

WMLP Open Meeting

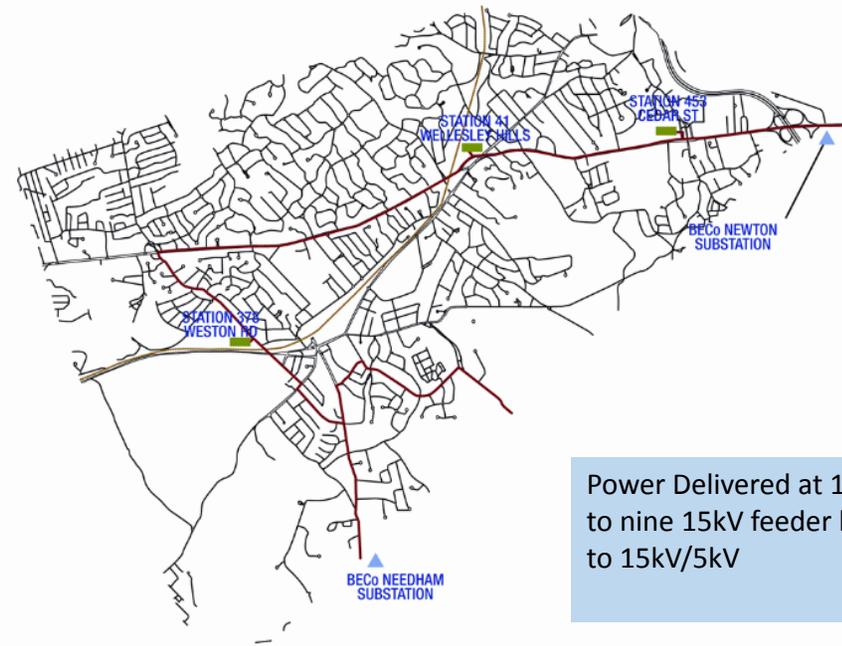
Progress in Achieving GHG Reduction Goals

June 15, 2017



Wellesley Municipal Light Plant

- Founded in 1894 to provide street lighting and police alarms
- Currently has 10,092 customers:
 - Residential = 8,900
 - Commercial = 1,100
 - Municipal = 87
 - Primary = 5
- Purchases electricity at wholesale, distributes and sells it at retail.



FY16 WMLP Financial Resources

Core Activities

Revenue: \$31,300,000

Expenses:	
Purchased Power	\$19,436,000
Transmission	4,930,000
Distribution	1,015,000
Customer Service	571,000
Administrative & General	679,000
Depreciation	3,354,000
Town Payment	1,000,000
Total Expenses	\$30,985,000
Net Profit	315,000

Non-Core Activities

Annual Estimate: \$1,000,000

- Mass Development – Devens
- Town of Acton Streetlights
- American Tower DAS Installation
- Lighttower Dark Fiber Lease
- T-Mobile DAS Installation

Note:

Non-core revenues used to fund special projects for the Town: High School/MLP solar installation, LED retrofit, residential solar rebate, etc.



