

# MA Leading by Example Council Meeting



November 7, 2018



## Massachusetts Leading by Example State Government Progress – as of Oct. 2018

Greenhouse Gas (GHG)  
Emissions



↓ **28%**  
2004 -2017

Energy Use Intensity per  
Square Foot



↓ **15%**  
2004-2017

Electricity via Renewable  
or Onsite Generation



**20%**  
In 2017

Heating Oil Consumption at  
State Facilities



↓ **84%**  
2006-2017

23.4 MW Installed Solar PV  
at State Sites



**15.2 MW**  
Since 2015

78 LEED Certified  
State Buildings



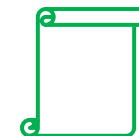
**41**  
Since 2015

119 Electric Vehicle Charging  
Stations at State Sites



**54**  
Since 2015

Leading by Example Grants  
Awarded



**\$10.7 M**  
Since 2015

News from  
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World

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Program

LBE Updates

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Recycling  
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Recycling  
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# News From Around the World

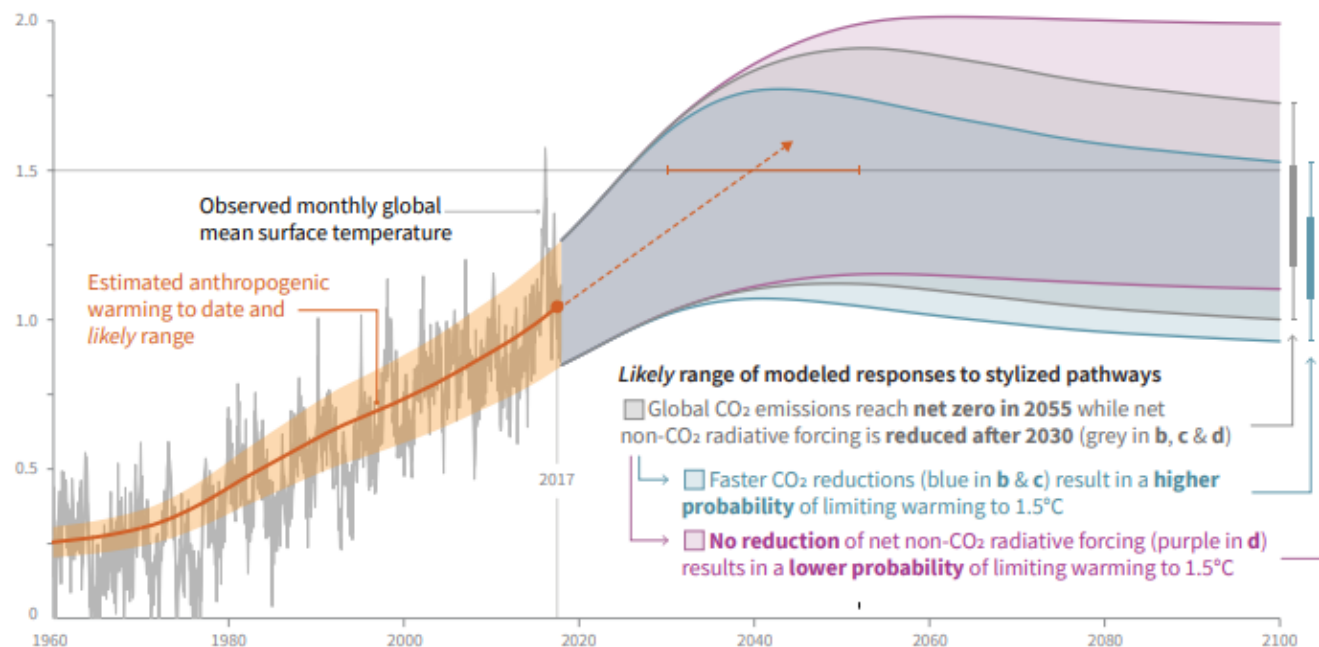
*Creating A Clean, Affordable and Resilient Energy Future For the Commonwealth*

# UN IPCC 2018 Report

- Human activities are estimated to have caused approximately 1.0°C (1.8° F) of global warming above pre-industrial levels
- **High confidence that global temperatures will increase to 1.5°C (2.7° F) above pre-industrial levels no matter what (between 2030 and 2052)**
- To avoid a 2°C increase, global net human-caused emissions of CO<sub>2</sub> **would need to fall by about 45% from 2010 levels by 2030, reaching 'net zero' around 2050**

a) Observed global temperature change and modeled responses to stylized anthropogenic emission and forcing pathways

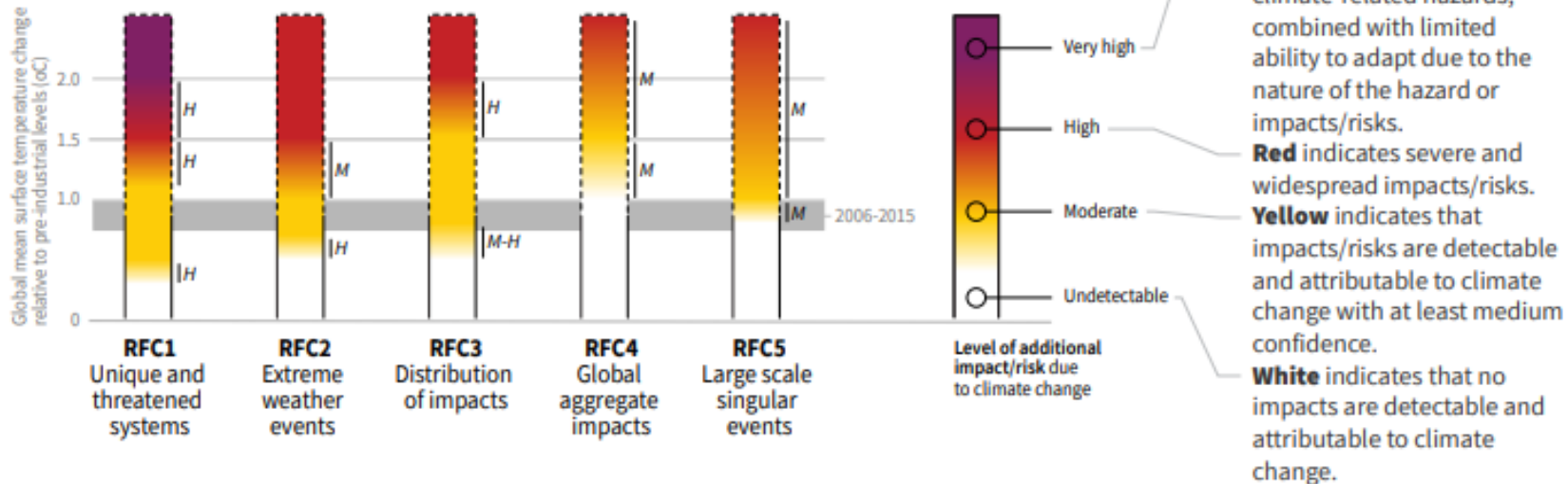
Global warming relative to 1850-1900 (°C)



# UN IPCC 2018 Report

Five Reasons For Concern (RFCs) illustrate the impacts and risks of different levels of global warming for people, economies and ecosystems across sectors and regions.

## Impacts and risks associated with the Reasons for Concern (RFCs)



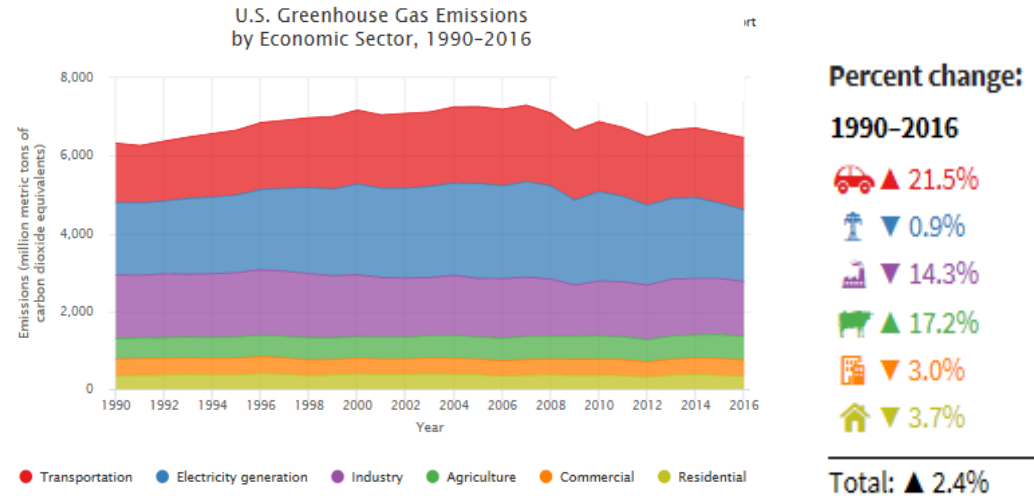
# UN IPCC 2018 Report

## The Potential Impacts by 2100:

- Projections of global mean sea level rise (relative to 1985-2005):
  - If 1.5°C: 0.26-0.77 m (10.2 – 30.3 inches)
  - If 2.0° C: additional 0.04-0.16m (1.5 in – 6.2 in) **(or additional 14-20%)**
    - More warming also impacts rate of sea level rise (quicker rise = less time to adapt)
    - Likelihood of an Arctic Ocean free of sea ice in summer would be once per century with global warming of 1.5°C, compared with at least once per decade with 2°C
    - Marine ice sheet instability in Antarctica and/or irreversible loss of the Greenland ice sheet could result in multi-meter rise in sea level over hundreds to thousands of years – could be triggered around 1.5°C to 2°C of global warming
    - The risk of irreversible loss of many marine and coastal ecosystems increases with global warming, especially at 2°C or more
    - Coral reefs would decline by 70-90 % with global warming of 1.5°C, whereas virtually all (> 99 percent) would be lost with 2°C

