



**SIERRA CLUB**  
MASSACHUSETTS

# Local & State Leadership on Climate Change in the Trump Era



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Framingham, Mass  
JANUARY 20, 2018

# Sierra Club

- Founded by John Muir in 1892
- 63 chapters
- 75,000 members and supporters across Mass.

## Mission

- To explore, enjoy and protect the planet;
- To practice and promote the responsible use of the earth's ecosystems and resources;
- To educate and enlist humanity to protect and restore the quality of the natural and human environment;
- To use all lawful means to carry out

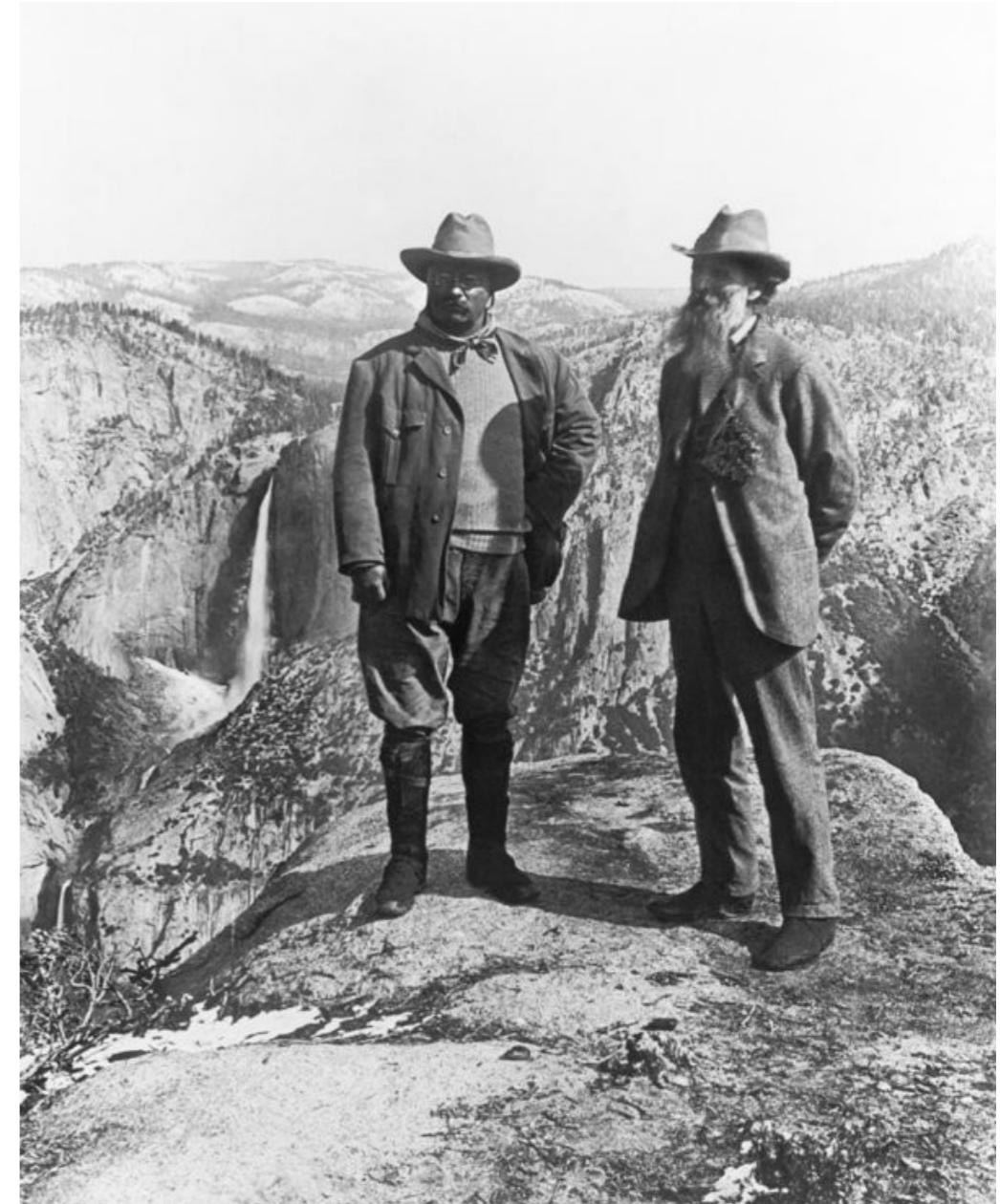


# Sierra Club, cont.

- John Muir took President Theodore Roosevelt on 3 day hiking trip in Yosemite, getting snowed on in their tents, to persuade him to set aside more land aside for national parks.
- It worked. Pres Roosevelt said, "There can be nothing in the world more beautiful than the Yosemite, the groves of the giant sequoias...our people should see to it that they are preserved for their children and their Children's children forever, with their majestic beauty all unmarred."

## Legacy

- 5 National Parks
- 18 National Monuments
- 55 National Bird Sanctuaries & Wildlife Refuges



# Signature Campaign: “Beyond Coal”

## Anti-Coal Effort Aided by \$64 Million From Michael Bloomberg

By Jennifer A Dlouhy

October 11, 2017, 12:00 PM EDT Updated on October 11, 2017, 12:48 PM EDT

- 259 US coal plants retired since project began in 2010
- Massachusetts coal-free as of May 2016

“Beyond Coal has quietly produced the largest tangible outcomes of any environmental campaign in my lifetime. One key to its success has been that it not only took Bloomberg’s money but also adopted some of his relentless business discipline. It is working methodically, from a comprehensive spreadsheet of plants, each plant with its own description, its own identified weaknesses, and its own timeline for retirement.”

—David Roberts, Vox



# Dysfunction, denial, dereliction in Washington



Donald J. Trump

@realDonaldTrump



Following

NBC News just called it the great freeze - coldest weather in years. Is our country still spending money on the GLOBAL WARMING HOAX?

RETWEETS 742 LIKES 459



6:48 PM - 25 Jan 2014



Donald J. Trump

@realDonaldTrump



Following

The concept of global warming was created by and for the Chinese in order to make U.S. manufacturing non-competitive.

RETWEETS 24,831 LIKES 14,654



2:15 PM - 6 Nov 2012



Donald J. Trump

@realDonaldTrump



Following

Snowing in Texas and Louisiana, record setting freezing temperatures throughout the country and beyond. Global warming is an expensive hoax!

RETWEETS 428 LIKES 358



1:27 AM - 29 Jan 2014



# Dysfunction, denial, dereliction, cont.

- **Scott Pruitt** for EPA Administrator – climate denier, had sued EPA 14 times
- **Andrew Wheeler**, coal lobbyist, for Deputy Administrator
- Deputy Assistant Administrator of the Office of Chemical Safety and Pollution Prevention – **Nancy Beck**, former lobbyist for American Chemistry Council
- ExxonMobil CEO **Rex Tillerson**, Secretary of State



- Ryan Zinke**, Secretary of Interior
- Whitefish Energy, 2-person company from Zinke hometown won \$300M contract to restore power to Puerto Rico
  - Wants offshore drilling off Massachusetts

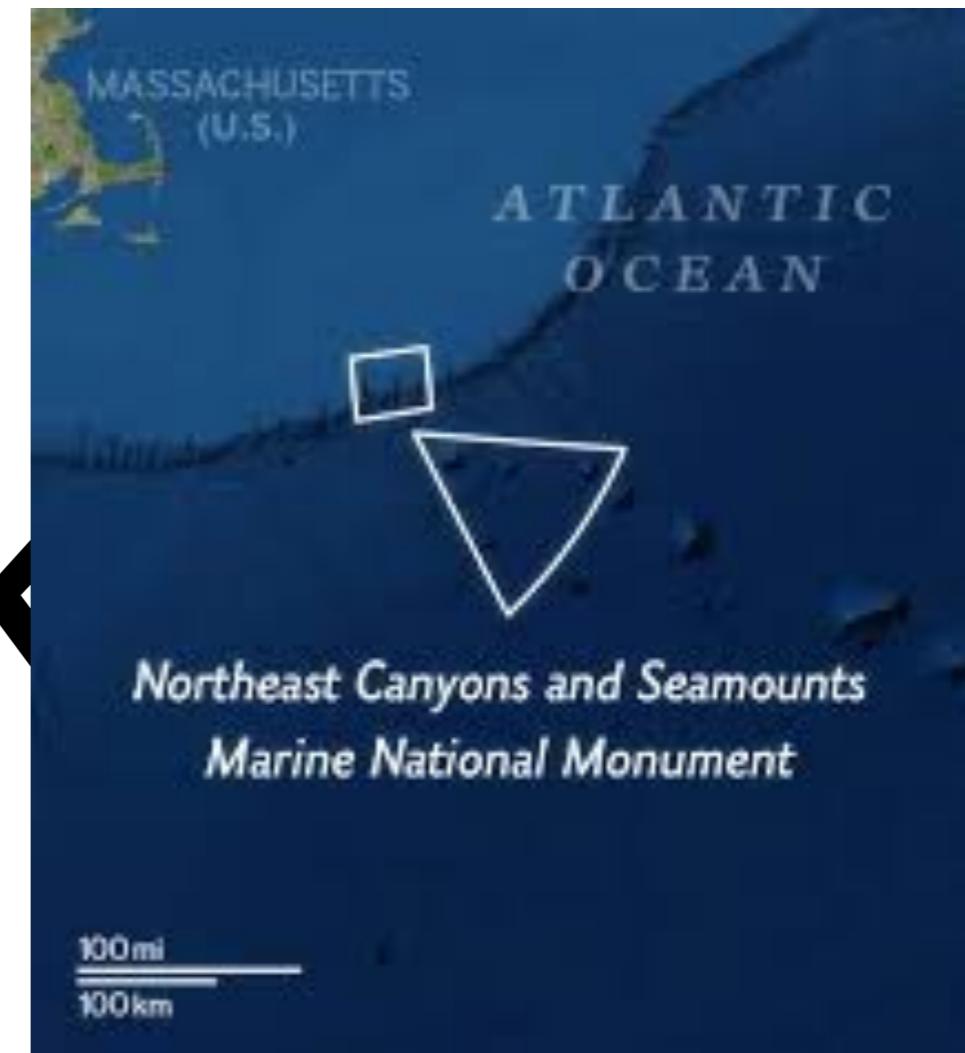
# Dysfunction, denial, dereliction, cont.