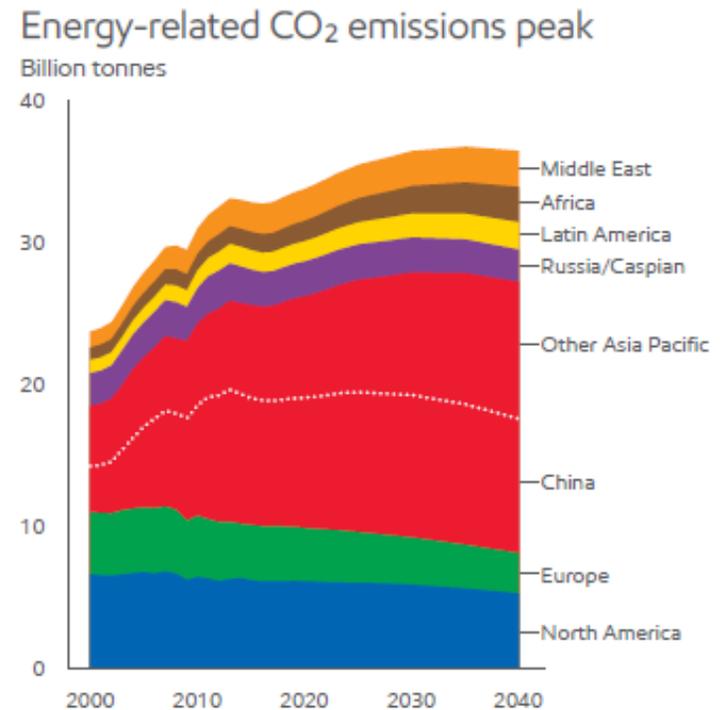
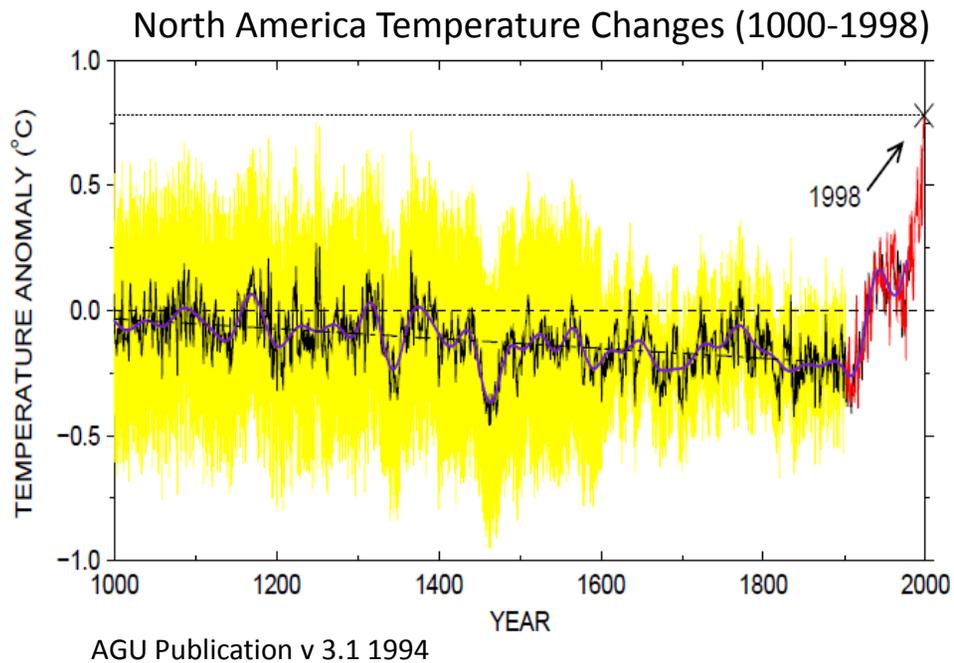
Major Municipal GHG Reduction Initiatives

WMLP Funded Initiative	WMLP Funding	Estimated Annual Savings
RDF Motors, Lighting, Heating	\$70,000	\$11,600
Municipal Lighting, Retrofits	168,700	28,100
Commercial Grade Audits	10,900	17,600
Mercury Vapor Retrofit	34,000	5,700
Phase I LED Retrofit	339,700	56,600
High School Solar	188,500	6,500
FY18 LED Retrofit	512,700	129,000
	\$1,354,500	\$255,100

Other Municipal Financial Benefits

Elimination of Traffic Signal Position	\$73,000
Fiber Network Savings	145,000
Sustainable Energy Committee Employee Funding	20,000
Municipal Electric Discount (a)	57,800
Streetlight Electric Discount (b)	75,200
Annual Town Payment	1,000,000
Additional Annual Savings	\$1,371,000
(a) Annual savings of \$424,200 compared to Eversource.	
(b) Annual savings of \$377,500 compared to Eversource.	

Global Warming and Greenhouse Gases (GHGs)



The primary greenhouse gases in the earth's atmosphere are **water vapor, carbon dioxide, methane, nitrous oxide** and **fluorescent gases, greenhouse gas (GHGs)**. The most dominant GHG is CO₂ (76%). They create a greenhouse effect that causes global warming.

