

# CLEANENERGYRESULTS

## Massachusetts Clean Energy Partnership for Drinking Water & Wastewater Facilities

**Massachusetts Clean Energy Conference (Worcester, MA), September 22, 2016**

Michael DiBara, MassDEP Project Manager



# Overview

- Background
  - Clean Energy Results Program (CERP)
- Clean Energy Partnership & Results
  - Water / Wastewater: energy efficiency & renewable generation
- Massachusetts Return-on-Investment
  - 2014 MA 'Gap' Grant Funding



# Clean Energy Results Program (CERP)



Work with facilities to advance energy efficiency  
& clean energy development

(technical & financial assistance)



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[www.mass.gov/dep/cerp](http://www.mass.gov/dep/cerp)

# Pathway to Energy Savings

(Technical & Financial Assistance)

## *Energy Efficiency & Clean Energy* Energy Assessment

Mass save®, Municipal Light Plants – (electric & gas)

MA DOER, Mass CEC, UMass Amherst & Lowell, USDA Rural Development, Mass Rural Water



## Identify Savings & Funding Sources

Connect & leverage all available incentives (\$) from energy utilities, government sources etc.



## Implement Plan

Implementation to achieve cost savings (\$) and reduce greenhouse gas emissions

# Tapping Partner Resources for Water Sector Benefits



- Mass Save® & MLP: Energy Efficiency Programs
- MA DOER: Green Communities Division
- MassDEP: Clean Energy Results Program
- MA CEC: Clean Energy & Innovation Options
- University of Massachusetts
  - **Amherst:** Clean Energy Extension, Industrial Assessment Center, Northeast CHP Center
  - **Lowell:** Center for Sustainable Production
- EPA New England
- USDA Rural Development
- Trade Associations:
  - MA Water Pollution Control Association
  - MA Water Works Association
  - MA Rural Water Association
  - American Water Works Association
  - Hydraulic Institute

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# Innovative Wastewater Technology Grant

**Implement Pilot projects** that will do one or more:

- *Reduce energy consumption;*
  - *Recover heat, clean water, nutrients, or electricity;*
  - *Remediate nutrients*
- 
- ❖ Total Funding Available: \$500,000
  - ❖ Maximum Grant Award: \$150,000
  - ❖ Rolling Application Period End: December 16th, 2016
  - ❖ Duration of pilots should range from 8-12 months
  - ❖ Required Cost Share- At least 50% (combination of in-kind and cash)
  - ❖ Anticipated Total Awards: **3-6 awards**
- 
- *Contact Patricia Burke, 617-315-9320, [pburke@masscec.com](mailto:pburke@masscec.com)*

# Step 1: Do an Energy Audit

## Drinking Water Treatment Plant: Pumping and VFD's

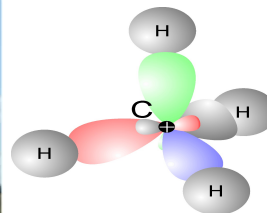
- Total project cost: \$358,813
- National Grid incentive: \$251,169
- Cost to customer \$107,644
- Simple payback 9 months
- Estimated annual electric energy savings 1,445,267 kWh



- **Estimated annual cost savings \$145,538 (\$12,128 / mo. reduction)**

- CO<sub>2</sub> Lifetime reduction 953 Tons
- SO<sub>2</sub> Lifetime reduction 2 Tons