25 rules  
have been  
overruled



# Dysfunction, denial, dereliction, cont.

19  
rollback  
are in  
progress



# Dysfunction, denial, dereliction, cont.

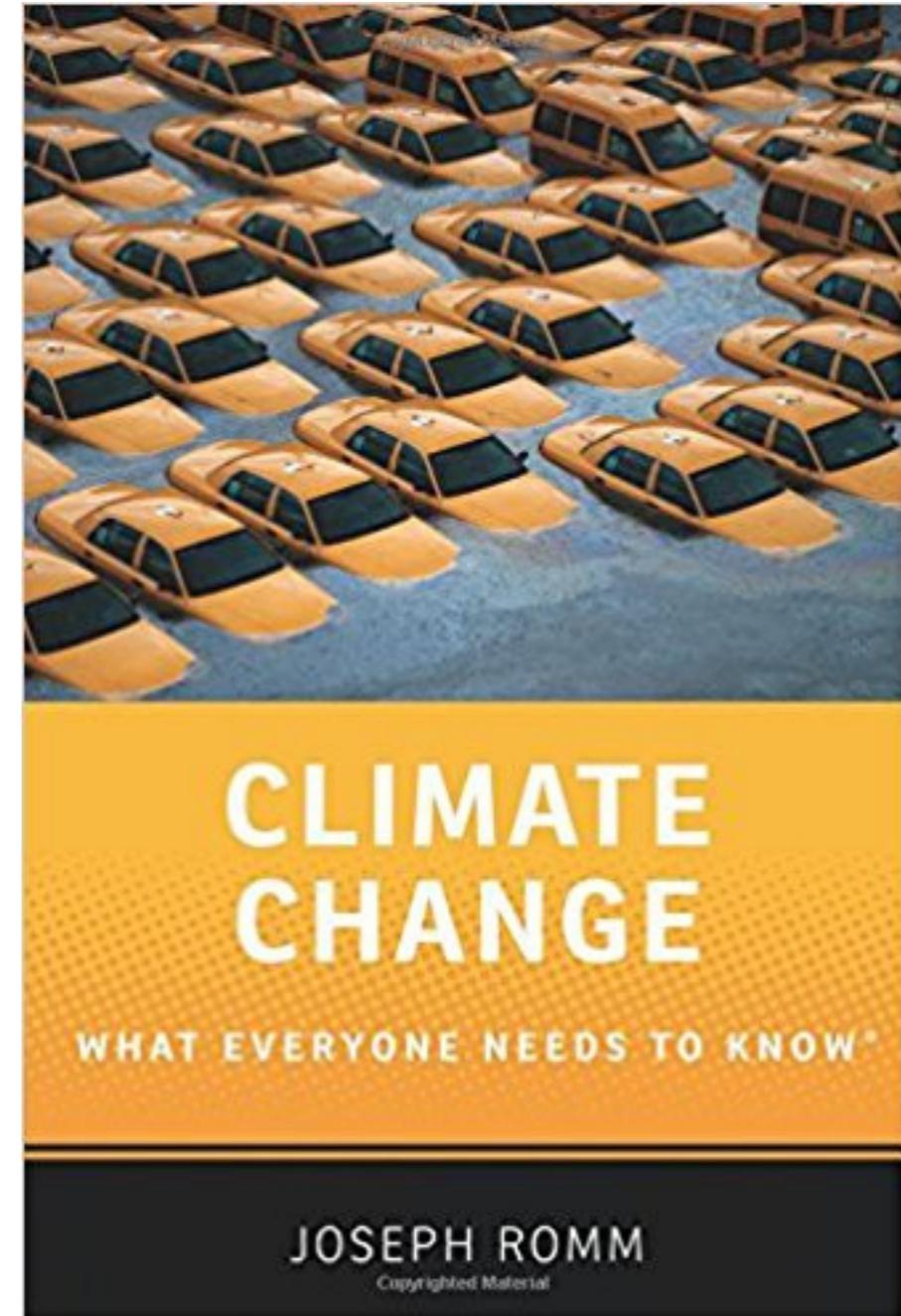
8 rollbacks are in limbo

- Methane emission limits at new oil and gas wells
- Limits on landfill emissions
- Limits on methane emissions on public lands
- Mercury emission limits for power plants
- Hazardous chemical facility regulations
- Groundwater protections for uranium mines
- Efficiency standards for federal buildings
- Rule helping consumers buy fuel-



# Climate Change 101

- Greenhouse effect makes life as we know it possible
- Sun pours out radiation; 1/3 reflected back; 2/3 absorbed
- >90% of warming goes to the oceans.
- At dawn of Industrial Revolution 250 yrs ago, CO<sub>2</sub> levels were 280ppm; now >400
- Emissions today 6X what they were in 1950
- Earth has warmed 1.5 degrees F since 1900; 1 degree since 1970



# Climate Change 101, cont.

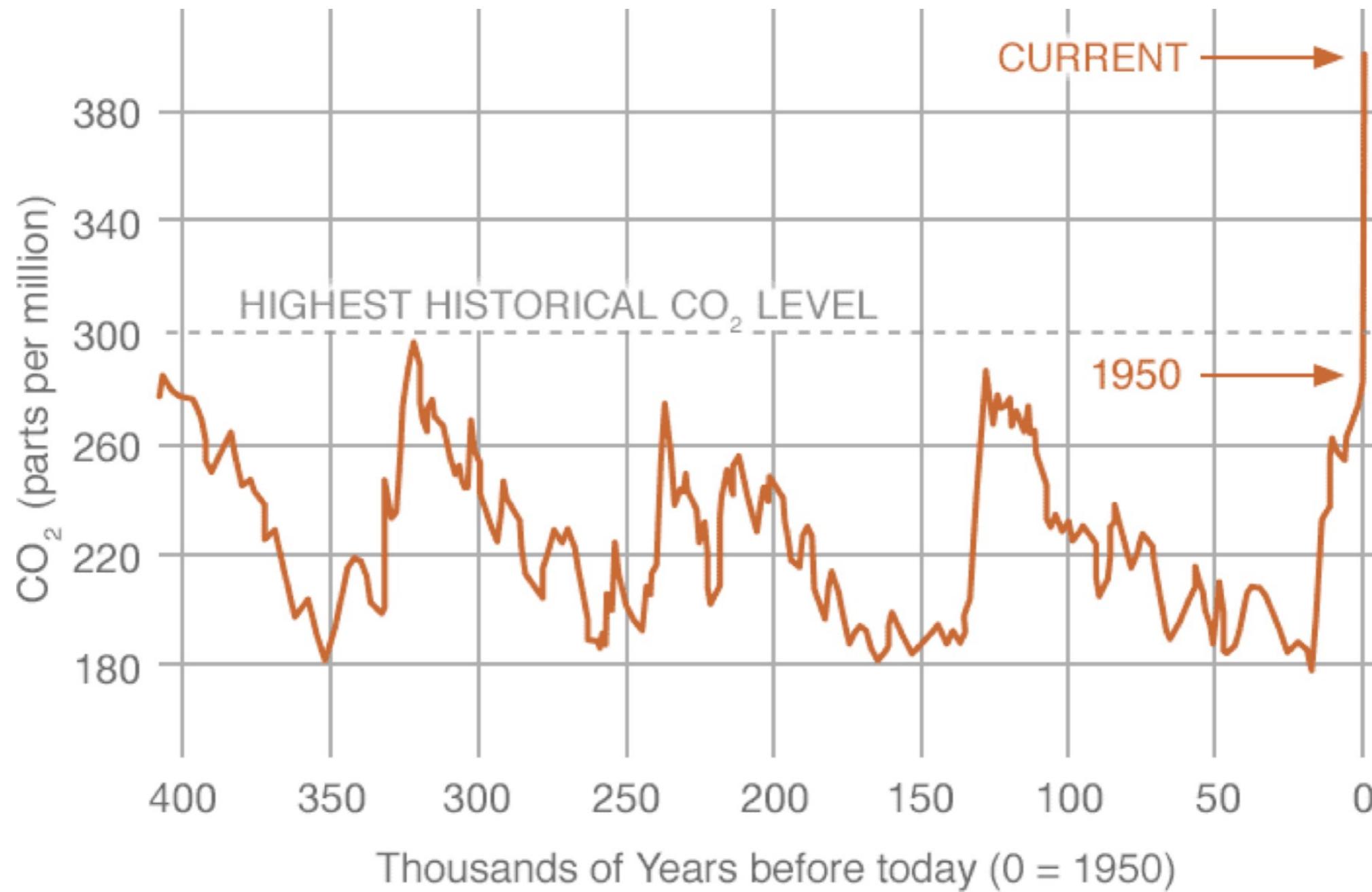
## *Why does sea level rise?*

- Thermal expansion—raises sea level bc water expands as it warms—this is half the sea level rise of last 100 yrs
- Changes in groundwater storage—being pumped out faster than returned, ends up in oceans
- Glacier ice loss—melting mountain glaciers end up in ocean instead of trapped on land
- Greenland ice sheet is 2 miles thick, almost as big as Mexico. If melted would raise sea levels >20 feet
- Antarctic – bigger than the US or Europe, avg 1.2 miles thick. Contains 90% of Earth's ice. Would raise sea levels 200 feet if it melted. Melting from beneath. Rising sea levels may raise it, causing more melting underneath it. Losing equiv of Mt Everest worth of ice every 2 yrs.