Various Options to Reduce GHGs

Improve Energy Efficiency

- Increase power generation efficiency
- Increase efficiency of appliances, vehicles, light bulbs
- Invest in more efficient sub-transmission and distribution infrastructure
- Invest in cost-effective peak reduction technologies (Smart Grid, battery storage, demand response)
- Fund municipal conservation initiatives (lighting retrofits, High School solar, energy audits)
- Fund residential conservation initiatives (home energy audits, appliance rebate, 'Power to Save')

Increase Renewable Energy Generation



Solar power



Wind power



Hydroelectric



Micro Hydro



Biofuels



Geothermal

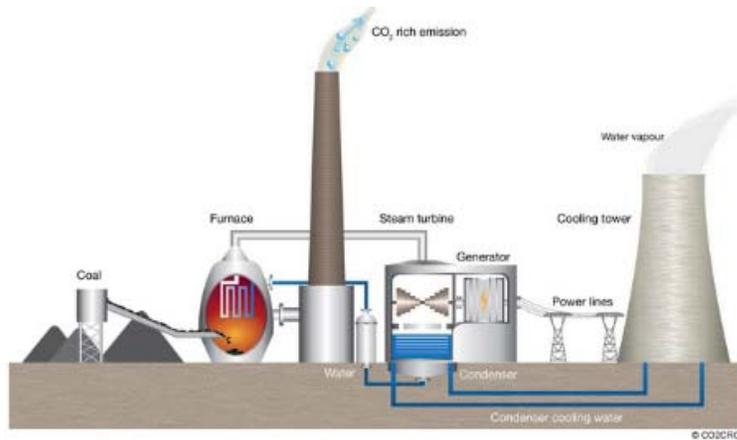


Tidal power

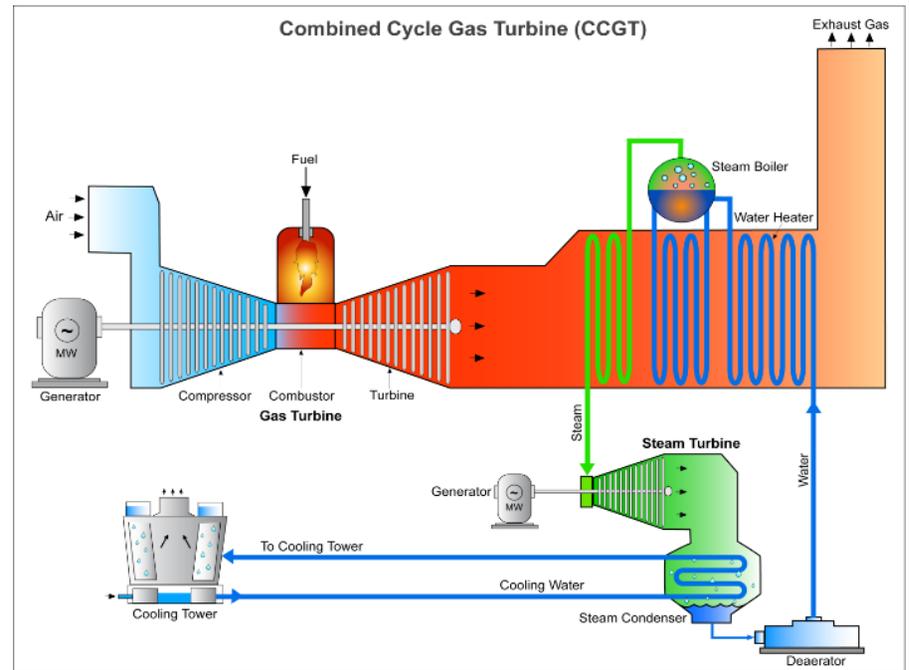


Biomass

More Efficient Power Generation with Natural Gas



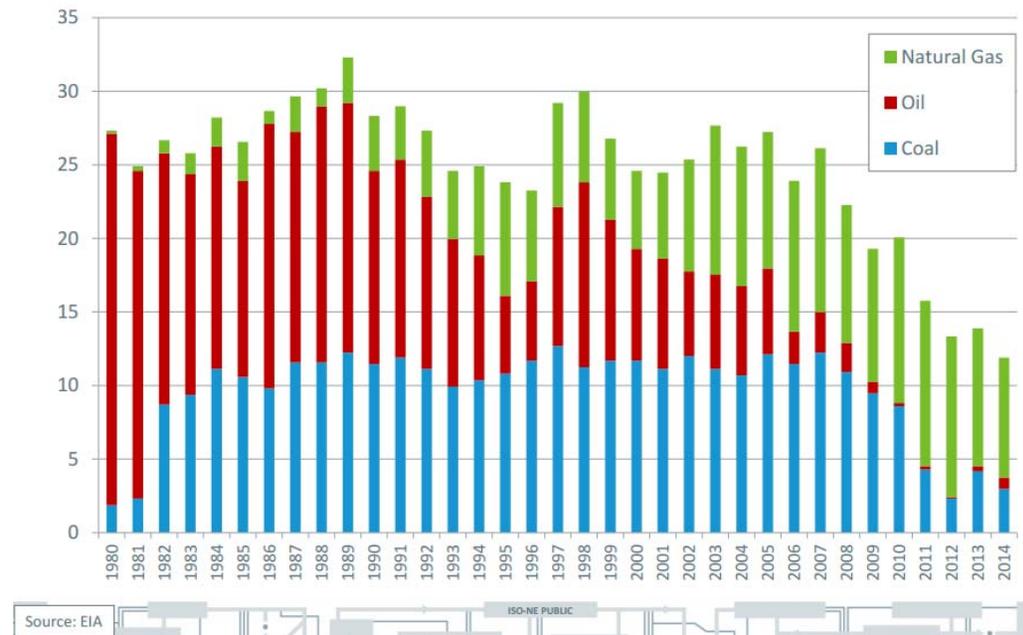
Coal Fired Steam Turbine Plant
35% Efficient



Combined-Cycle Gas Turbine Plant
56% Efficient