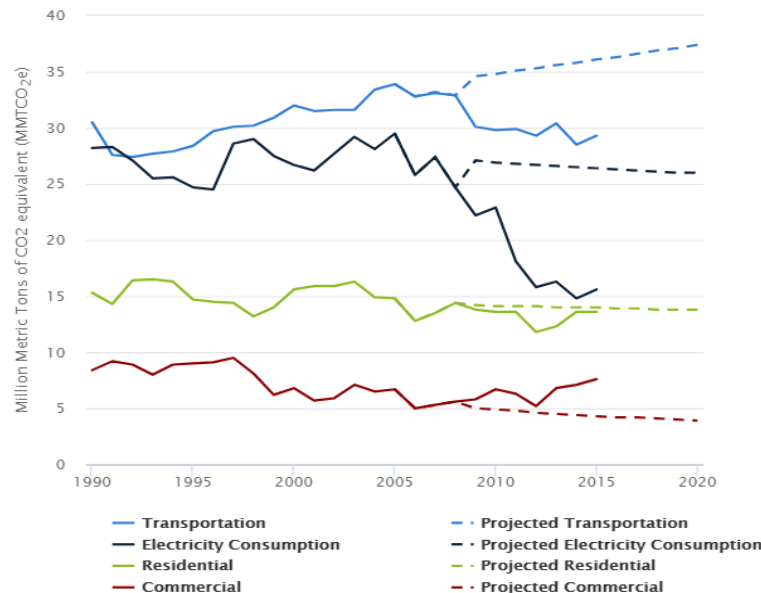
# EPA & MA Greenhouse Gas Emissions 1990-2016

- Nationally, emissions from the agricultural and transportation sectors have increased by 17% and 21% respectively since 1990
- Emissions from all other sectors have decreased



## MA GHG Emissions and Business-As-Usual (BAU) Projections for Major Sectors, 1990-2020

Source: MassDEP (2018). Massachusetts Annual Greenhouse Gas Emissions Inventory: 1990 through 2015



- Total emissions in MA have declined 19% since 1990
- In MA, emissions from transportation sector now make up the largest share of all emissions (39%)
- Emissions from electricity generation have decreased substantially

# Interactive Climate Model

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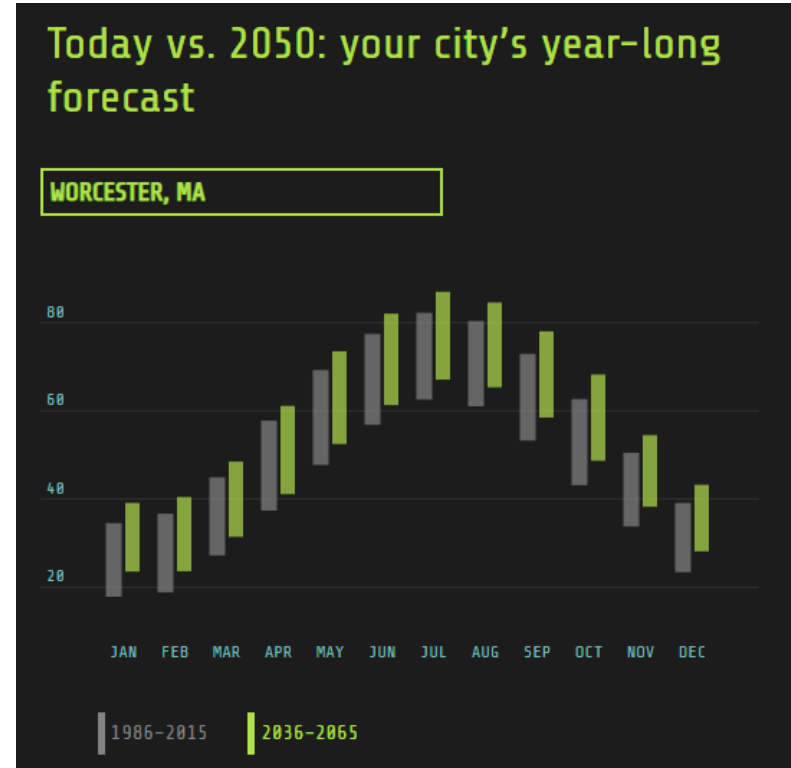
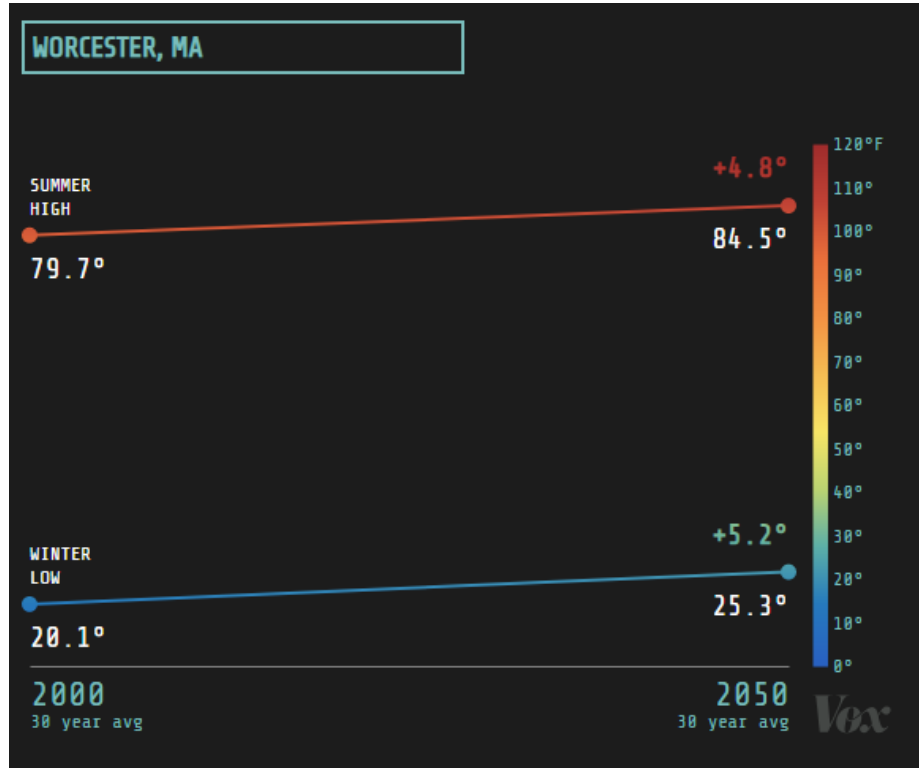
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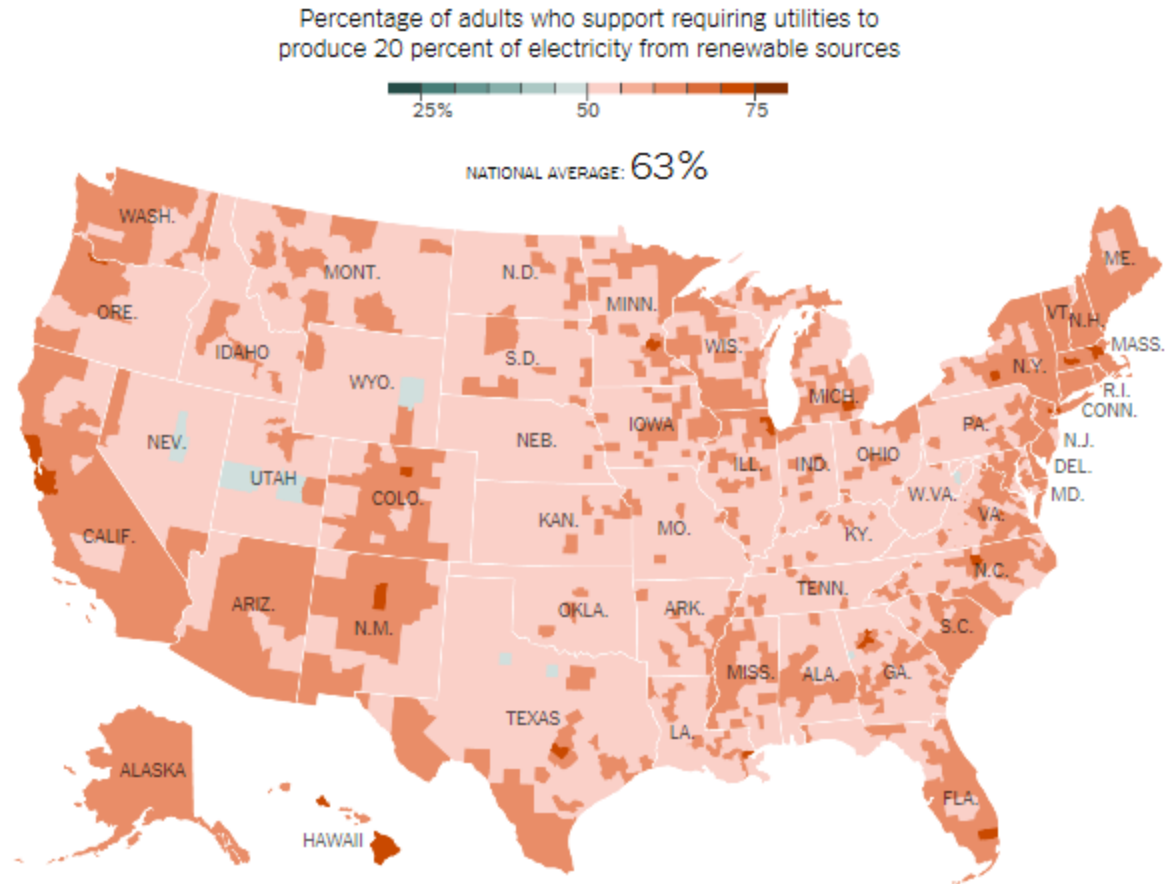
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Climate model that predicts changes in temperatures & precipitation  
for any city input into the model

[Vox, 2018](#)

# Interactive Tool: Climate Change Opinion Data



[Yale University, UC Santa Barbara, Utah State University, 2018](#)

[NY Times, 2018](#)

- **70% of MA adults support requiring utility to produce 20 percent of electricity from renewables**