# Climate Change 101, cont.

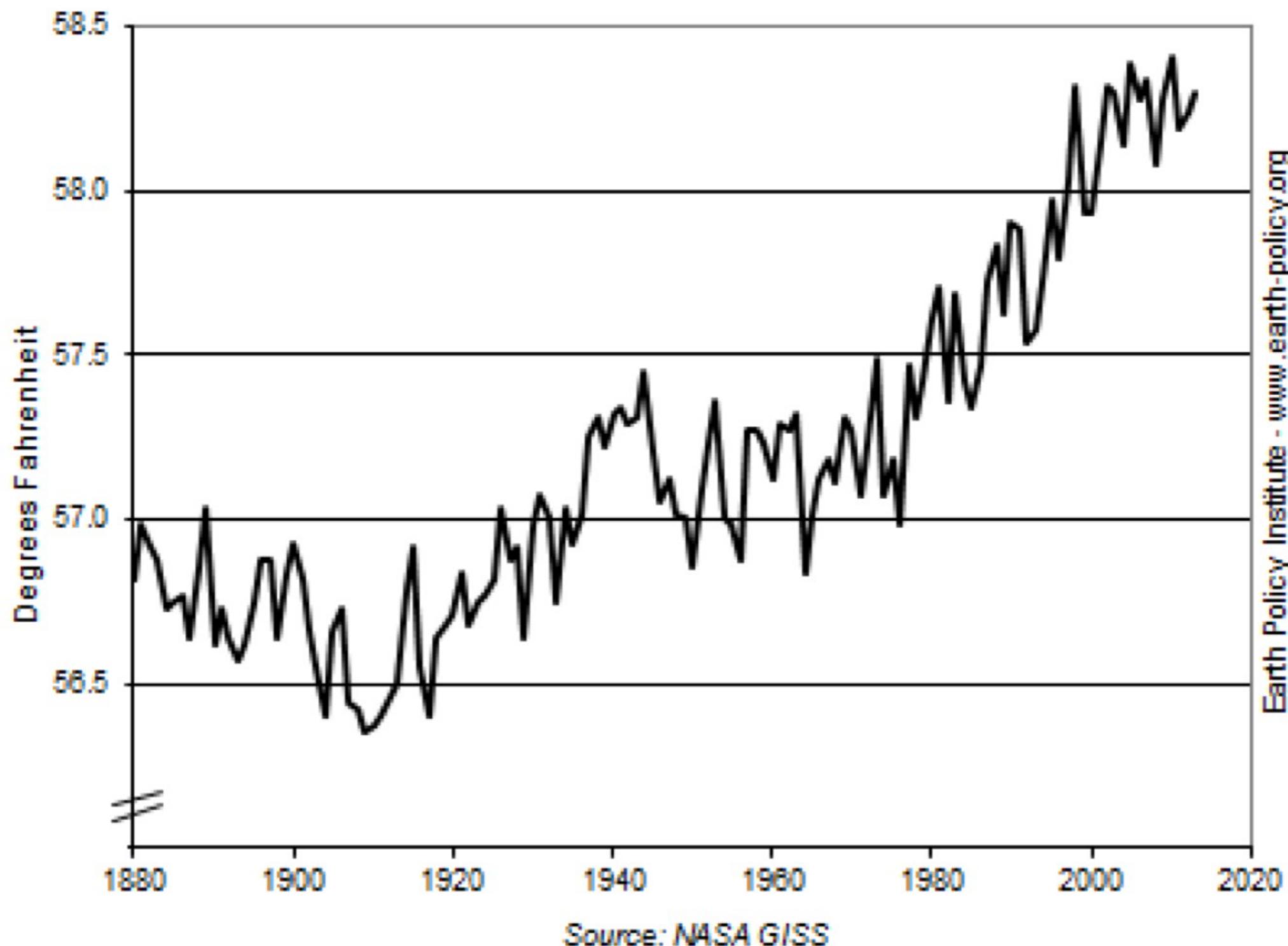
- Homo sapiens date back 200K years. Never exceeded 280-300 ppm in that time.
- Last time atmosphere was at 400ppm, no homo sapiens on planet. Climate was 3.6F--5.4F higher than pre-industrial levels; sea level was 50-80 feet higher.
- Also unprecedented is rate of change
- we are releasing Co2 into atmosphere 14K faster than nature has over past 600K years
- Amplifying feedback: as planet warms, ice melts; white ice which is reflective is replaced by blue sea or dark land which absorb more solar radiation which results in more ice melting... this is happening in Arctic causing Arctic to warm at twice the rate of the planet as a whole.
- >90% of CO2 comes from burning fossil fuels and cement making. Rest is deforestation
- methane is 9% of GHG
- methane 34X heat trapping over 100 yrs, 86X over 20 yrs
- atmospheric lifetime of methane is 12 yrs...C02 can be thousands of years
- Current rate of increase in global warming is equivalent to detonating 400K Hiroshima bombs per day, 365 days a year

# CO<sub>2</sub> level rise



# Global Warming

Average Global Temperature, 1880-2013



# Harvey, Aug 2017, ~\$200B



# Irma, Aug 2017, ~\$50B



# Maria, Sept 2017, ~\$90B



# Background: Important Climate Laws

Massachusetts Electric Utility Restructuring Act  
1997

- Established RPS

Green Communities Act (GCA) (2008)

- Amended RPS – Class I designation, indefinite 1% annual increase

Global Warming Solutions Act (GWSA) (2008)

- 25% reductions in GHG by 2020
- 80% reductions in GHG by 2050
- Currently no interim reduction targets (2030, 2040)  
**→Implies reduction level of 43% by 2030**

# Important Legal Decisions

## GWSA & Kain v. MA DEP

- GWSA “4. (a) The secretary shall adopt the 2020 statewide greenhouse gas emissions limit pursuant to subsection (b) of section 3 which shall be between 10 per cent and 25 per cent below the 1990 emissions level and a plan for achieving said reduction.”
- 3(d) “The department shall promulgate regulations establishing a desired level of declining annual aggregate emission limits for sources or categories of sources that emit greenhouse gas emissions.”
- May 2016 SJC unanimous decision – Mass DEP not in compliance with 3(d).

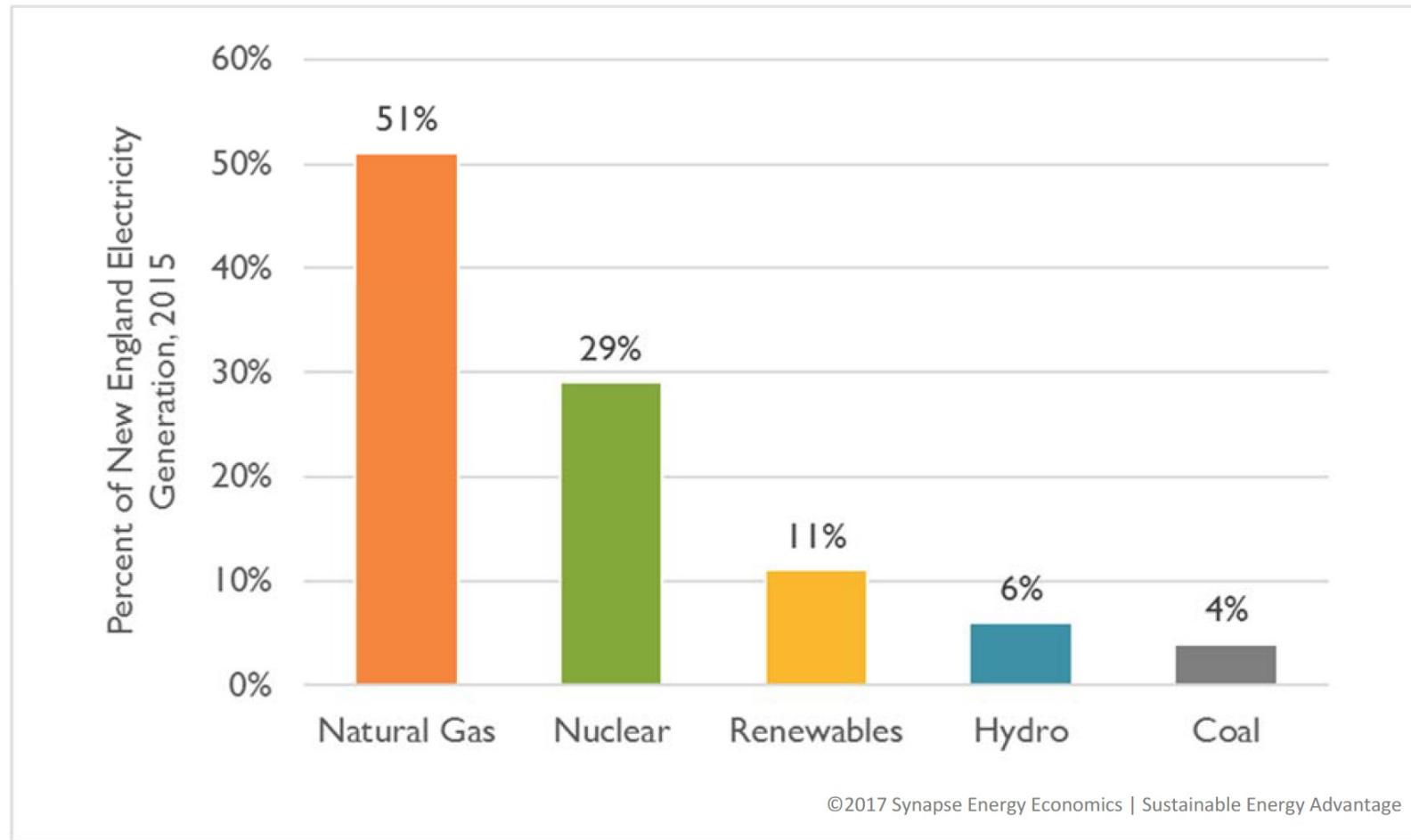
# Important Climate Laws (cont.)

## 2016 Energy Diversity Act

- Section 83C, requires Massachusetts utilities to enter into long- term contracts for 1,600 MW of offshore wind by June 2027
- Section 83D, requires Massachusetts utilities to enter into long- term contracts for 9.45 terawatt- hours (TWh) of clean energy generation by December 2022.
  - Can come from any Class I resources or Canadian hydro

# New England Energy Supply Profile, 2015

Figure 1. Distribution of New England's in-region generation, 2015

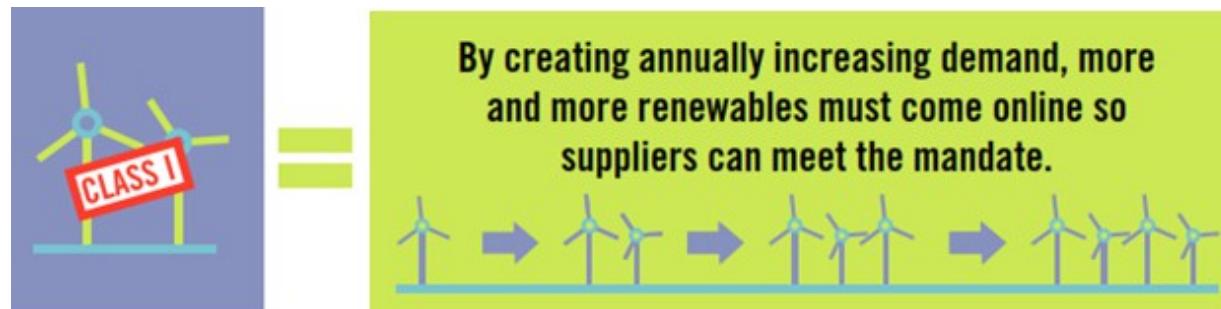


Note: In this figure and elsewhere in this document, "Renewables" includes wind, solar, biomass, and landfill gas (i.e., resources that can fulfill the "Class I" requirement under each New England state's RPS). In this figure, "Natural Gas" generation includes generation from both natural gas and petroleum that is consumed at primarily natural gas-fired power plants.