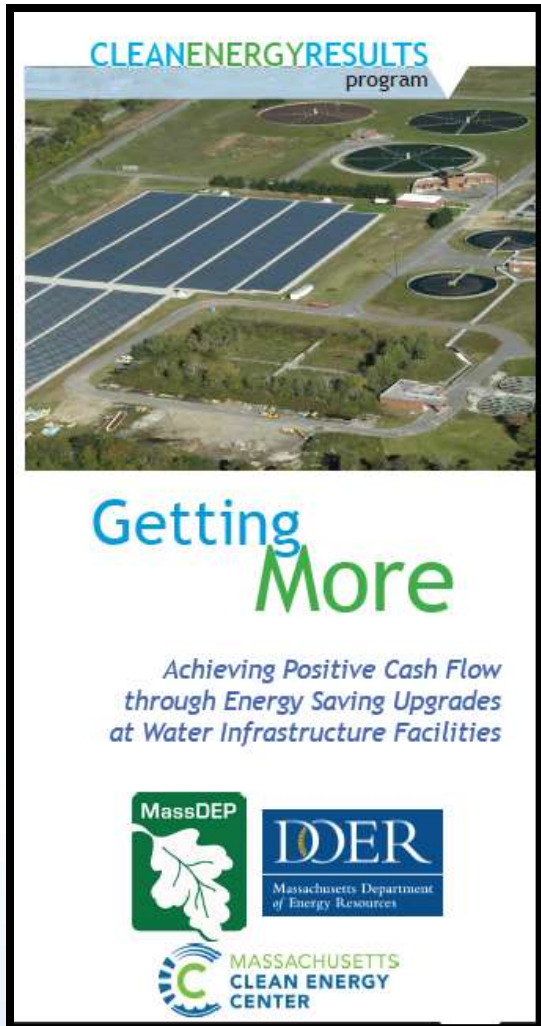
# Bundling Energy-Saving Projects



$$\text{Cash Flow (\$)} = \text{Revenues} - \text{Costs}$$



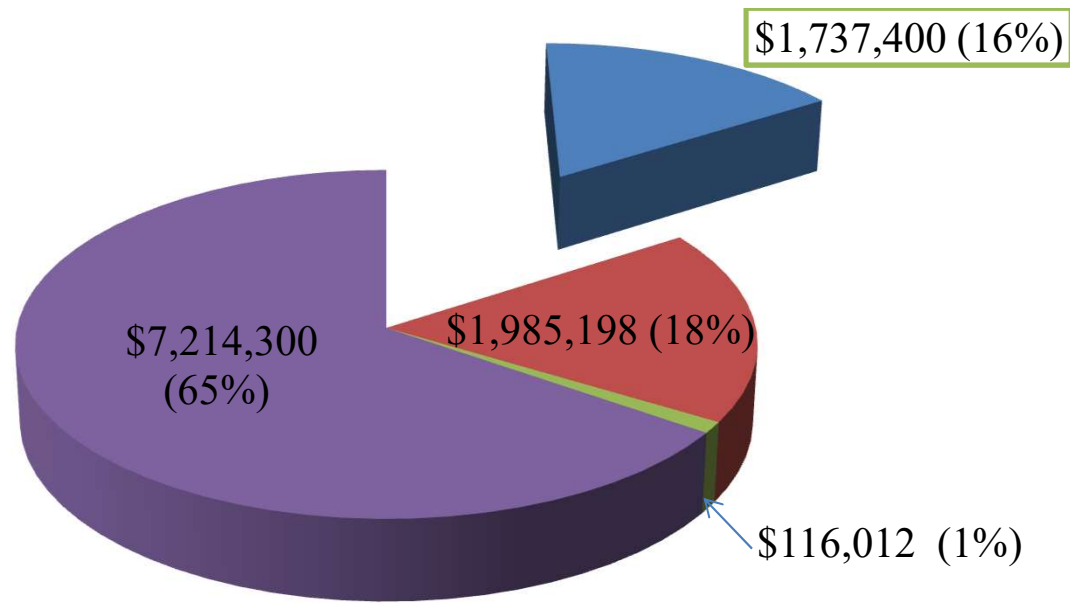
# Reducing Operating Costs & Reinvesting in your Facilities Future



- *Energy-savings have provided a “**positive**” **Return-on-Investment** for facilities & reduced their GHG emissions*