**2018 MA RPS: 13%**

**2020 RPS: 15%**

**2022 RPS: 20%**

(Increases by 1% annually, then increases 2% annually from 2020-2029)



# Innovation is in the Air Too

- Airlines working to reduce emissions

- Virgin Atlantic [launched a commercial flight](#) (Orlando to London in October) using a fuel mix using recycled carbon-rich industrial waste gases from a factory – the first of its kind according to the airline
- JetBlue [powered its first flight](#) with a 15% renewable jet fuel blend in September

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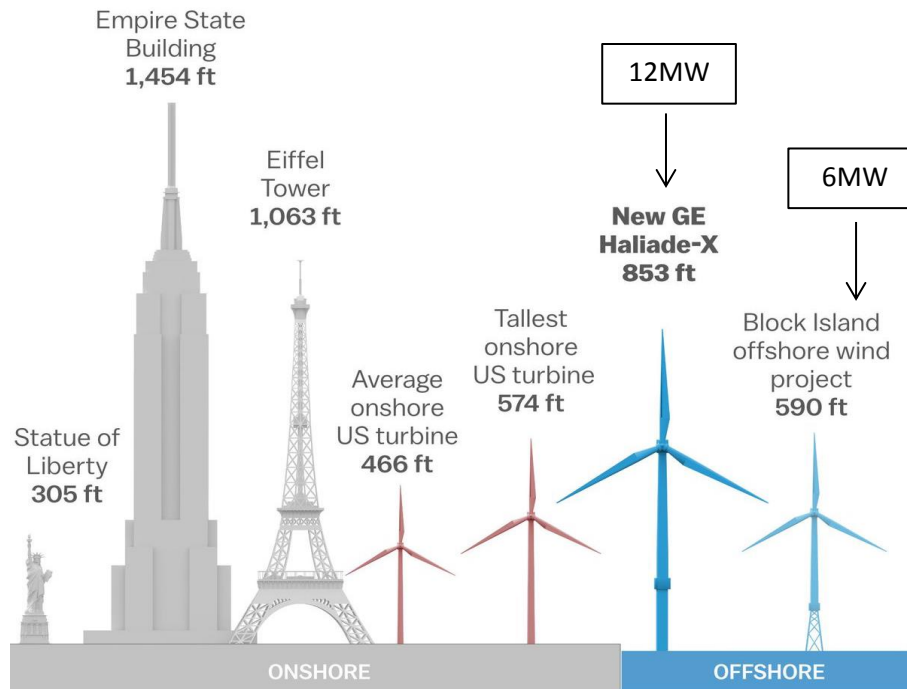
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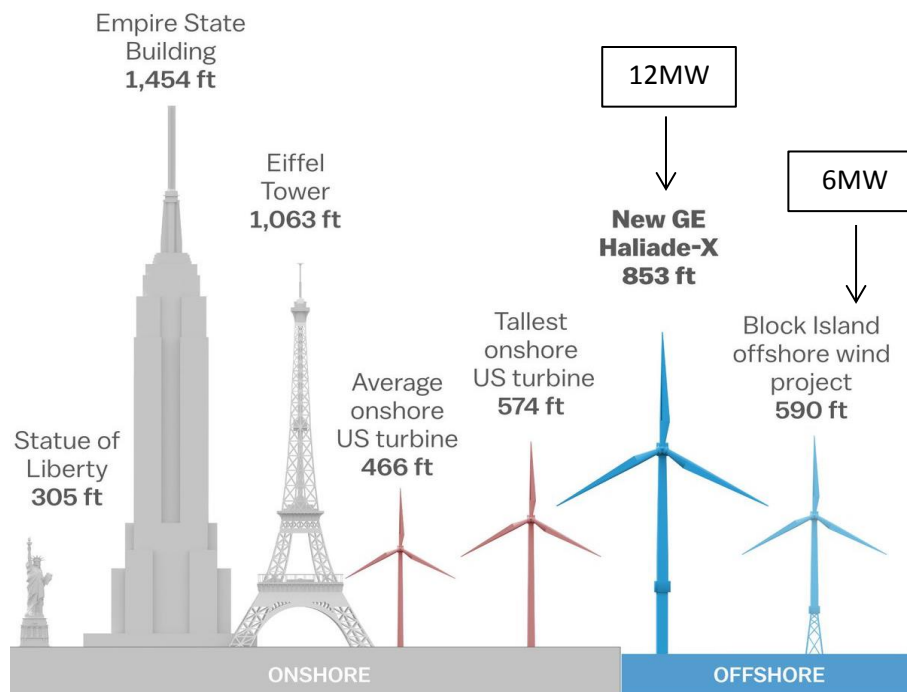
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- Wind turbines getting more powerful

- Turbines getting more powerful – now potential for 12 MW offshore



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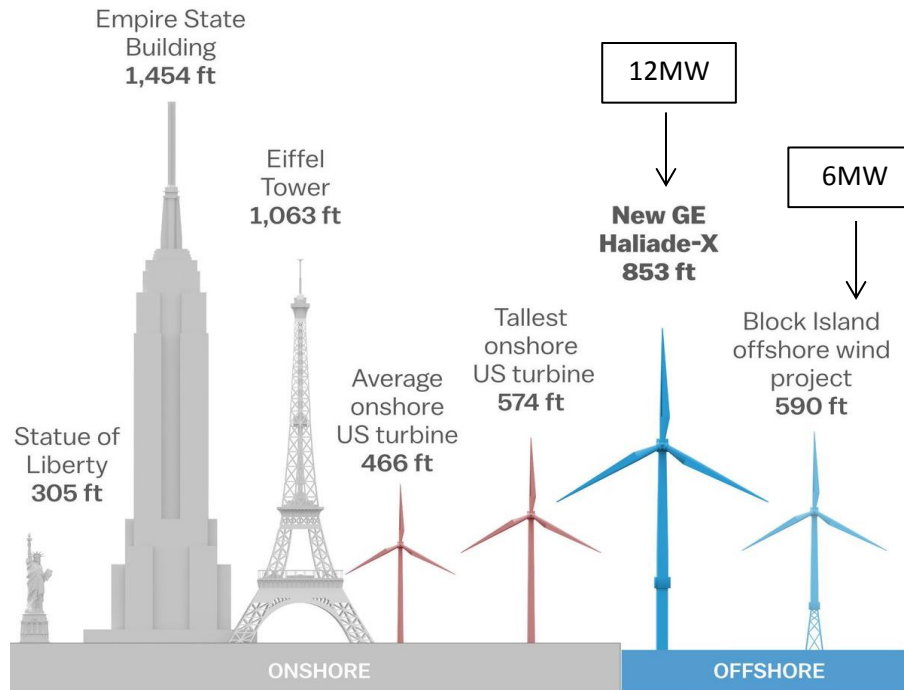
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- 4 Canadian provinces set to implement carbon tax in 2019

- 90% of revenue will be returned to individuals, and the rest to cities, small businesses, and institutions like schools

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  - Turbines getting more powerful – now potential for 12 MW offshore
- 4 Canadian provinces set to implement carbon tax in 2019
  - 90% of revenue will be returned to individuals, and the rest to cities, small businesses, and institutions like schools
- Pulling CO<sub>2</sub> from the atmosphere
  - New [scientific report](#) calls for carbon removal or 'negative emissions technologies' to play significant role in climate change mitigation
  - New call from [Y Combinator](#) in Oct. for carbon removal start-ups & technologies

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# Massachusetts Updates

*Creating A Clean, Affordable and Resilient Energy Future For the Commonwealth*



Massachusetts Department  
of Energy Resources

# Boston University Wind PPA

- BU entering into 15-year power purchase agreement (starts 2020)
- 205,000 MWh wind power PPA helps providing financing to build South Dakota wind farm
  - Contract provides guaranteed price to wind developer while BU can see financial benefit in wholesale market when prices rise
  - BU will earn RECs to be used against BU's GHG emissions
  - BU: "Buying power outside of its New England backyard gives BU added punch against climate change because the power grid in the upper Midwest is far more reliant on environmentally harmful fossil fuels than New England's."



# Utility EV Charging Station Make-Ready Program

Eversource	National Grid
Approved by DPU to spend \$45 million over 5 years on electrical improvements and site work	Approved by DPU for 3 year program <i>(LBE to find out more information)</i>
Projecting installations of: <ul style="list-style-type: none"> <li>• 72 fast chargers at 36 sites</li> <li>• 3,995 Level 2 chargers at 452 sites</li> </ul>	Projecting installations of: <ul style="list-style-type: none"> <li>• 80 fast chargers at 20 sites</li> <li>• 600 level 2 chargers at 120 sites</li> </ul>
Sites should have sufficient parking (100 spaces or more)	<i>(LBE to find out more information)</i>
Require at least 2 stations with wiring for 3 more	<i>(LBE to find out more information)</i>
Approved list of vendors	
Targeting locations with public access, that are safe, with amenities, destinations (e.g. stadiums, parks, beaches, community colleges etc.)	

# SMART Program Launch

- Transition date from SREC II to SMART
  - November 26, 2018



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# SMART Program Launch

- Transition date from SREC II to SMART

- November 26, 2018



- **SREC:** Facilities that intend to qualify under SREC II

- 25 kW (DC) and less

- Receive permission to operate or authorization to interconnect on or before Nov. 26, 2018
    - Applicants have until Feb. 15, 2019 to submit SREC II application

- Larger than 25 kW (DC)

- Must demonstrate mechanical completion on or before Nov. 26, 2018
    - Documentation must be submitted to DOER by Dec. 10, 2018

# SMART Program Launch



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  - Larger than 25 kW (DC)
    - Must demonstrate mechanical completion on or before Nov. 26, 2018
    - Documentation must be submitted to DOER by Dec. 10, 2018
- **SMART:**
  - All applications received between 12:00 PM Nov. 26, 2018 and 11:59 PM Nov. 30, 2018 will be considered to have been received at same time for the purpose of establishing queue for placement into Capacity Blocks
  - All applications received on or after 12:00 AM ET December 1, 2018 will be reviewed on a first come, first served, basis

# PowerOptions & SunPower

*Learn about opportunities to install large solar power purchase agreement (PPA) projects through PowerOptions contracting process with no upfront capital cost*

Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the Commonwealth or DOER.