# Renewable Portfolio Standard 101

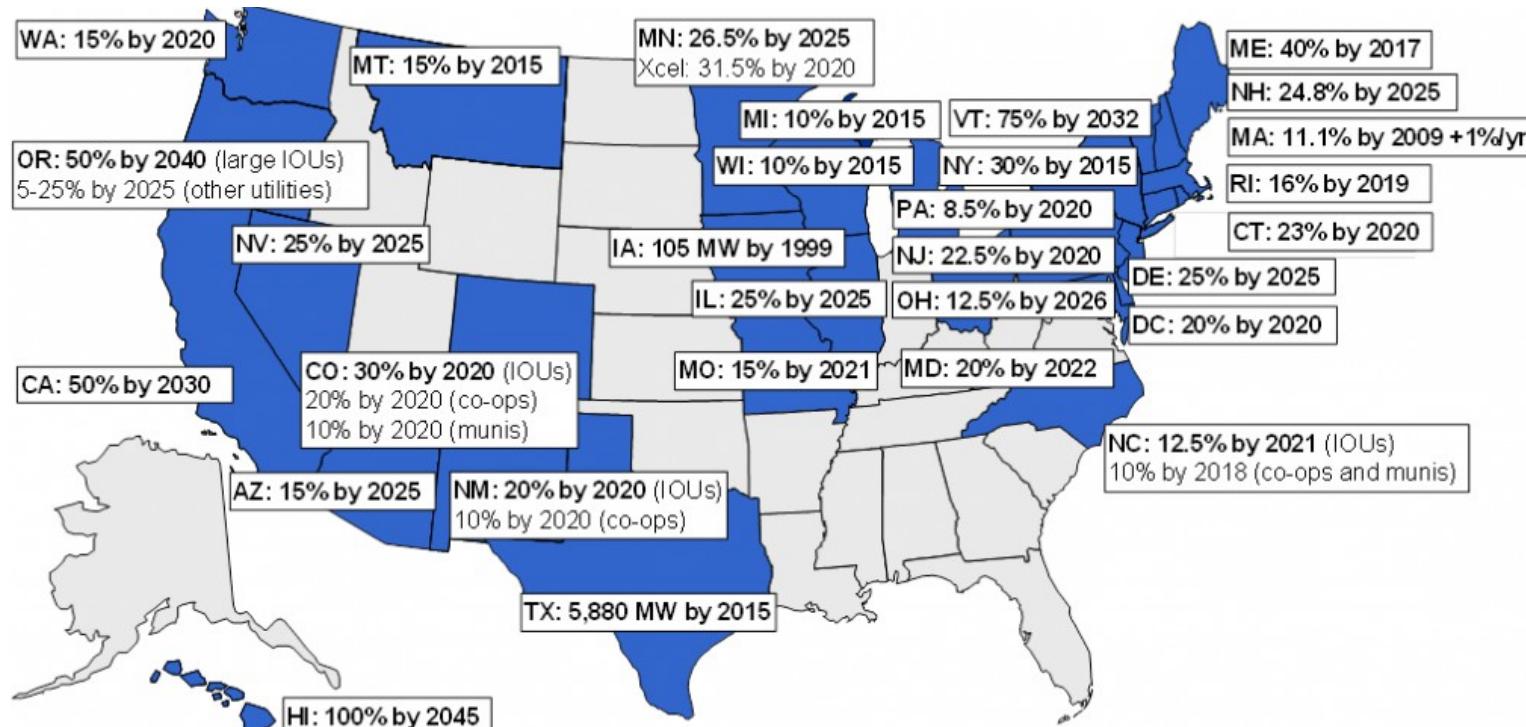
**What is an RPS?** Requirement that a minimum percentage of electricity be supplied from qualifying renewable resources.

- Promote energy diversity
- Spur local/regional clean energy job growth;
- Displaces GHG-emitting resources like natural gas (key climate strategy); and
- Stabilizes energy prices (reducing vulnerability to price volatility inherent to natural gas).



**Essential driver of clean energy development.**

# 29 states & DC have a RPS/RES in place.



Source: Berkeley Lab

Renewables Portfolio Standards Resources

Each state's Renewable Portfolio Standard is different, but Massachusetts has an especially high standard for what constitutes Class I eligible clean resource.

# Renewable Portfolio Standard 101

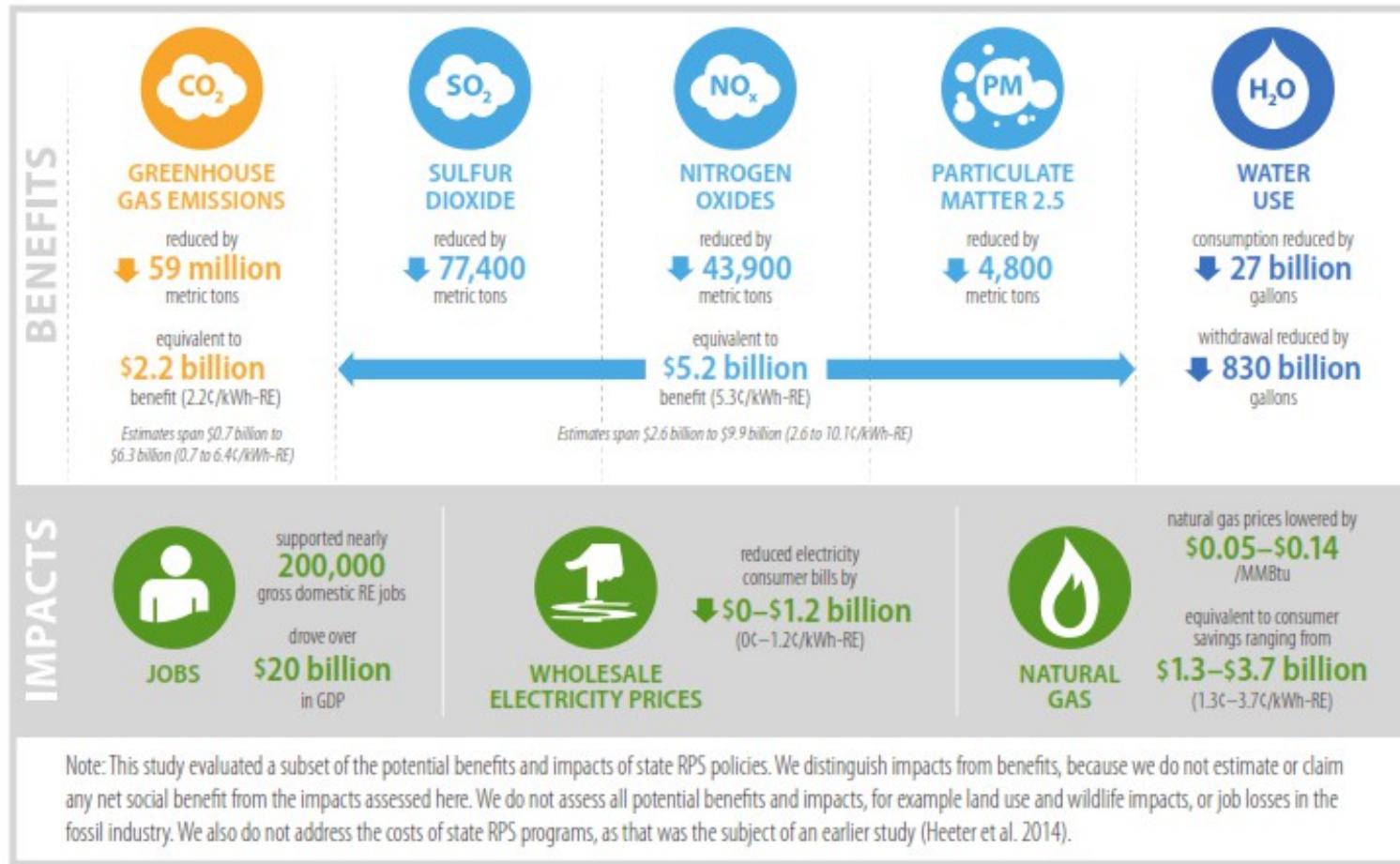
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- According to the US RPS 2016 Annual Status Report released by Lawrence Berkeley National Laboratory, 60% of U.S. renewable electricity generation and 57% of capacity since 2000 has come online because of state RPS requirements.
- Renewables have achieved cost parity with fossil fuels in many parts of the country – but not Northeast, due to cheaper natural gas.
- If it were not for the RPS, renewable energy purchases would decline during periods of natural gas surplus and it would be impossible for Massachusetts to meet the GWSA GHG reduction requirements.



# Renewable Portfolio Standard 101

## RPS benefits outweigh costs.



Source: Wiser, et al. 2016. "A Retrospective Analysis of the Benefits and Impacts of US Renewable Portfolio Standards." Lawrence Berkeley National Laboratory (LBNL) and National Renewable Energy Laboratory (NREL). <https://emp.lbl.gov/sites/default/files/lbnl-1003961.pdf>.

# RPS 101: Massachusetts' RPS

The MA  
Renewable Portfolio Standard  
(RPS) is a law.

It requires...

All electricity suppliers must  
source 12% of their supply from  
"Class I" renewables in 2017.

The percentage  
required goes up  
1% every year.

## Class I

In Massachusetts, "Class I" means "new" (built since 1997) and includes technologies like solar, wind, and anaerobic digestion.

- Municipal electric utilities are EXEMPT from RPS requirements.
  - 41 muni's supply 50 towns, representing 14% of electricity load

# May 2017 RPS Study

## An Analysis of the Massachusetts Renewable Portfolio Standard

Prepared for NECEC in Partnership with Mass Energy

May 2017



Pat Knight  
Ariel Horowitz, PhD  
Patrick Luckow  
Tyler Comings



Jason Gifford  
Po-Yu Yuen  
Edward Snook  
Jordan Shoesmith

# Strengthening the RPS

## STRENGTHENING THE MASSACHUSETTS RENEWABLE PORTFOLIO STANDARD

Visit our website to learn more:  
[www.necic.org](http://www.necic.org)

**BASE  
CASE**  
Status quo

**2.0% MA  
1.5% CT**  
RPS increase

**3.0% MA  
1.5% CT**  
RPS increase

### Creates Jobs

An increase in the RPS creates jobs across the entire regional economy that can be attributed to renewable energy development.<sup>1</sup>



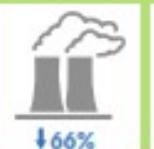
### Lowers Wholesale Electricity Prices

This protects customers from price volatility associated with the region's reliance on natural gas. The highest case scenario could provide up to \$2.1 billion in total savings.<sup>2</sup>



### Reduces Emissions

Additional renewable sources put the region on track to achieving emission reduction goals, with up to a 71% reduction of emissions within the electric sector by 2030.<sup>3</sup>



### Diversifies Energy Sources

A diverse energy supply lessens New England's dependence on natural gas for generating electricity. This helps to stabilize prices and meet our clean energy and climate goals.



## Increasing the Mass RPS by 3% annually would:

- Align policy mandates;
- Restore balance between demand for renewable energy and its supply; and
- Affirm Massachusetts' commitment to a clean energy transition.
- Maintain the desired clean energy trajectory.