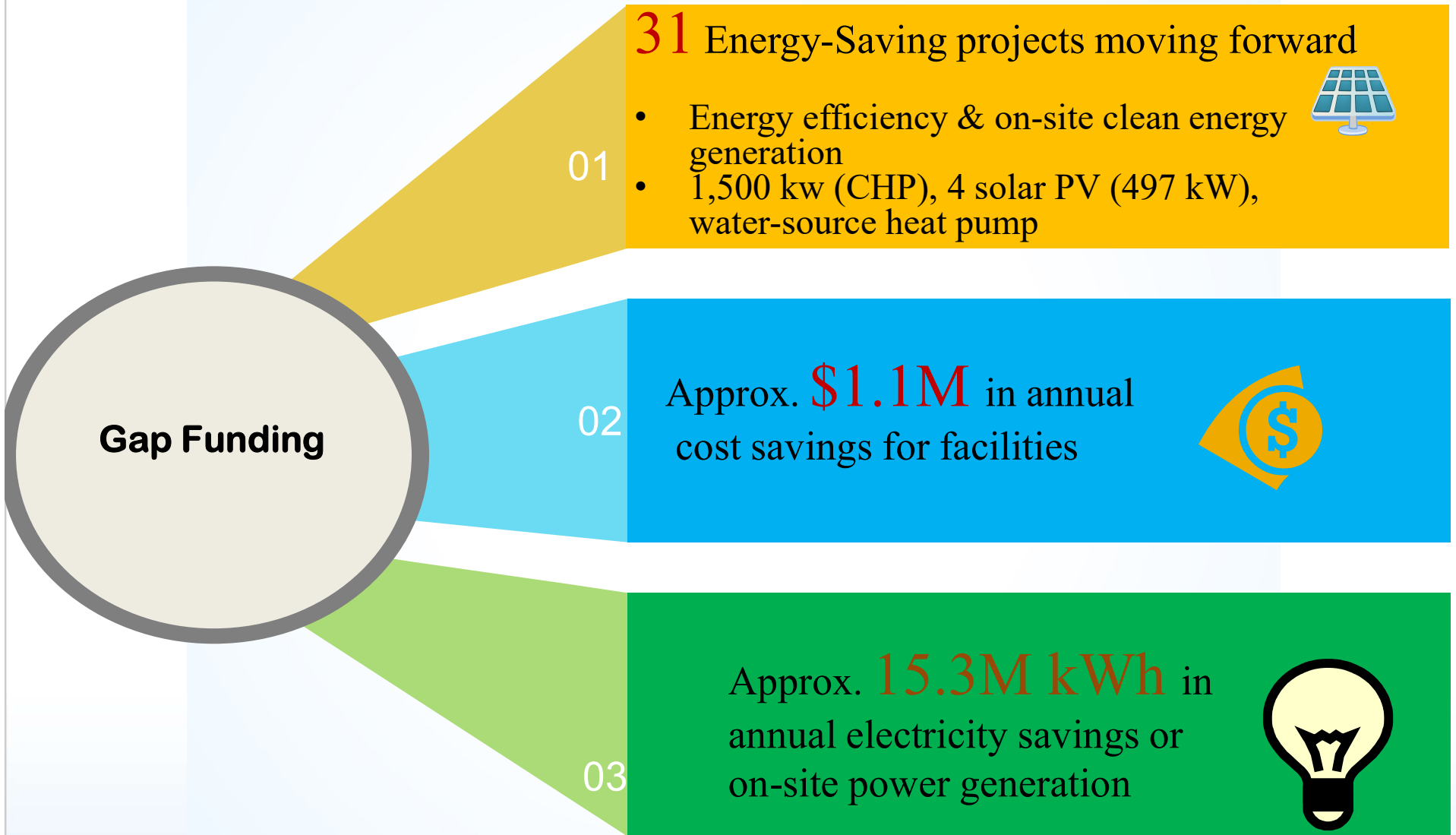


# Massachusetts \$ 1.7M “Gap Grant” Moves \$11M of Clean Energy Projects Forward



- Gap Grant Funding Approved
- Mass Save & MLP Incentives
- Other Grants
- Municipal Contribution min. 10%