# *PowerOptions Large Solar & Storage Program*



SUNPOWER®

Nov. 7th, 2018

# Agenda

- PowerOptions introduction
- Solar programming
- The SMART program
- Storage
- Case studies
- Q&A



# Our Experience

- PowerOptions
  - 20 year old nonprofit
  - 400+ members
  - Mission: aggregate buying power & facilitate energy procurements for our members
  - MGL Chapter 164, Section 137
  - 26 current state agency participants
- Launched solar programs in 2011
  - Brought innovative PPA model to market
  - Developed transparent and consistent pricing methodology
- 65+ MW, 58 participants, \$120mil savings
  - 6 state agency participants
  - 17 housing authorities
  - 20 municipalities
  - 16 private nonprofits (inc. MIT Lincoln Labs)



Community Rowing Inc., 84 kW



Bristol Community College, 3.2 MW

# PowerOptions Small Solar Program



- Projects < 300 kW
- 50 Projects – 8.1 MW
- Cape Cod Regional Transit Authority
  - Dennis rooftop – 208 kW
  - Hyannis parking canopy – 300 kW
- Salem State University
  - 3 rooftop projects



Somerset Berkley High School – 300 kW

# SunPower and PowerOptions Program Development

- RFP Launched May 2017
  - 11 responses
  - Very competitive on price
  - Program launched April 2018
- Pre-negotiated pricing methodology
- Pre-negotiated contract terms and conditions
  - Solar Power Purchase Agreement (“PPA”)
  - Battery Storage Services Agreement (“SSA”)
- Parking canopies, rooftop, ground mounted
- Front-of-meter or Behind-the-meter
- Optional inclusion of battery storage





# The Power Purchase Agreement Model for State Agencies

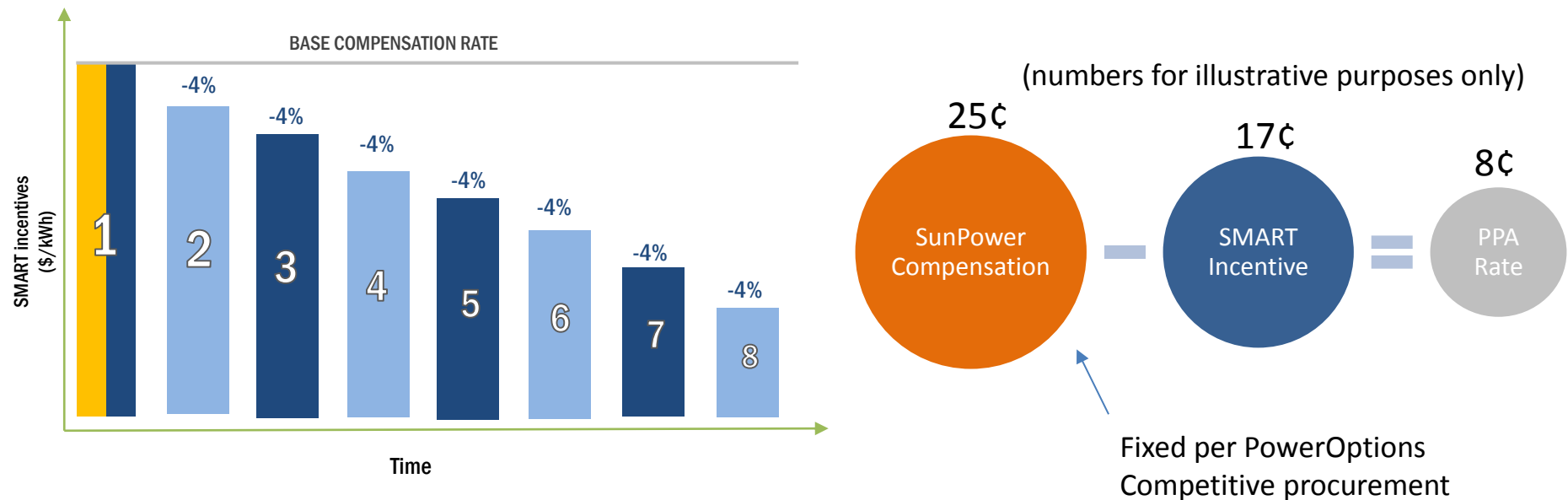
- Zero upfront cost – turnkey project development
  - SunPower designs, engineers, permits, finances, constructs, interconnects system
- SunPower retains ownership – operates and maintains
  - SunPower only makes money if system is operating
  - Minimal risk to host
- Agency agrees to buy system output for 20-25 years at fixed cost
  - Immediate savings
  - Hedge against volatility in energy markets
  - Demonstrate commitment to sustainability
- End of term
  - SunPower removes system for no cost
  - Agency negotiates purchase of system
- Incorporation of LBE grant program
- Monetize federal tax benefits

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# Solar Massachusetts Renewable Target (“SMART”) Program

- Fixed \$/kWh incentive payment to system owner over 20 years
- 8 “blocks” of capacity – incentives decline as blocks fill up
- Incentive rate has direct impact on PPA rate
- Incentive levels differ by LDC – Eversource highest



# Integrating Solar + Storage

## Why?

### Increase the value of solar

- Demand charge reduction
- Self consumption



### Reduce the cost of storage

- Federal Investment Tax Credit & depreciation
- State-level incentives for storage



- Demand charge savings
- Cost of batteries incorporated into project cost and PPA rate
- Can reduce PPA rate in absolute terms plus create additional savings
- Very dependent on project specific details





# SUNPOWER®

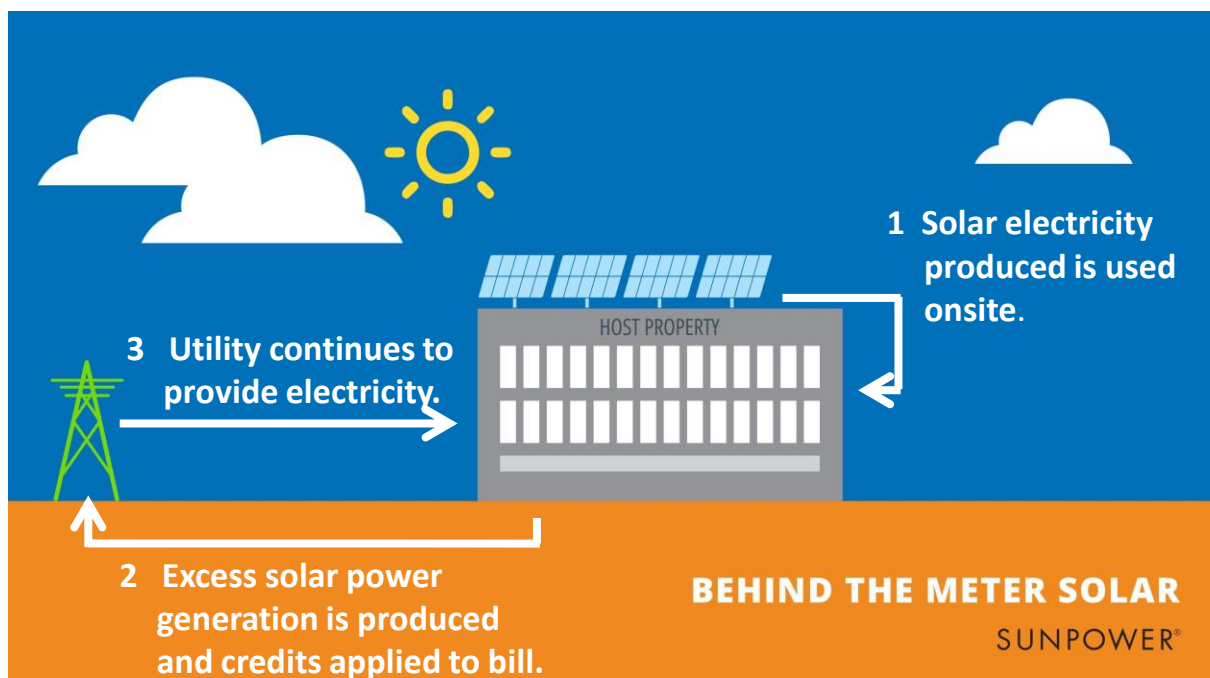
## Project Case Studies

Campbell Soup Company Headquarter  
4.4 MW – Roof, Carport and Ground system



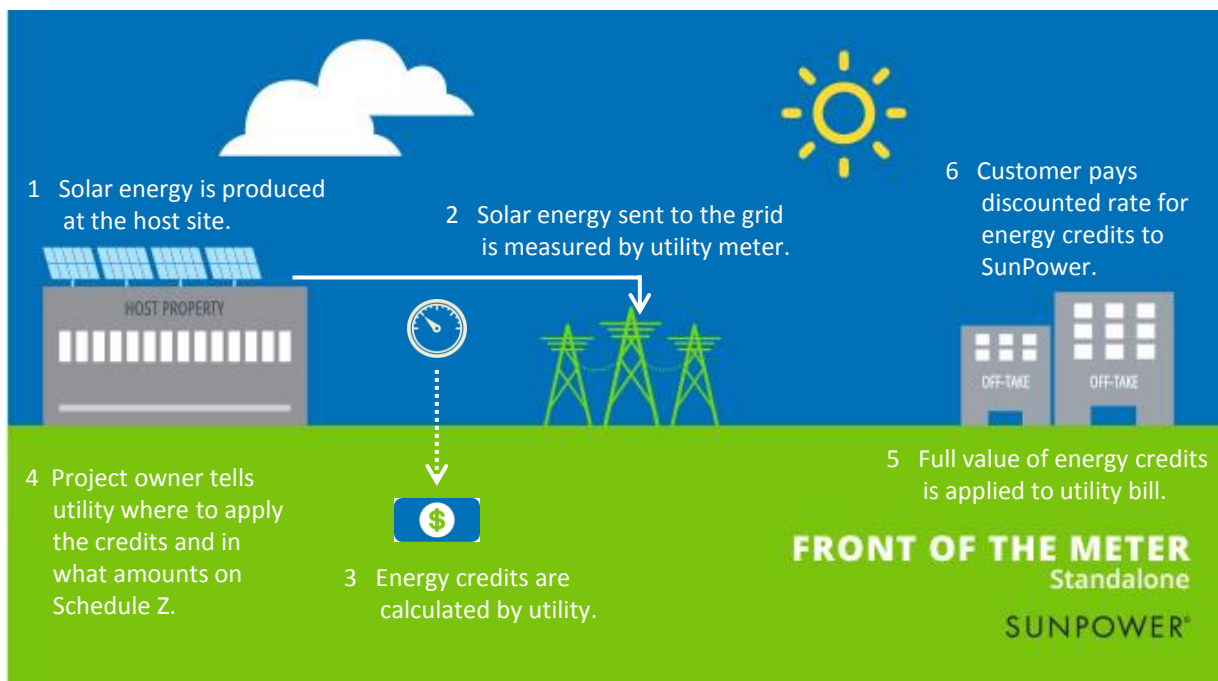
# Project Options- Behind the Meter (BTM)