# Key Takeaways from RPS Analysis

- Increasing the RPS by 3% annually and transitioning MEU's into the RPS program will drive new, incremental renewable energy development.
- Increasing the RPS creates jobs (*3%+ scenario: 37,000 cumulative jobs added through 2030, or about 3,000 jobs per year*)
- Higher levels of renewables lead to decreased wholesale energy prices (*not subject to the volatility of fossil fuels – helpful to businesses and residences alike*)
- Increasing the RPS can help meet emission reduction goals as set by GWSA
- Increasing the RPS has a moderate impact on monthly bills (*between \$0.15 & \$2 per month, relative to current RPS*)

# Clean Energy = JOBS

## MASSACHUSETTS BY THE NUMBERS



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# State RPSs: Massachusetts is falling behind.

	% Goal	Date
California	50	2030
Hawaii	100	2045
Massachusetts	25	2030
New York	50	2030
Vermont	75	2042
Maryland	25	2020
Rhode Island	40	2035
Washington, DC	50	2032



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MASSACHUSETTS

# What do I tell my Rep?

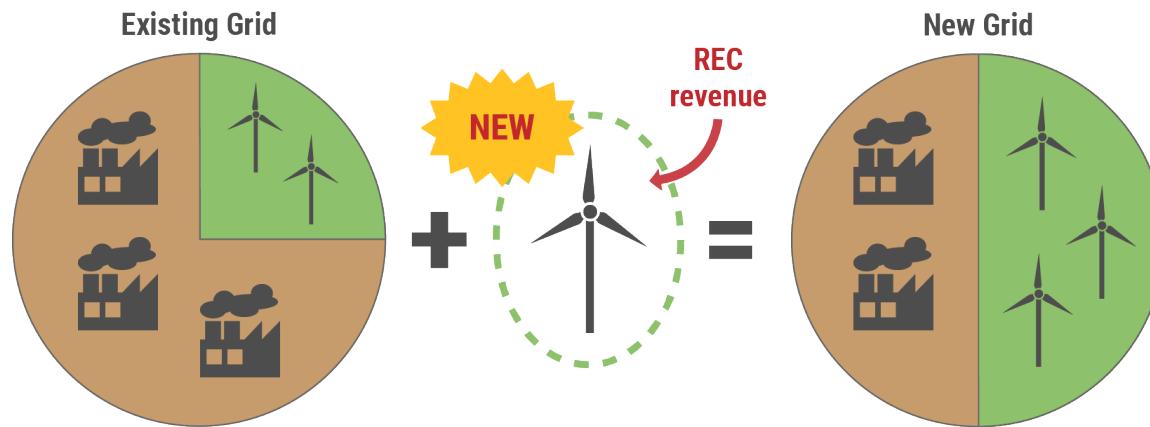
**Strengthening the RPS is necessary, achievable, and beneficial for the economy, the environment, to consumers, and public health.**

- Maintain MA's **CLIMATE LEADERSHIP** in the era of Trump
- Create **JOBS**
- Protect residents stabilizing long term **ELECTRICITY PRICES**
- Keep energy **DOLLARS LOCAL** (\$22B/year)
- Better **HEALTH** with better air quality
- Meet state **CLIMATE**



# MA RPS & GWSA Compliance

**Accelerating clean energy development in MA/New England is integral to complying with GWSA.**



- Decarbonizing electric grid is most cost effective way to reduce GHGs
- GWSA compliance requires electrification in other sectors → transportation (EVs), space heating (heat pumps)



# Climate change, closer to home

## A swath of Central Mass. is still in ‘severe drought’



1

By Maddie Kilgannon | GLOBE CORRESPONDENT FEBRUARY 15, 2017

## Preparing for a shrinking Boston

Resilience should be goal; resistance is futile



JULIE WORMSER

Mar 26, 2017

- Depending on carbon emissions, Boston is likely to experience 3.2 to 7.4 feet of relative sea level rise by 2100, with a maximum plausible level of 10.5 feet.

## Northeast warming more rapidly than most of US



214

# Climate change, closer to home, cont.

## Climate change will hit New England hard, report says



Top 10 Trends



King tides hit the Boston waterfront in October 2016.

By [David Abel](#) | GLOBE STAFF AUGUST 09, 2017

“The Northeast will experience warmer temperatures, higher seas, and greater amounts of rain and snow than federal scientists forecast only three years ago, according to a draft of a major report about climate change awaiting the approval of the Trump administration.”

# Climate change, closer to home, cont.

OPINION | KATE WALSH AND DAVID TORCHIANA

## Boston's health care sector is on front line of climate readiness

By Kate Walsh and David Torchiana | JUNE 15, 2017

Boston is the fourth most climate-vulnerable city in the United States and the eighth most vulnerable worldwide in property risk. The region could take a \$30 billion economic loss if a hurricane such as 2012's Superstorm Sandy were to come ashore here, with infrastructure at risk ranging from food and water to the MBTA and utilities.

*Kate Walsh is the president and CEO of Boston Medical Center. Dr. David Torchiana is the president and CEO of Partners HealthCare. They are cochairs of the Boston Green Ribbon Commission Health Care Working Group.*

# Climate change, closer to home, cont.

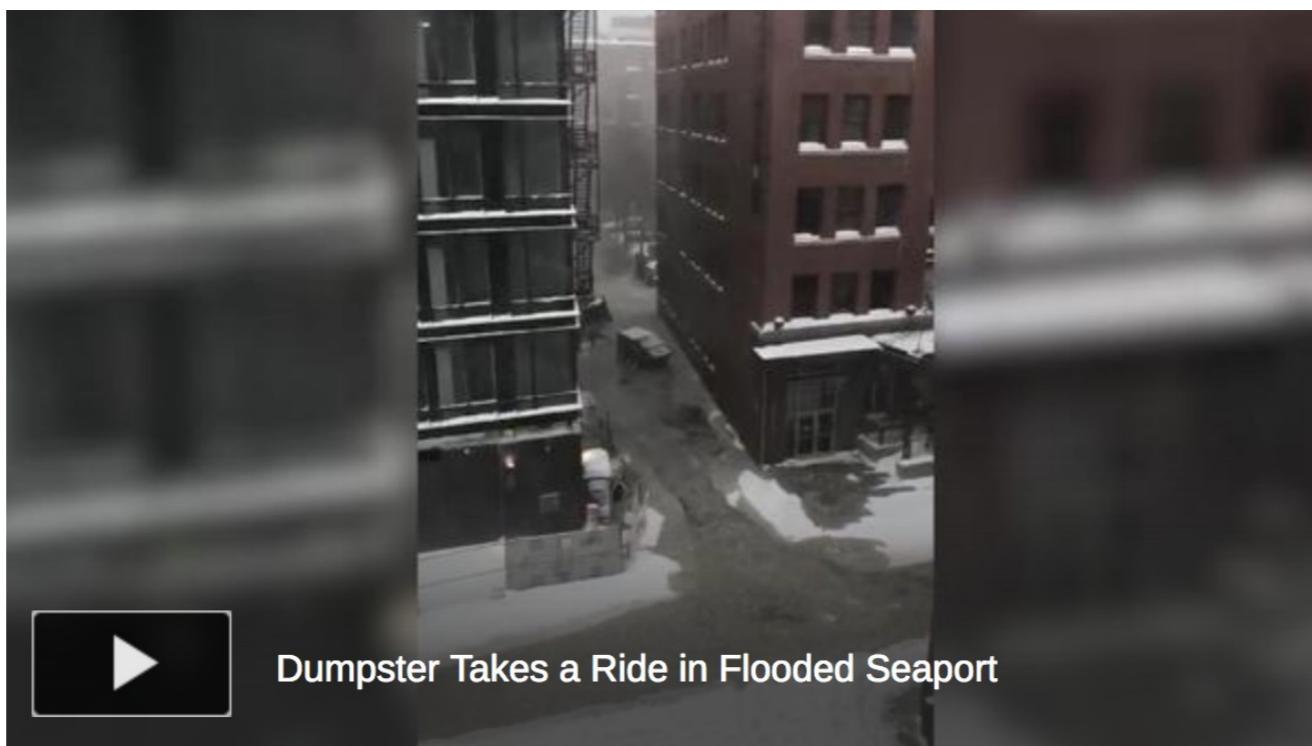
"If we got hit with a storm like this, if Harvey hit Boston Harbor, we are wiped out as a city," Mayor Marty Walsh [recently told the \*Boston Herald\*](#).



Cookie policy

More On: [Tropical Storm Harvey](#) [Mayor Marty Walsh](#)

# Climate change, closer to home, cont.



Dumpster Takes a Ride in Flooded Seaport

# Climate change, closer to home, cont.



Scituate

# MASSACHUSETTS MUST LEAD!



# Leadership is What We Do

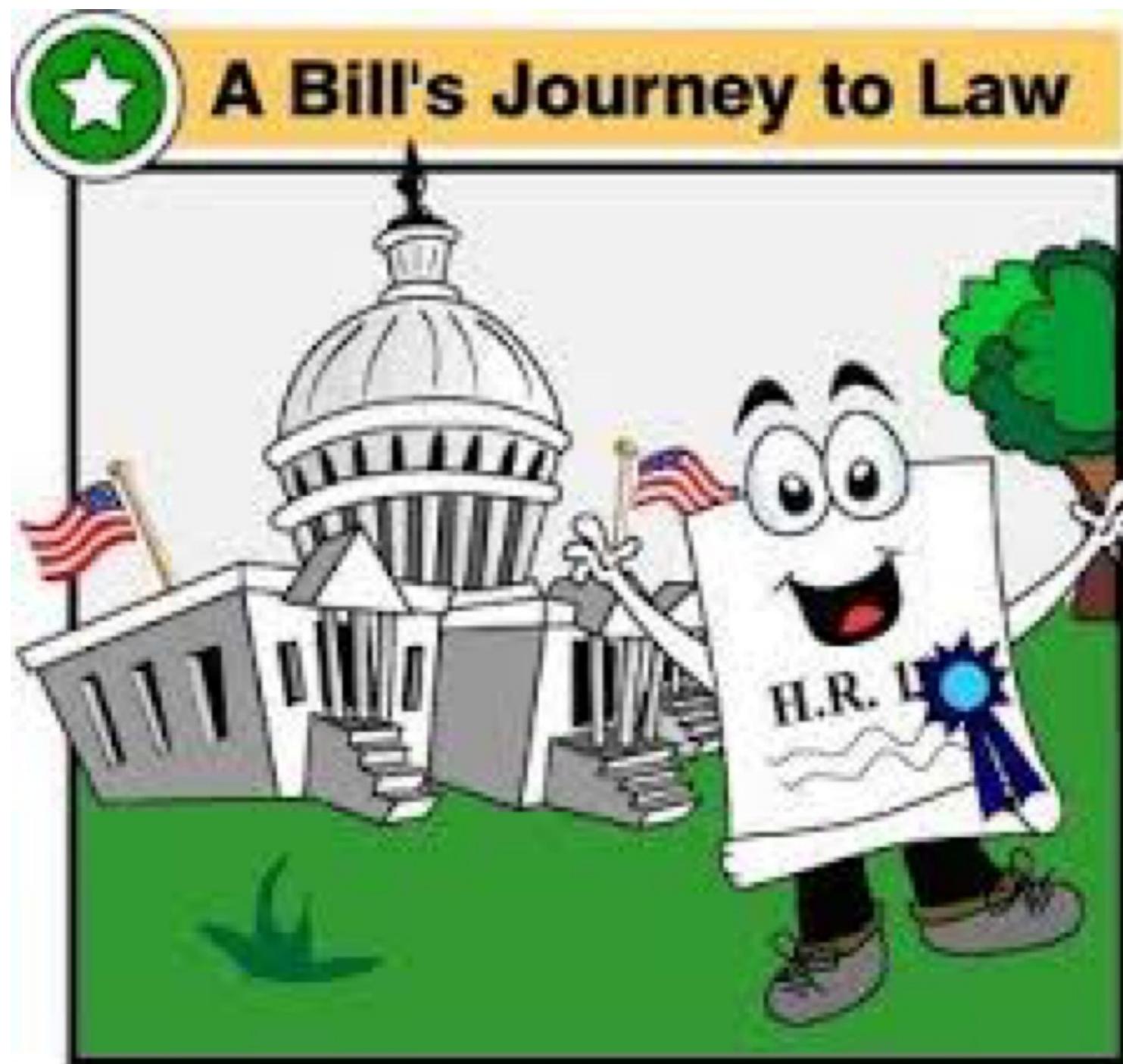
- Gay Marriage
- “Romneycare”
- Bump Stocks