43% less CO₂

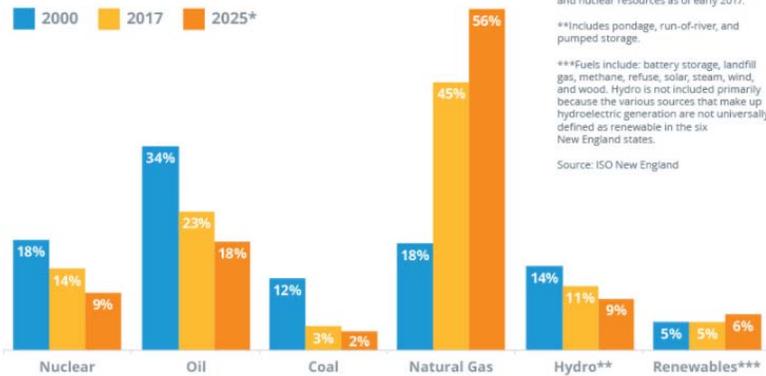
Massachusetts Reduction in CO₂ Emission from Fossil Fuel Power Generation (Million short tons per annum)

- Since 2007-14 the CO₂ emissions fell from **26 to 12 million short tons per annum**.
- This has occurred by shutting down oil and coal fueled plants and replacing them with CCGT.
- This means that the CO₂ emissions of the WMLP's purchased power **portfolio** has dropped by more than **60%** in the last 10 years.
- With more plant closing the CO₂ emissions will drop to 9.5 million short tons per annum by 2020



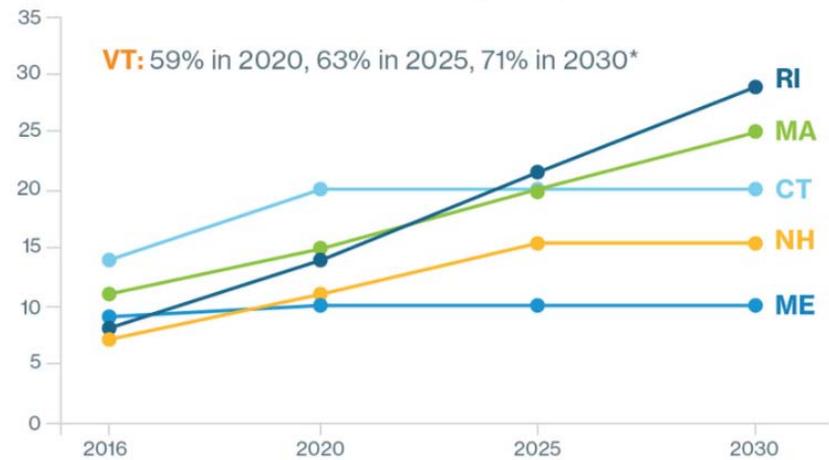
Renewable Energy Contributions to NE Power Supply

Percent of Total System Capacity by Fuel Type



State Renewable Portfolio Standards Are Rising

Class I or new renewable energy resources (%)



*Vermont's standard recognizes new and existing renewable energy and is unique in classifying large-scale hydropower as renewable.