- The energy produced by the solar project is consumed at the site
- Sized to meet on-site energy consumption
- Require no upfront investment and provide guaranteed energy savings



# Project Options- Front of the Meter

- The energy produced at the facility generates credits that can be used to lower the energy bill at one or several locations within the same utility and service territory
- Energy is sent to the utility grid and each meter receives credit on monthly utility bill



# Fully integrated SunPower® Helix™ platform solutions



## Execution Certainty

- Speeds installation to minimize business disruption and accelerate time to savings



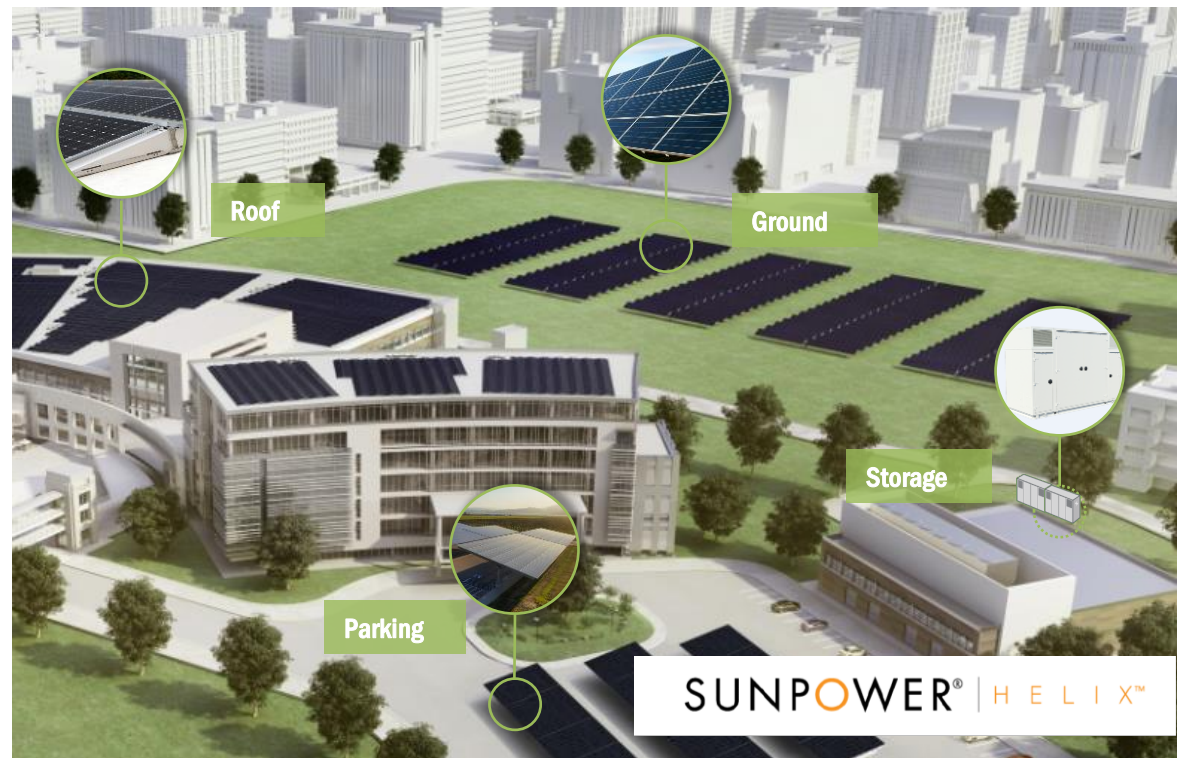
## Best Products and Solutions

- Solutions that deliver the most energy for predictable savings and dependable results.



## Committed Partner

- The most expertise in product selection, project design, financing, construction, grid connection and operations.



# Behind the Meter (BTM)- Eversource

## Customer Objective:

- Looking for competitive PPA rate with highest 20 with highest lifetime savings.

## Solution:

- System sized to meet customer consumption

System Size: 783 KW DC  
Year 1 Production: 900,450 kWh

BTM Project	PPA	PPA w/LBE
Grid Electricity Rate	\$0.0988	\$0.0988
Solar PPA Rate	\$0.0798	\$0.0692
PV System Size	783 kWp	783 kWp
Total kWh Production	900,450	900,450
20 Year Net Present Value	\$634,651	\$832,902
20 Year Net Savings	\$1,126,674	\$1,432,247
Year 1 Savings	\$22,468	\$39,764





# Front of the Meter (FTM)- National Grid

## Customer Objective:

- Maximize the parking areas to generate the maximum kWh on site while having multiple meters

## Solution:

- Alternative On Bill Credit applied to each meter

System Size: 1.345 MW DC  
Year 1 Production: 1,479,500

LBE Project	FTM- LBE Impact
Credit Value per kWh	\$0.0393
Year 1 Production	1,479,500
Share of Offtake (kWh)	1,183,200
20 Year Net Present Value	\$326,604
20 Year Net Savings	\$522,062
Year 1 Savings	\$26,728



Total Cash Flow to Customer from Utility	Customers Payment to SunPower	Customer Annual Savings (\$)
\$145,449.65	\$87,305.30	\$58,144.35

# Combination (BTM + FTM)- Eversource

## Customer Objective:

- Lower energy budget for portfolio locations

## Solution:

- Utilize a single “Host” site to maximize solar production to satisfy onsite consumption and Alternative On Bill Credit program
- Requires a special Use Case from DOER

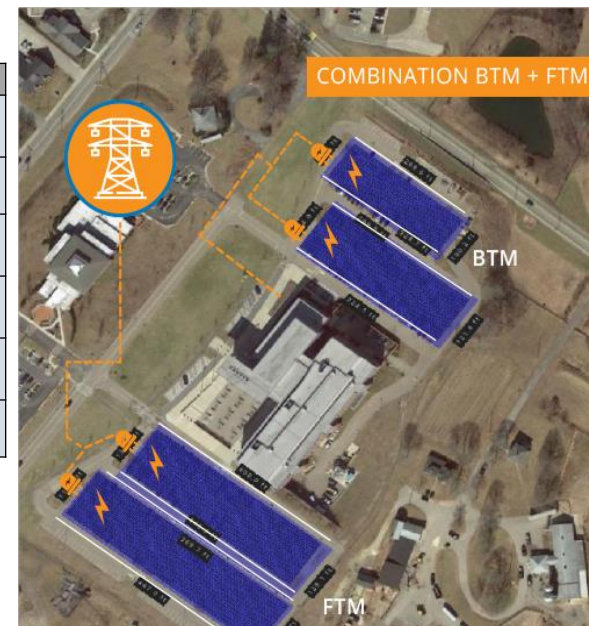
Behind the Meter  
System Size: 1.02 MW DC

BTM project	PowerOptions	LBE Impact
Grid Electricity Rate	\$0.1250	\$0.1250
BTM Solar PPA Rate	\$0.0940	\$0.0838
PV System Size	1020 kWp	1020 kWp
Total kWh Production	1173000	1173000
20 Year Net Present Value	\$849,397	\$993,681
20 Year Net Savings	\$1,499,784	\$1,730,417
Year 1 Savings	\$36,520	\$48,328

Front of the Meter  
System Size: 1.34 MW DC

FTM project	PowerOptions	LBE Impact
Credit Value per kWh	\$0.0220	\$0.0406
PV System Size	1,340 kWp	1,340 kWp
Total kWh Production	1,556,720	1,556,720
20 Year Net Present Value	\$418,567	\$616,016
20 Year Net Savings	\$669,061	\$984,676
Year 1 Savings	\$34,254	\$63,148

Project Economics	BTM	FTM	Total
20 Year NPV	\$993,681	\$616,016	\$1,609,697
20 Year Net Savings	\$1,730,417	\$984,676	\$2,715,093



# SunPower Horizons



SUNPOWER Horizons™

A comprehensive, customizable educational program that inspires students to succeed and their teachers to excel.

From industry-leading solar solutions to life-changing educational experiences, SunPower helps you make the most of your investment.