# Projected Results: 2014 'Gap' Funding



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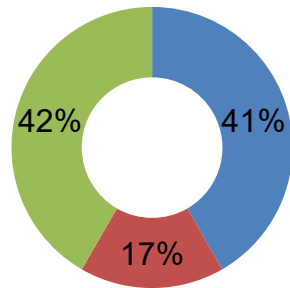
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# 'Gap' Funding Implementation Projects

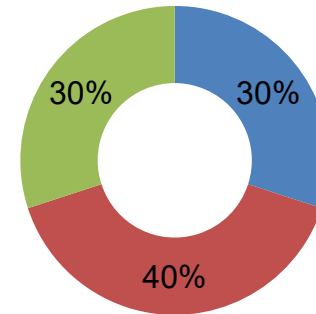
## Drinking Water Systems

■ Small Facility ■ Medium Facility ■ Large Facility



## Wastewater Systems

■ Small Facility ■ Medium Facility ■ Large Facility

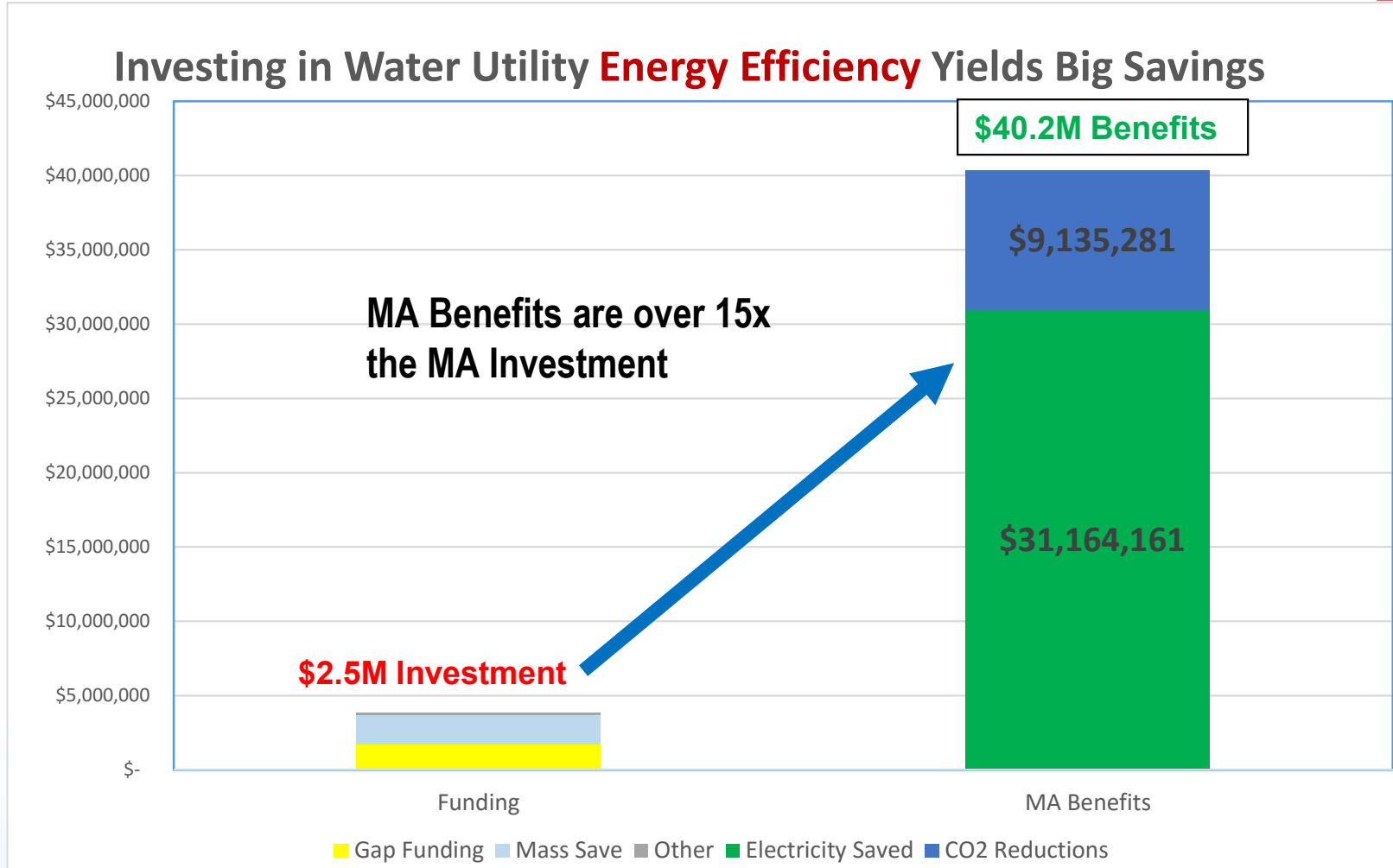


Michael P. Buffoni, Stockbridge Water Superintendent shows off their new heat pump # 2



Heather Blakeley, Acting Southbridge Director of Public Works shows off their new effluent pump motors at their wastewater plant

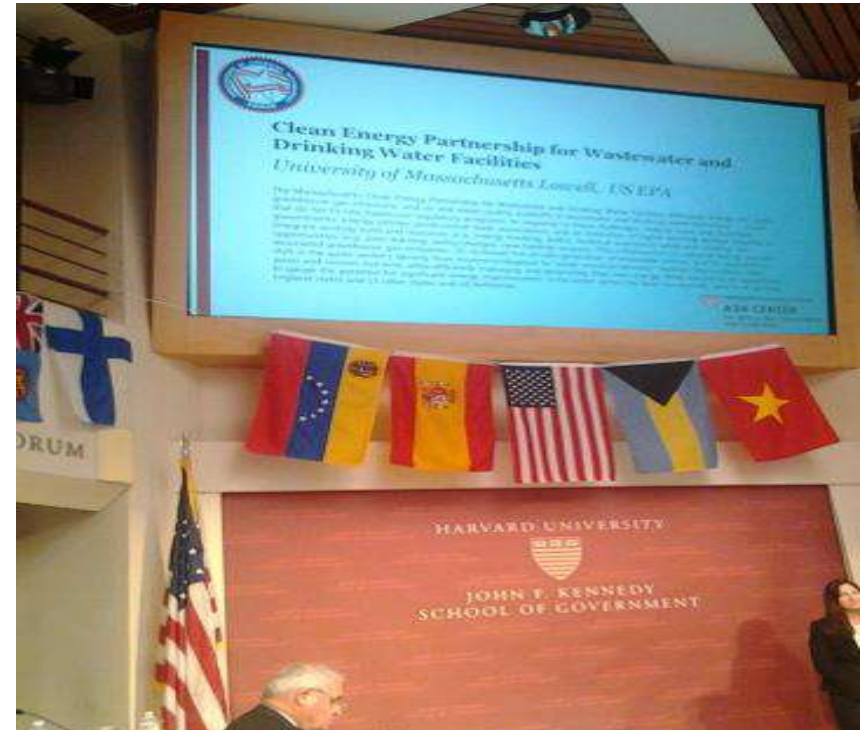
# 2014 Gap Funding Cost / Benefit Analysis, American Water Works Association, D.C. (2016)



# Proud to be 1 of 5 Finalist in the Harvard Kennedy School's 2015 Innovations in American Government Competition



Massachusetts Clean Energy Partnership is Harvard Ash Center 2015 'Innovation in Government' Finalist



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[www.mass.gov/dep/ceerp](http://www.mass.gov/dep/ceerp)

*In summary,*

*Facilities can continue to **pay their existing energy bills***

*Or*

*they can act on their identified **energy-saving opportunities***



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[www.mass.gov/dep/cep](http://www.mass.gov/dep/cep)



# For 'Energy-Saving' Assistance

Michael DiBara, MassDEP

[Michael.DiBara@state.ma.us](mailto:Michael.DiBara@state.ma.us)

508-767-2885

Clean Energy Results Program Website:

<http://www.mass.gov/dep/cleanenergy.htm>



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