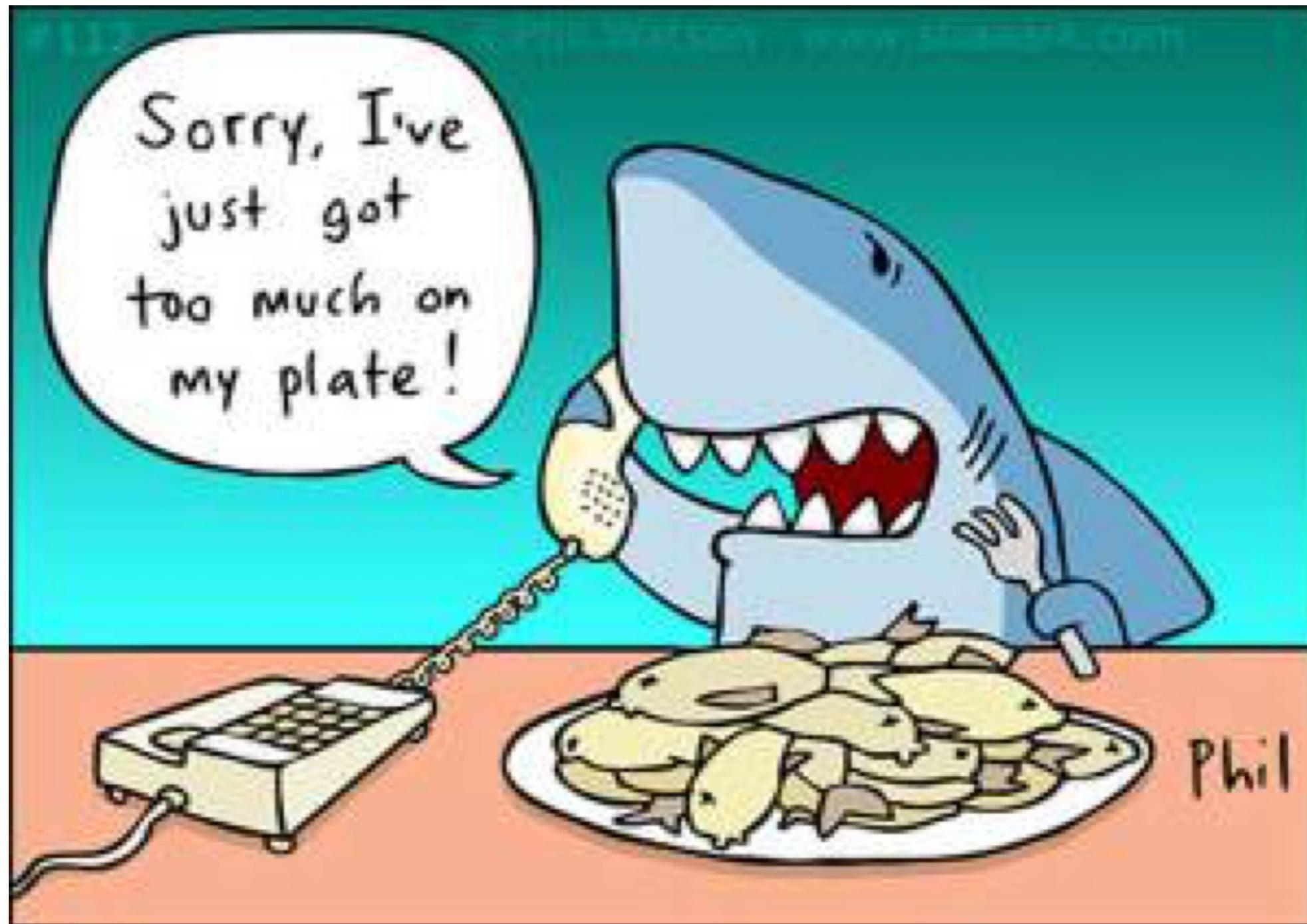
# Energy Policy: States rule!

- States have significant autonomy to chart own destiny
- States follow one another
- Massachusetts is a leader
- RGGI, 2009
- Global Warming Solutions Act, 2008
- Green Communities Act, 2008
- Green Jobs Act, 2008
- Energy Diversity Act, 2016
- Cities & Towns
  - 100% renewable commitments
  - Green Communities Designation
  - Community Choice Aggregation

# I'm Ready to Act! Now What?



# Understand Your Target Audience



# Don't Do This



# Mass. Legislature is not a democracy

- Speaker, Ways & Means Chair hold power
- State Legislature, Governor, Judiciary exempt from Open Meeting Law
- Center for Public Integrity gave Massachusetts D+ grade in 2015 State Integrity Investigation

# D+ Grade

<b>Public Access to Information</b>	GRADE: F(34)	RANK: 40 <sup>th</sup>
<b>Political Financing</b>	GRADE: A(92)	RANK: 1 <sup>st</sup>
<b>Electoral Oversight</b>	GRADE: B-(81)	RANK: 6 <sup>th</sup>
<b>Executive Accountability</b>	GRADE: D-(63)	RANK: 23 <sup>rd</sup>
<b>Legislative Accountability</b>	GRADE: D(65)	RANK: 17 <sup>th</sup>
<b>Judicial Accountability</b>	GRADE: F(56)	RANK: 27 <sup>th</sup>
<b>State Budget Processes</b>	GRADE: D(66)	RANK: 41 <sup>st</sup>
<b>State Civil Service Management</b>	GRADE: D-(63)	RANK: 16 <sup>th</sup>
<b>Procurement</b>	GRADE: B-(81)	RANK: 4 <sup>th</sup>
<b>Internal Auditing</b>	GRADE: B-(83)	RANK: 17 <sup>th</sup>
<b>Lobbying Disclosure</b>	GRADE: F(58)	RANK: 30 <sup>th</sup>
<b>Ethics Enforcement Agencies</b>	GRADE: D(64)	RANK: 13 <sup>th</sup>
<b>State Pension Fund Management</b>	GRADE: D(65)	RANK: 21 <sup>st</sup>

# Mass. unique in blocking public access to documents

EDITORIAL

## The secrets of Governor Charlie Baker



JOHN TLUMACKI/GLOBE STAFF/FILE 2017

NOVEMBER 29, 2017

“...Massachusetts continues to be the only state in the country where the governor’s office, members of the Legislature, and the judiciary all claim to be exempt from laws requiring release of public documents...

...a legislative committee that was established by the new public records law to examine those three exemptions has never met. Some seats on the 14-member commission remain unfilled, despite the panel’s original Dec. 30 deadline to produce a report.

The Legislature’s lack of urgency reflects a general disdain on Beacon Hill for transparent government — an unfortunate trait that crosses party lines and different branches of government.”