# Higher Education

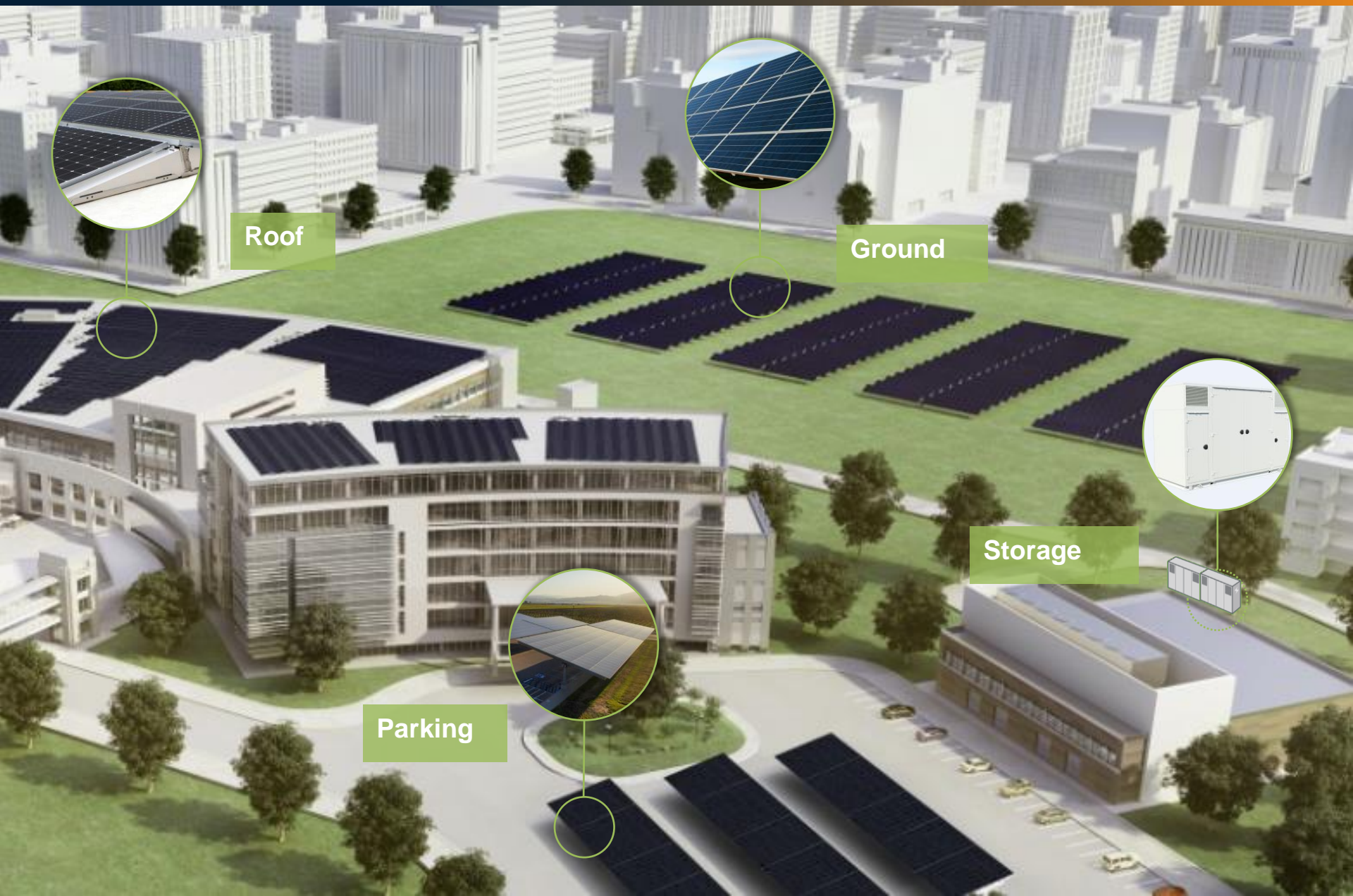
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In the Classroom	Solar Academic Fundraising Program	■
	Guest Instructors & Mentors	■
	SunPower Panel Donation for Classroom Use	■
In the Field	Summer Solar Energy Academy	▨
	Field Trips to Solar Sites & SunPower Offices	■
	Internships	▨
	Service Learning	■
Professional Development for Educators	Solar Externship	■
	Summer Solar Energy Academy Training	▨
	Job Shadowing	■

▨ In Development



# Questions?



# We Are Here to Help



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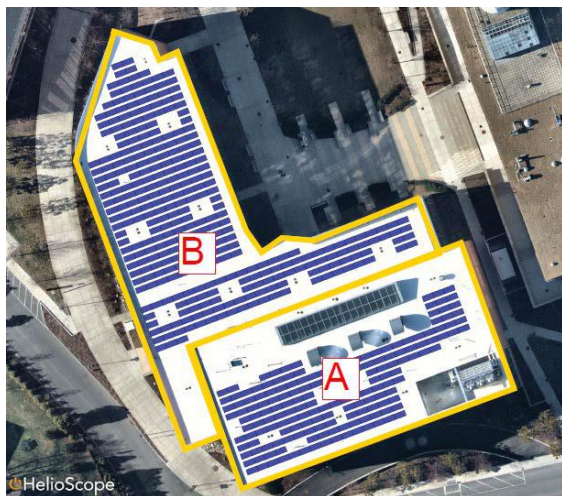
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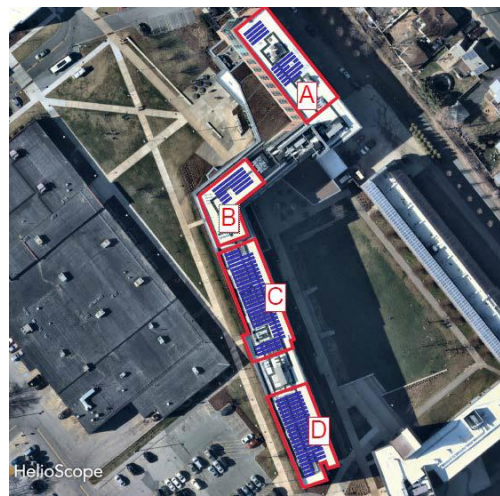


# LBE Solar Grant

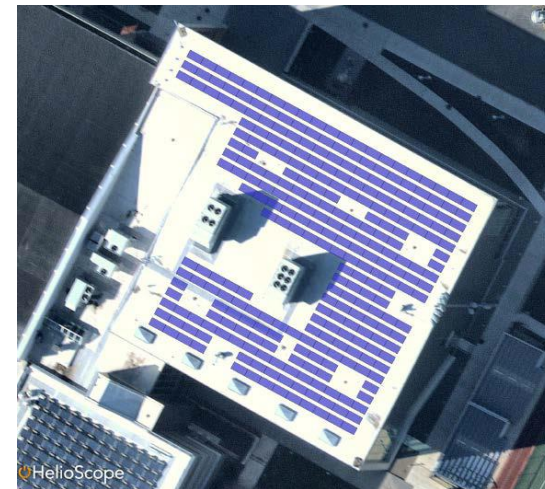
- Salem State University: 387 kW (DC)
  - 20-year power purchase agreement, construction complete Spring 2019
- \$193,500 LBE Solar Grant awarded
- Project estimates:
  - Annual generation: 439,000 kWh
  - Electricity costs reduced from about \$0.14/kWh to \$0.08/kWh
  - Annual electricity costs savings: \$28,500
  - 20-year savings: \$336,000 w/o LBE grant, \$543,000 with LBE grant
  - Annual GHG emissions reductions: 146 metric tonnes



**Berry Library: 178 kW**



**Marsh Hall: 107 kW**



**Gassett Fitness Center: 102 kW**



# LBE Solar Grant Updates

Effective Date:  
November 16, 2018

1. Changing basis for the LBE grant award (\$/watt) from DC to AC

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Chart #1:  
Projects Eligible for SMART Program

	Current LBE Grant	NEW Canopy (SMART Blocks 1&2)	NEW Canopy (SMART Blocks 3&4)	NEW Canopy (SMART Blocks 5&6)	NEW Canopy (SMART Blocks 7&8)	Current LBE Grant	NEW Roof/Ground	Current Innovative	NEW Innovative
PPA	\$1.10	\$1.00	\$1.05	\$1.10	\$1.15	\$0.50	\$0.40	\$0.65	same
Owned	\$1.65	\$1.50	\$1.60	\$1.70	\$1.80	\$0.50	same	\$0.65	same

Chart #2:  
For projects not eligible for SMART (e.g. Municipal Light Plants, off-grid):

	Canopy	Roof/Ground	Innovative
PPA	\$1.30	\$0.45	\$0.85
Owned	\$2.00	\$0.65	\$0.85

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Massachusetts Department  
of Energy Resources

# LBE Solar Grant Updates

Effective Date:  
November 16, 2018

1. Changing basis for the LBE grant award (\$/watt) from DC to AC
2. Lowering the award amounts per watt

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Effective Date:  
November 16, 2018

1. Changing basis for the LBE grant award (\$/watt) from DC to AC
2. Lowering the award amounts per watt, but increasing them for canopies projects get assigned to different blocks

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Owned	\$2.00	\$0.65	\$0.85

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Massachusetts Department  
of Energy Resources

# LBE Solar Grant Updates

Effective Date:  
November 16, 2018

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Chart #1:  
Projects Eligible for SMART Program

	Current LBE Grant	NEW Canopy (SMART Blocks 1&2)	NEW Canopy (SMART Blocks 3&4)	NEW Canopy (SMART Blocks 5&6)	NEW Canopy (SMART Blocks 7&8)	Current LBE Grant	NEW Roof/Ground	Current Innovative	NEW Innovative
PPA	\$1.10	\$1.00	\$1.05	\$1.10	\$1.15	\$0.50	\$0.40	\$0.65	same
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# FY18 LBE Tracking Form

Thanks to those who have already submitted their FY18 Tracking Form!

