/Eoeea/docs/eea/energy/2020-clean-energy-plan.pdf>

A 100,000 ton reduction in emissions due to solar thermal is forecast in the Plan.

# The market for solar water heating has plenty of room to grow in Massachusetts

•Heating water accounts for 20% of household energy consumption

•Solar water heating displaces 50-80% of the energy used to make hot water in a household.



Number of households by fuel used to heat water in Massachusetts

Source: Mass Save, Massachusetts Statewide Energy Efficiency Study, 2010

# Job Creation Potential

- Approximately 20-40 installers operating in the state currently
- Commonwealth Solar program: \$68 million (30% incentive) built PV installer base from 50 to over 200 in 2 years
- European solar thermal trade group estimates 0.81 jobs/1000 sf of collector



# Cost Savings for the End-User

Solar hot water system cost savings come from **incentives** and **decreased fuel** consumption.

## Incentives:

- Typical residential system for a family of 4-5 is \$8,000-10,000
- MA rebate plus 30% federal tax credit plus \$1000 state tax credit can reduce cost 50%

**Case Study: Residential solar thermal system for a 4-5 person family using electricity to heat water\***

Installed cost	\$9,500
Less average MassCEC rebate	(\$1,000)
Less state tax credit	(\$1,000)
<u>Less federal tax credit</u>	<u>(\$2,250)</u>
<b>Total cost</b>	<b>\$5,250</b>

Annual savings, 3500 kwh @ \$ 0.20/kwh **\$700**

Payback = 8 years

*\*Source: Cape Light Compact*

# Cost Savings for the End-User

## Fuel consumption savings:

- Paybacks differ based on backup fuel and amount of consumption

People in Household	System Size (ft <sup>2</sup> )	Natural Gas (years)	Fuel Oil (years)	Electric (years)
2-4	54	24.6	18.6	8.4
4-5	81	22.5	17.0	7.7
5-7	97	21.0	15.9	7.2
7-9	121	19.2	14.5	6.6

# MA Residential Rebate Pilot

- Pilot rebate program for 1 year, on average \$1000 for a 4-5 person household
- \$1 million budget, including audit program, building inspector training, and marketing with industry
- Open to displace all fuels
- Additional incentive for MA-manufactured components

# MA Rebate Structure

- Rebate in addition to state/federal tax credits, and any other rebates or loans available (e.g. Cape Light Compact, Heat Loan)
- Capped at \$3500 or 25% of total installed costs
- MA mfrs adder \$200/system

# Residential Solar Thermal Rebates in other New England States

- Connecticut Clean Energy Fund: \$275/mmbtu
- Efficiency Maine: lesser of \$1000 or 25% of costs
- New Hampshire PUC: currently up to \$2900
- Rhode Island: Currently no rebate, although loan funds available to some projects
- Efficiency Vermont: \$1.50/100 Btu/day up to 200 kBtu/day

Help us build consumer info: send to [solarhotwater@masscec.com](mailto:solarhotwater@masscec.com)

- Help us build the list of Massachusetts-manufactured components.
- Help us build the list of companies who will do installations in Massachusetts: send company name, address, phone, web/email, any relevant certifications, and whether you offer maintenance service
- Give us ideas on how to market the program