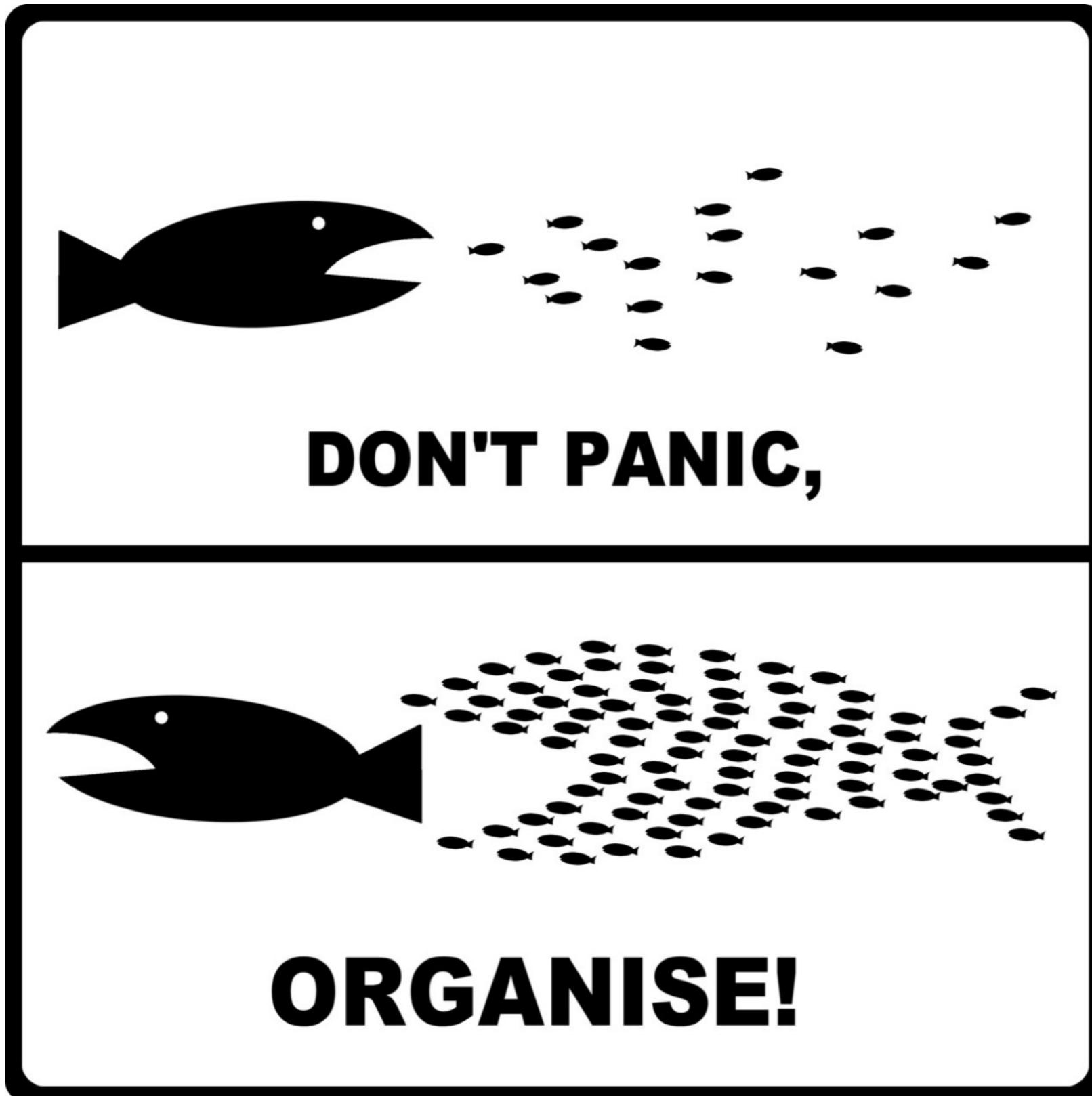
# Cautionary Tale: Solar, Nov 2015

H. 354

- Slashed reimbursement rate for muni, low-income, community projects
- Retroactive decrease in reimbursement rates for existing projects
- Minimum charges



# What Can I Do?



# Does Your Rep. Know \*Your\* Name?



Rep. Garrett Bradley,  
Hingham, April 2016



Rep. Randy Hunt,  
Sandwich, April 2016

# State Rep. meetings



Rep. Danielle Gregoire,  
Westborough, June 2017



# State Rep. meetings, cont.



Rep. Carolyn Dykema,  
Westborough, June 2017



# Low Voter Turnout = Bad for Democracy...

...but makes each voter that much more valuable!



# Senate President: "...everything else is moot"

"Climate change is the single most important issue we face. If we don't get that right, everything else is moot."

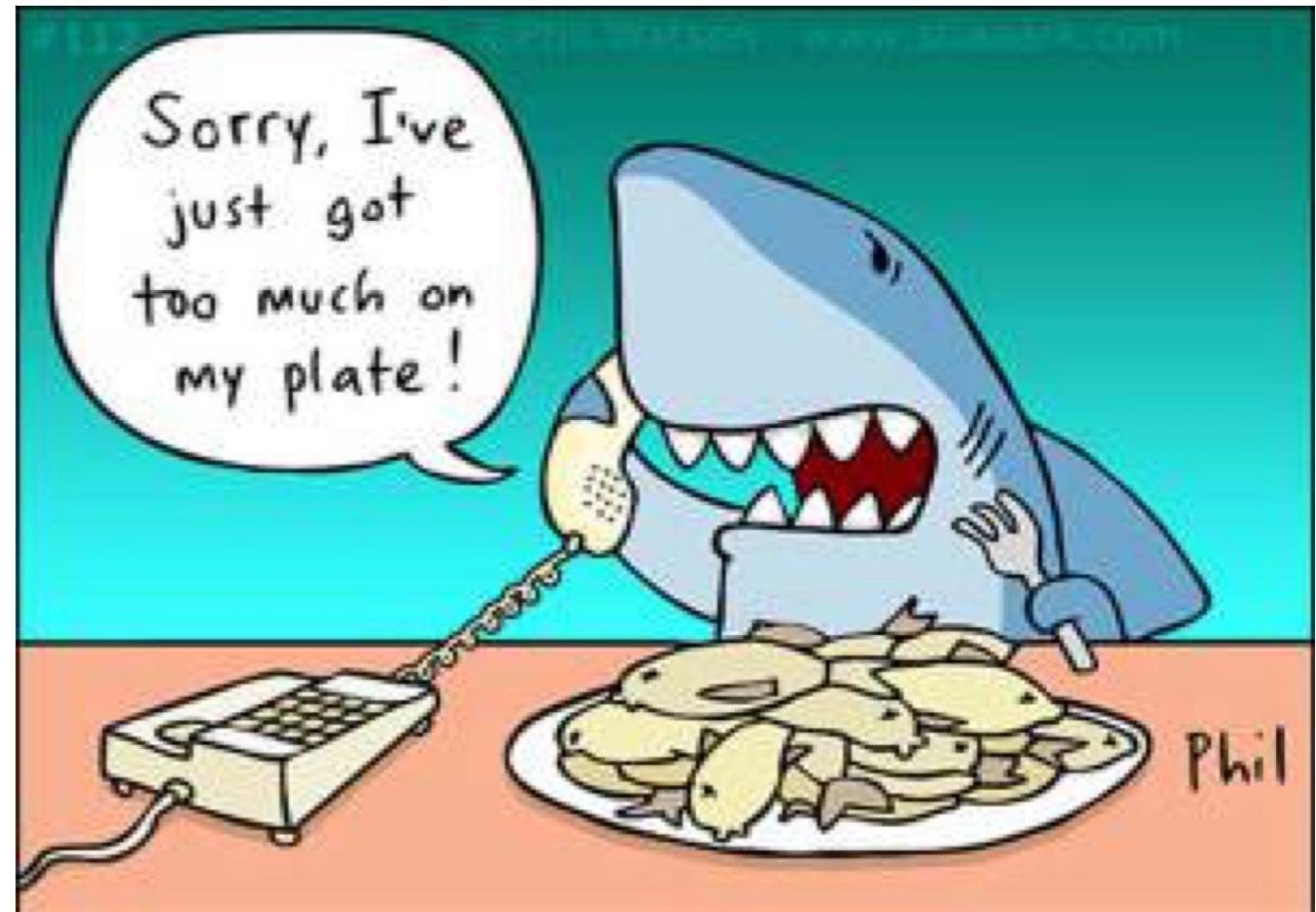
-- *Mass. State Senate President Stan Rosenberg, January 2017*



# Obstacles to State Action

## *Other Priorities*

- Bump Stocks
- Health Care
- Automatic Voter Registration
- Criminal Justice Reform
- Budget
- **“We did an energy bill last session...”**



# Obstacles to State Action, cont.

*Renewable Portfolio Standard...*

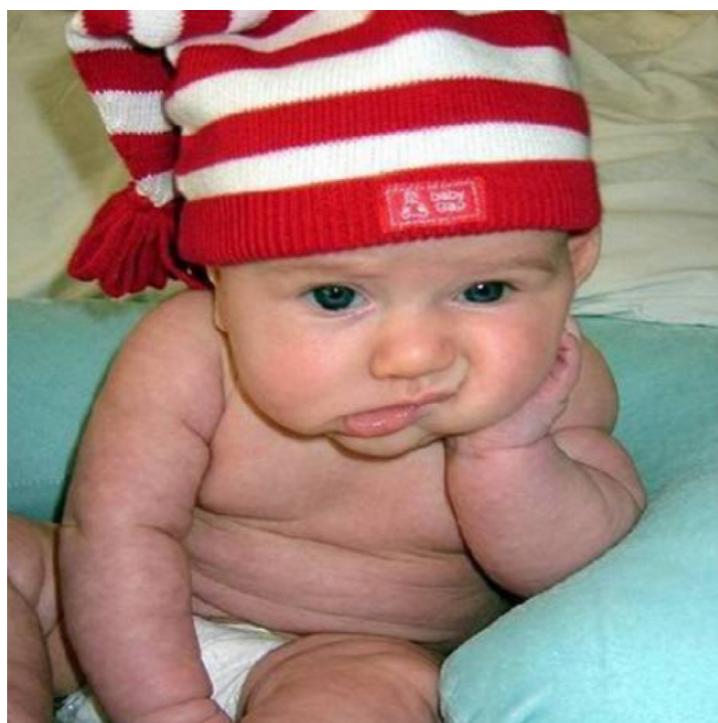
*Retail Net Metering...*

*Building Codes...*

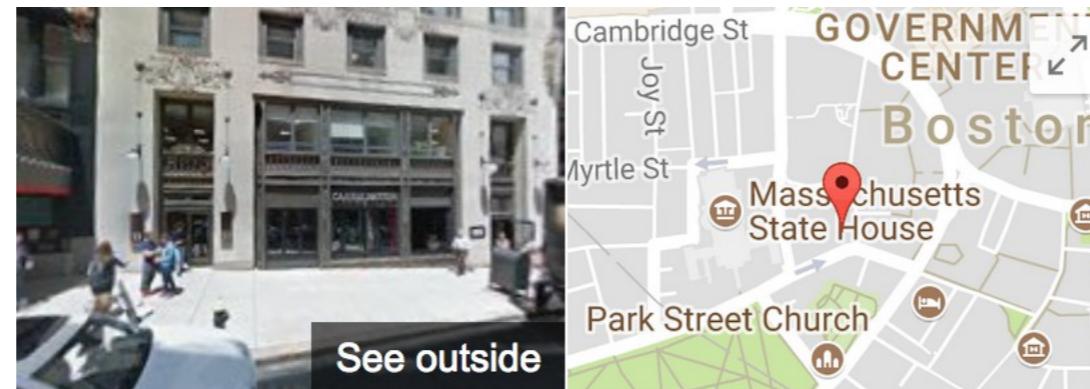
*Municipal Aggregation...*

*Forward Capacity Market...*

*Grid Modernization...*



# Obstacles to State Action, cont.



## Mass Petroleum Council ★ Directions

Association or Organization

**Address:** 11 Beacon St # 1230, Boston, MA 02108

**Phone:** [\(617\) 227-4227](tel:(617)227-4227)



## STEPHEN DODGE: Weymouth compressor safe and necessary

PLUGGING IN / ENERGY / ENVIRONMENT / POLITICS

### Natural gas shouldn't be the boogie man

Gas is the reason emissions and costs are down



STEVE DODGE Apr 5, 2017

By Stephen Dodge

Posted Aug 2, 2017 at 12:01 AM

Updated Aug 2, 2017 at 3:37 PM



# Obstacles to State Action, cont.



ENERGY / OPINION

## AIM: Energy bill will raise electric rates

 JOHN REGAN Jul 21, 2016



### Infographic | The Cost of Solar-Energy Subsidies

Posted by Bob Rio on Feb 4, 2016 11:26:15 AM

 Tweet  Share  28  Like 0  Share  G+

## Companies that supported AIM's 100th anniversary in 2015

- Verizon, Citizens Bank, State Street, Harvard Pilgrim, Bank of America, Tufts Health Plan, GE, Fidelity, Eversource, AIM Mutual Insurance Companies, Emd Millipore
- Steward, MassMutual, Astra Zeneca, Philips, Vibram, Waters - the science of what's possible, Raytheon, GDF Suez, CVS Health, Ocean Spray, Lahey Health, PriceWaterhouse Coopers, Kayem Foods, Sensata, Eastern Bank, Putnam Investments, Delta Dental
- AW Chesterton, Accutech Packaging, Acushnet Golf Co, Aetna, Juan Amodeo, Beacon Health Options, Best Doctors, Beth Israel Deaconess, Biogen, William C Blanker, The Boston Foundation, Boston Private Bank, Boston University, Chase Corporation, Choate, Hall Stewart, Comcast, Cummings Properties, Entergy, Fallon Health, Harpoon, John Hancock, Ken's Foods, LUTCO, Martignetti Companies, New Balance, MKS Instruments, P&G Gillette, Rockland Trust, TD Bank, Stop n Shop, Rockwood Capital, Wal-Mart, UMass