**GREENFIELD CC**

**MASS. COLLEGE OF LIBERAL ARTS**

**UMASS AMHERST**

**UMASS MEDICAL**

**WESTFIELD STATE UNIVERSITY**

Due date is **December 15<sup>th</sup>**

Please reach out with any questions or delays regarding your submissions

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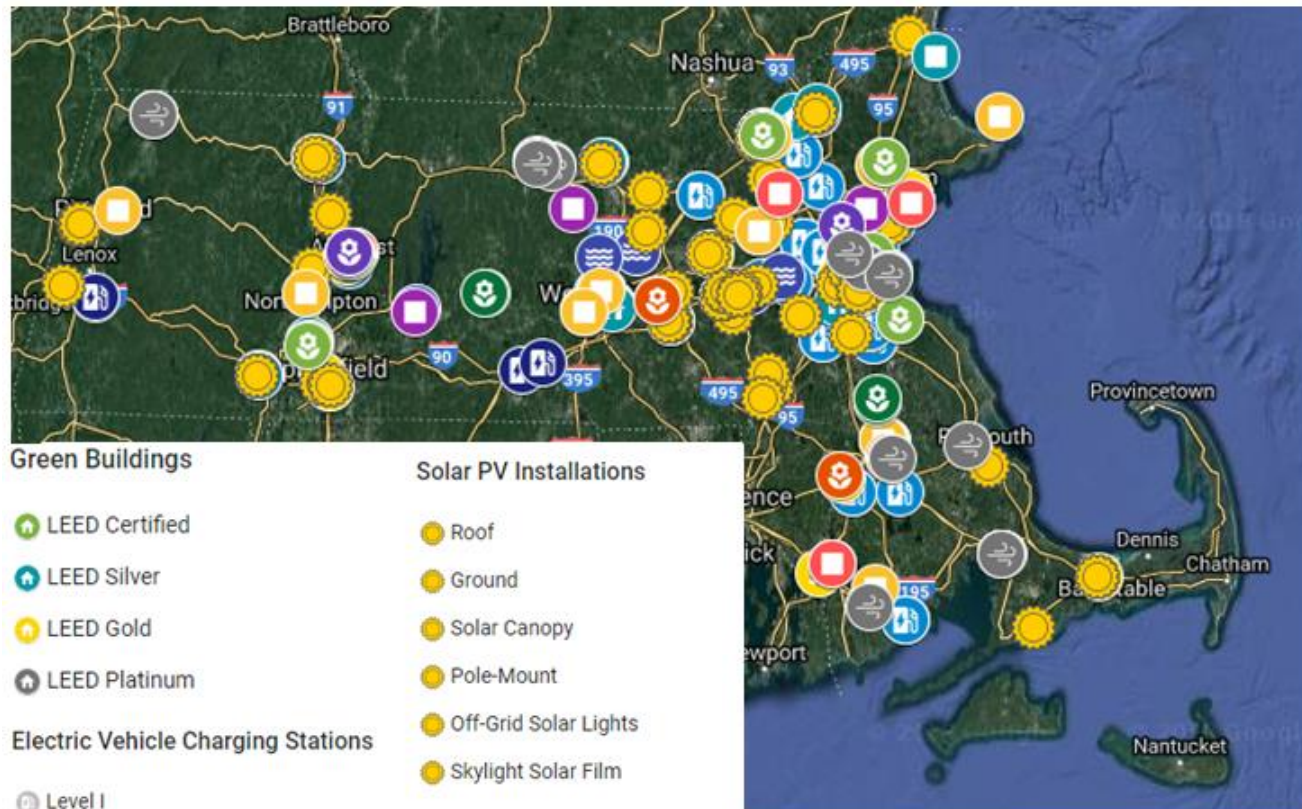
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# LBE Sustainability Map

(In Development)



## Green Buildings

- LEED Certified
- LEED Silver
- LEED Gold
- LEED Platinum

## Electric Vehicle Charging Stations

- Level I
- Level II
- Fast Charger

## Hydropower Installations

- Hydro

## Solar PV Installations

- Roof
- Ground
- Solar Canopy
- Pole-Mount
- Off-Grid Solar Lights
- Skylight Solar Film

## Renewable Thermal Installations

- Solar Thermal
- Ground Source Heat Pumps
- Biomass
- Air Source Heat Pumps

## Wind Turbine Installations

- Wind Turbine
- Building-Integrated Wind Turbine

## Sustainable Landscaping

- Green Roof
- Planted Wildflowers
- No-Mow Zone
- Planned Garden

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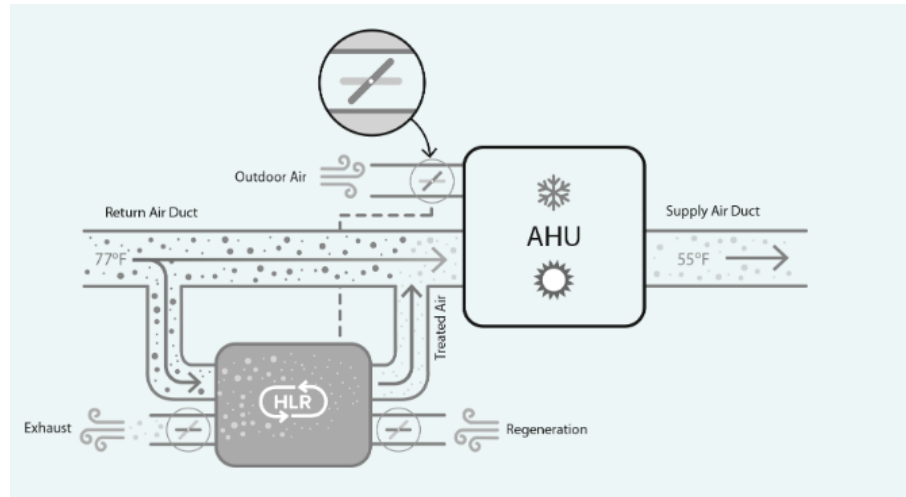
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# Technology Spotlight



- **Indoor air quality & energy efficiency technology** (Enverid)
  - **Molecular air cleaning indoor air – instead of constantly replacing it with outside air**
  - **Estimated 20-30% energy reduction: less HVAC need to heat or cool outside air being brought into the building**

Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the Commonwealth or DOER.

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- **Water treatment technology (FlowMark)**
  - **Pulse-power electronic water filtration system around pipe (reducing chemical use)**
  - **Reducing calcite scale in pipes improves energy efficiency**

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- Water treatment technology (FlowMark)

- Pulse-power electronic water filtration system around pipe (reducing chemical use)
- Reducing calcite scale in pipes improves energy efficiency

- Removable and reusable insulation covers (Ever Green Cut 'N Wrap)

- **Modular insulation covers for valves & fittings**
- **Estimated energy savings up to 8%**

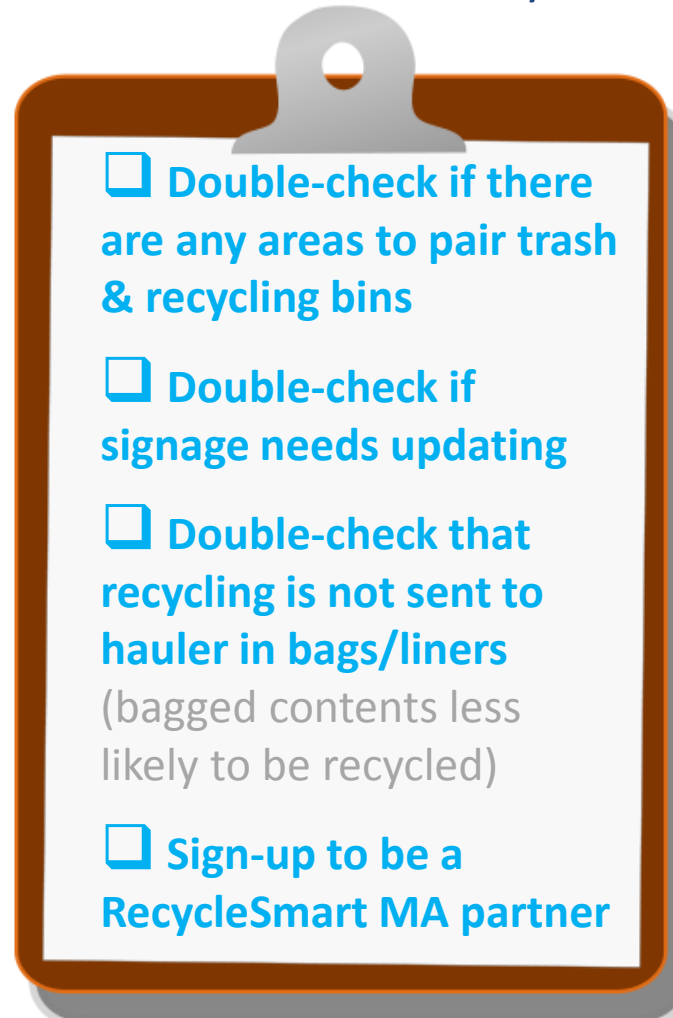
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# Recycling at State Facilities

**America Recycles Day**  
I ♻️ NOVEMBER 15

- LBE's Recycling Challenge Checklist

➤ On or around Nov. 15 at your facility:



1. Complete any or all of these items as applicable
2. Email updates to [trey.gowdy@mass.gov](mailto:trey.gowdy@mass.gov)
3. LBE will highlight efforts at next Council Meeting

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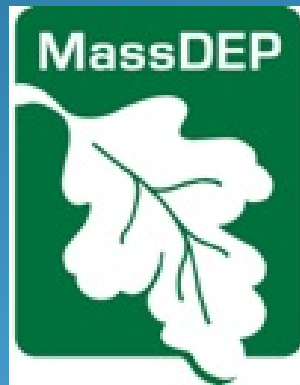
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# MassDEP Updates



Josh Cook, Mass DEP  
Leading by Example Meeting  
November 7, 2018



# The Recycling Process

1.  
Place recyclables  
in a cart,  
dumpster, etc.



2.  
Materials are  
delivered to a  
Materials  
Recovery Facility  
(MRF)



At MRF:

- Materials are loaded onto series of conveyor belts for sorting
- Workers attempt to remove non-recyclables – including plastic bags and bagged trash
- Some of these items get through and jam equipment or contaminate bales

3.  
Bales of materials  
are shipped to  
businesses that  
transform them  
into new items



Or deliver  
separated  
materials  
direct to  
recycling  
facilities

Such as  
cardboard or  
plastic film

Baled and  
shipped to  
markets

# Recycling Market Changes

- China major importer of recyclables from US
- Greatly reduced tolerance for contamination in baled recyclables
  - Driven by Chinese government policy
  - Has slowed the movement of materials, dropped demand for recyclables and lowered value/raised costs of recycling
  - Biggest problem materials – plastic bags, food, “tanglers”
- At same time, lost primary Massachusetts glass recycler
  - Big impact on glass recycling