Source: ISO New England

Wellesley Municipal Light Plant Portfolio
Power Supply (Megawatt-Hours)

	Fiscal Year 2016		Calendar 2018 projected	
	MWH	Percent	MWH	Percent
Brown Bear Hydro	6,789	2.8%	6,789	2.7%
New York Hydro	10,880	4.4%	10,880	4.3%
Granby Landfill	2,721	1.1%	2,721	1.1%
Spruce Mountain Wind	7,868	3.2%	7,868	3.1%
Saddleback Mountain W	6,536	2.7%	6,536	2.6%
Canton Mountain Wind			7,175	2.8%
Other MWH	210,704	85.8%	210,704	83.4%
Total Portfolio	245,498	100.0%	252,673	100.0%

Renewable Energy Certificate History

	Calendar Year					Total
	2012	2013	2014	2015	2016	
Spruce Mountain Wind	1,876	7,276	7,569	8,043	8,205	32,969
Saddleback Mountain Wind			76	3,229	6,679	9,984
Total RECs Purchased	1,876	7,276	7,645	11,272	14,884	42,953
Less: RECs Retired for VREP	(2,697)	(8,075)	(8,088)	(7,910)	(7,619)	(34,389)
Net (Purchase) Sale	(821)	(799)	(443)	3,362	7,265	8,564
\$/REC	\$62.50	\$64.00	\$50.00	\$46.25	\$16.25	
MLP (Cost) Revenue	(\$51,313)	(\$51,136)	(\$22,140)	\$155,493	\$118,056	\$148,950

Voluntary Renewable Energy Program

- Residents can voluntarily sign up to pay more to have their power purchased from renewable sources
- We satisfy their commitment either by actual purchases or by purchasing RECs
- As of right now, we actually purchase 4X more renewable than required to satisfy VREP
- 933 total residents are signed up
- 137 residents are signed up at 50%
- 138 residents are signed up at 100%

Homeowner Conservation

- Energy Audits
- Appliance Rebates
- More Power to Choose Program
 - One- time rebate for solar installation
 - 100% Net Metering

Municipal Conservation

- Energy Audits and Engaging Expertise
- Solar Panel Installation
- LED Lighting Retrofit

Recent Proposed Changes in Mass DEP Regulations

- Under the **Global Warming Solutions Act** (GWSA), the Mass DEP was to promulgate regulations requiring electric utilities to purchase power from renewable sources.
- the DEP only set '**aspirational targets**'.
- In a law suite the MSJC ruled that the MDEP *"shall promulgate regulations establishing a desired level of declining annual aggregate emissions limits"*
- It did so in a set of "Clean Energy Standards" and included, for the first time, Municipal Light Plants in the mandate as being subject to the ruling.
- To retain **local control** and avoid being subjected to the jurisdiction of the Mass DEP it submitted two sets of comments, one set with other Municipal Light Plants, to the Mass DEP stating that they should be exempted from the ruling of the MSJC
- The filing were submitted at a public hearing in February 2017.

So Where Are We?

- **“We largely share the same goals,**
- [but it’s] how we hold ourselves accountable on reaching those goals.”
- Regina LaRocque June, 14, 2017

So Where Are We?

- “Provide the community with specific information on the sources of energy supply purchased by the MLP, including details about current renewable energy purchases, the sale of RECs, and the yearly carbon emissions attributable to MLP electricity purchases for years 2007 through 2016.
- Provide the community with details about actions taken, or planned, to support the goal established by Wellesley Town Meeting to reduce Town-wide carbon emissions 25% below 2007 levels by 2020.