# Obstacles to State Action, cont.

## Experience



**Chairman**  
Massachusetts Department of Public Utilities  
Jan 2015 – Present • 3 yrs 1 mo  
Boston, MA



**Executive Director, New England**  
TechNet  
Feb 2012 – Nov 2014 • 2 yrs 10 mos  
Greater Boston Area



**President**  
New England Power Generators Association  
Nov 2005 – Aug 2011 • 5 yrs 10 mos  
New England



**Vice President**  
Associated Industries of Massachusetts  
Aug 2001 – Nov 2005 • 4 yrs 4 mos

## Angela O'Connor



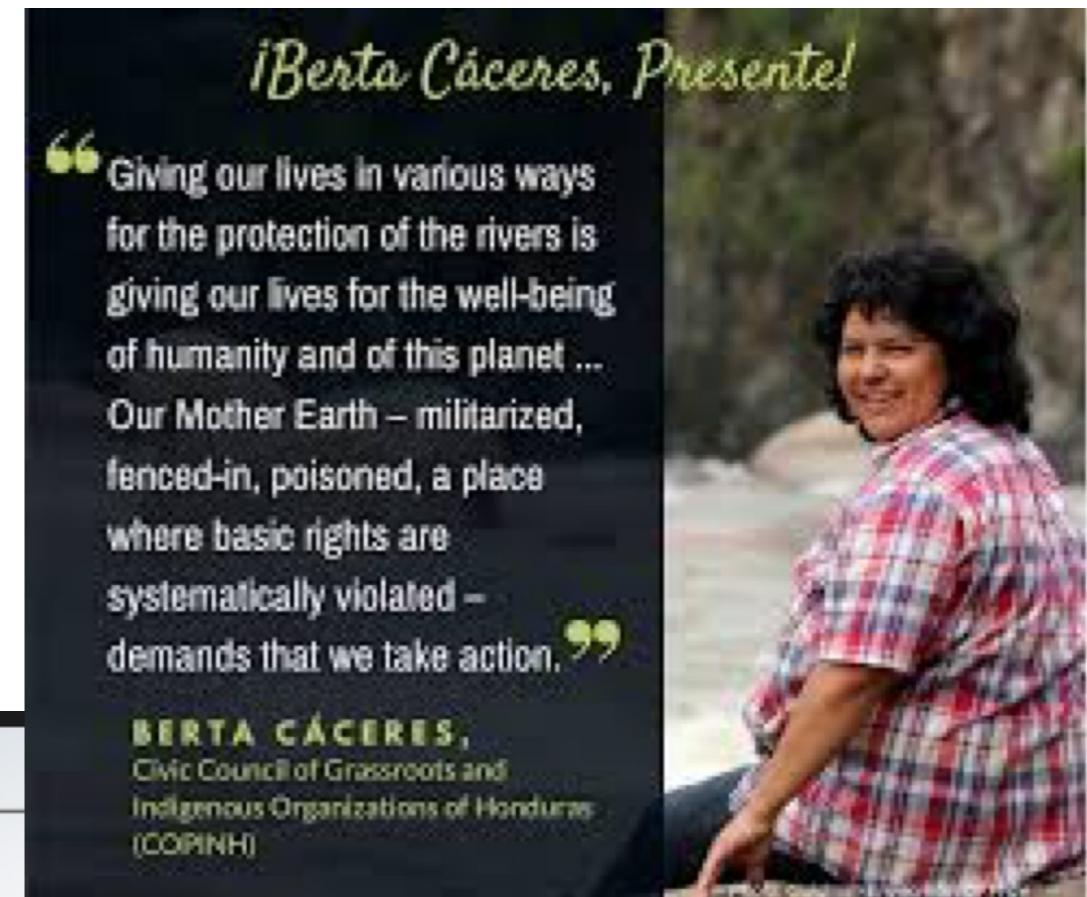
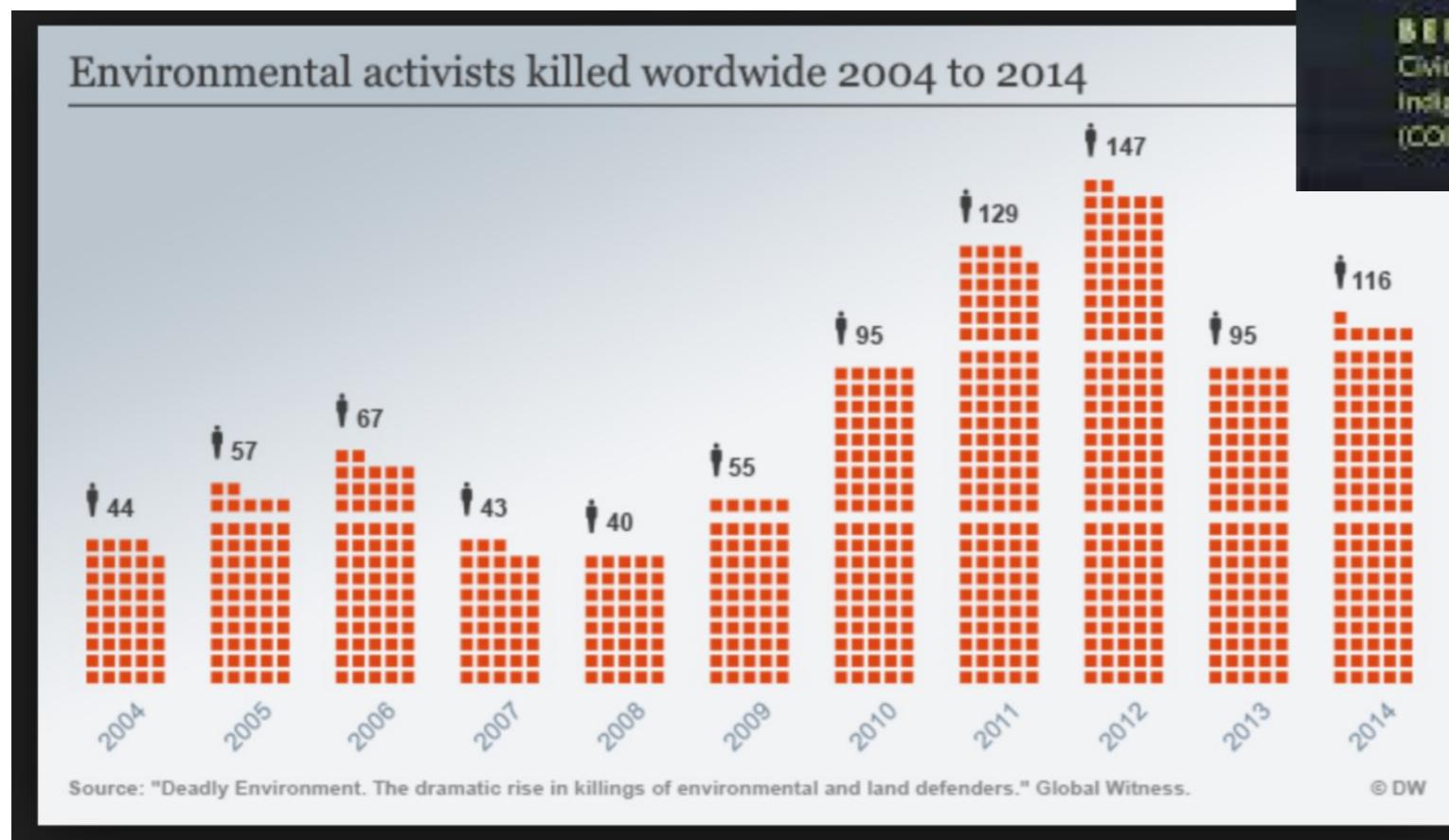
# “I’m getting outside my comfort zone”



# Steps we take to protect our children



# Risks for speaking out low, relatively speaking



# On the bright side... we are in Massachusetts!

CLIMATE CHANGE IN MASS.



## WBUR Poll Shows Big Jump In Concern About Climate Change And Its Effects

June 28, 2017

By [Lisa Mullins](#) and [Lynn Jolicoeur](#)

Share

"The pace of the change in Massachusetts was quite surprising to me," Koczela says. "I was actually quite taken aback at it."

Back in 2011, 77 percent of the registered voters Koczela surveyed said they believed the world was getting warmer. In 2015, it was 78 percent. Now it's 88 percent — and Koczela says the public is coalescing around a cause.

But despite the majority believing climate change is real and caused by human actions, Koczela says people are not holding politicians' feet to the fire. There's still a gap between beliefs and political action.

"The thing that remains a challenge is [voters] still aren't prioritizing it for leaders," Koczela says. "In other words, when you ask about what their top political issues are, climate change is still not anywhere close to things like the economy, education, health care costs, etcetera."

But on a personal level it seems climate, like politics, is local. Koczela found 74 percent of voters interviewed for the poll say they'd pay \$10 more a month on their energy bill if it would significantly reduce greenhouse gas emissions.

# Who is "Someone"?

Someone should...  
Someone should...  
Someone should...

*Who is someone?*



# Our weapons are phones, and sneakers



# Next Steps

- Set up a meeting with your Rep. to talk about climate change legislation.
- Work with Sierra Club & others to organize constituent meetings in other districts.
- Become a Sierra Club City or Town Captain
- Meet with your mayor/councilors/select board about local actions.
- Urge your local elected officials to join our Local Climate Leaders network.
  - *[www.cleanenergymass.org](http://www.cleanenergymass.org)*

# Thank you!

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