# DEP Response to Recycling Market Changes

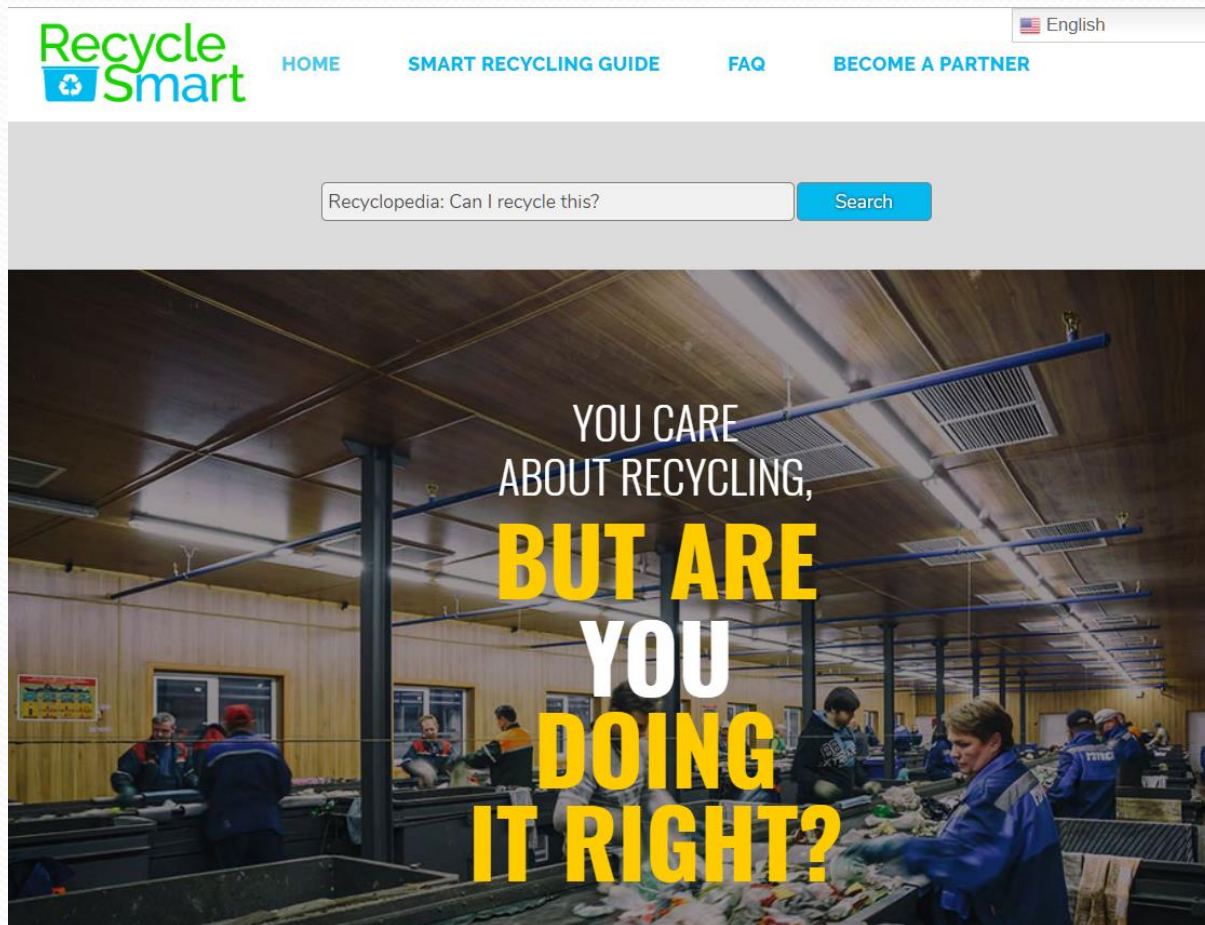
- Outreach and Education
- Recycling Assistance
- Recycling Business Development

# Outreach and Education

- Recycle Smart Education Initiative
  - [www.recyclesmartma.org](http://www.recyclesmartma.org)
  - Focus on top 4 contaminants
  - Partner program launched 9/26/18; over 100 partners already

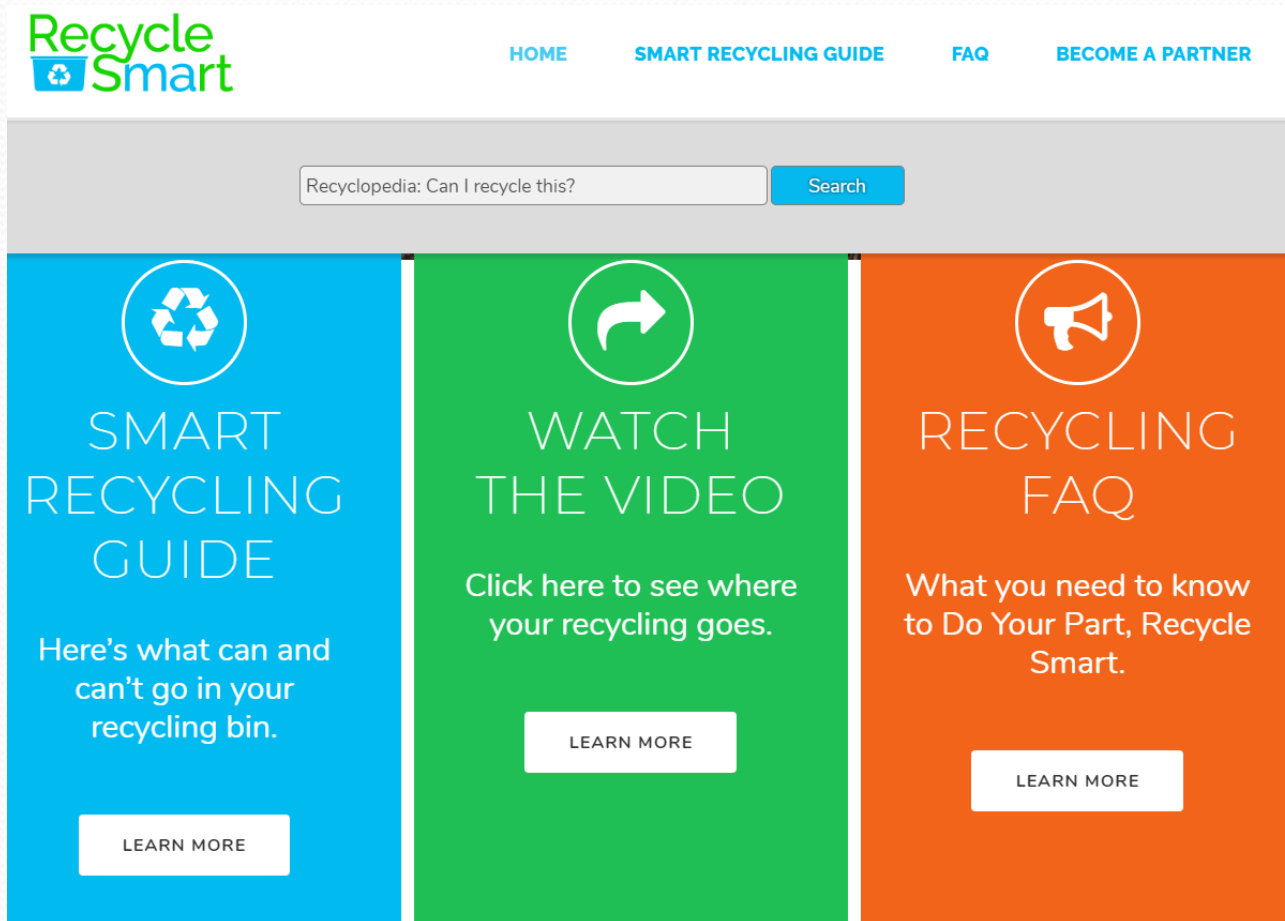


# RecycleSmart Web Site





# RecycleSmart Web Site



# RecycleSmart Web Site

[HOME](#)[SMART RECYCLING GUIDE](#)[FAQ](#)[BECOME A PARTNER](#)

## CAN I RECYCLE THIS?

[English](#) [Share](#)

[Recyclopedia](#) [Need help?](#)

[< Back](#) **Plastic bag**


**Plastic Film Recycling**

Many supermarkets and other retailers accept plastic bags and wraps for recycling at no cost. Visit the [Wrap Recycling Action Council](#) to find a nearby drop-off location.

Do not put plastic bags and wraps in your recycling bin. At recycling plants, they can get tangled in processing equipment, causing damage and worker injuries.

If no stores near you accept plastic bags and wraps for recycling, throw these items in the trash.

[< Back](#)



[Privacy](#) | [Terms of Service](#)

[List of Materials](#)Powered by [ReCollect](#)

# Recycling Assistance

- RecyclingWorks in Massachusetts assistance
  - Phone hotline – 888-254-5525
  - Email [info@recyclingworksma.com](mailto:info@recyclingworksma.com)
  - Website – [www.recyclingworksma.com](http://www.recyclingworksma.com)
  - College & University Forum – March 7, 2019



# Make sure that you:

- Conduct regular and timely communication with hauler on recycling quality and contamination
- Provide clear signage and direction
- Ensure materials collected are recyclable at MRFs
- Identify materials to collect separately

# Business Development

- Recycling Business Development Grants
- Round 1 awarded \$1 million in grants to six companies
  - 1 for mixed recyclables
  - 1 for glass
  - 1 for plastic
  - 3 for clean wood
- Round 2 currently evaluating
  - Received 9 applications totaling \$3.3 million
- Recycling Loan Fund loans



# Recycling Market Investments

- Seeing stabilization and gradual growth in recycling markets
- Trend of Chinese paper companies investing in US capacity
  - Still strong global fiber demand
- Local and regional investment in glass recycling operations



# What You Can Do

- Use & share RecycleSmart MA tools
  - Sign up to become a partner
  - [recyclesmartma.org](http://recyclesmartma.org)
- Request no-cost RecyclingWorks technical assistance
  - [recyclingworksma.com](http://recyclingworksma.com)
- Complete the LBE Recycling Checklist
  - For America Recycles Day (Nov. 15)

## Contact Information:

John Fischer

(617)292-5632

[john.fischer@mass.gov](mailto:john.fischer@mass.gov)

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# Recycling Materials Recovery Facility Overview

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