Greener Cleanups Under the MCP

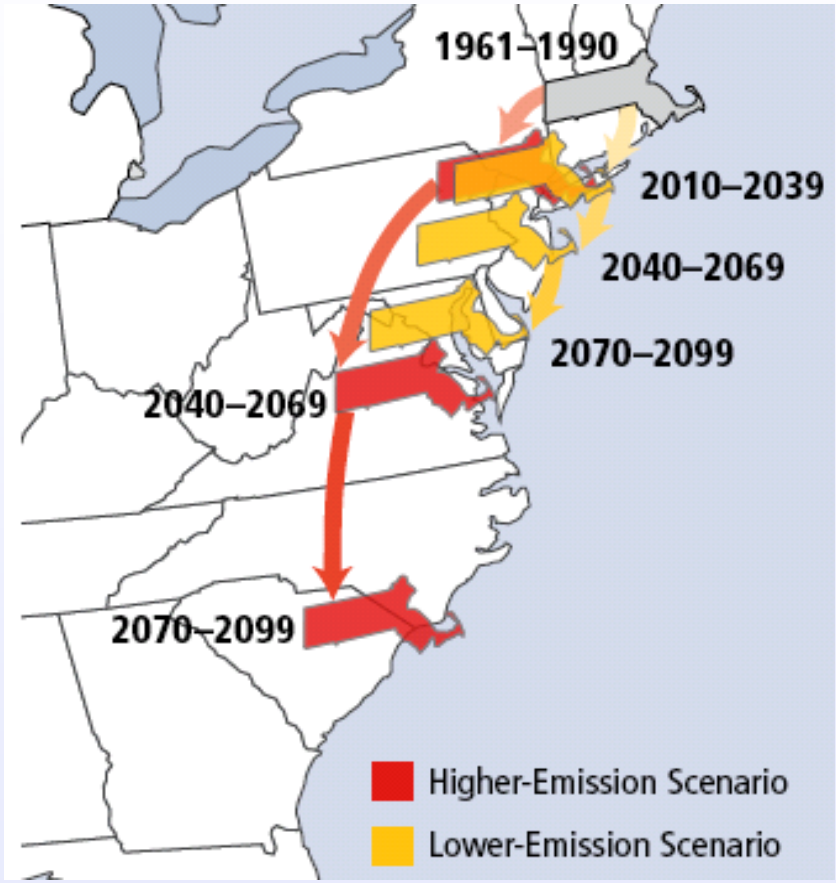
MassDEP/LSPA Training Course

Wednesday, December 10, 2014 &
Thursday, December 11, 2014
Westborough, Massachusetts

Thomas M. Potter, Clean Energy Development Coordinator

Why Greener Cleanups in Massachusetts?

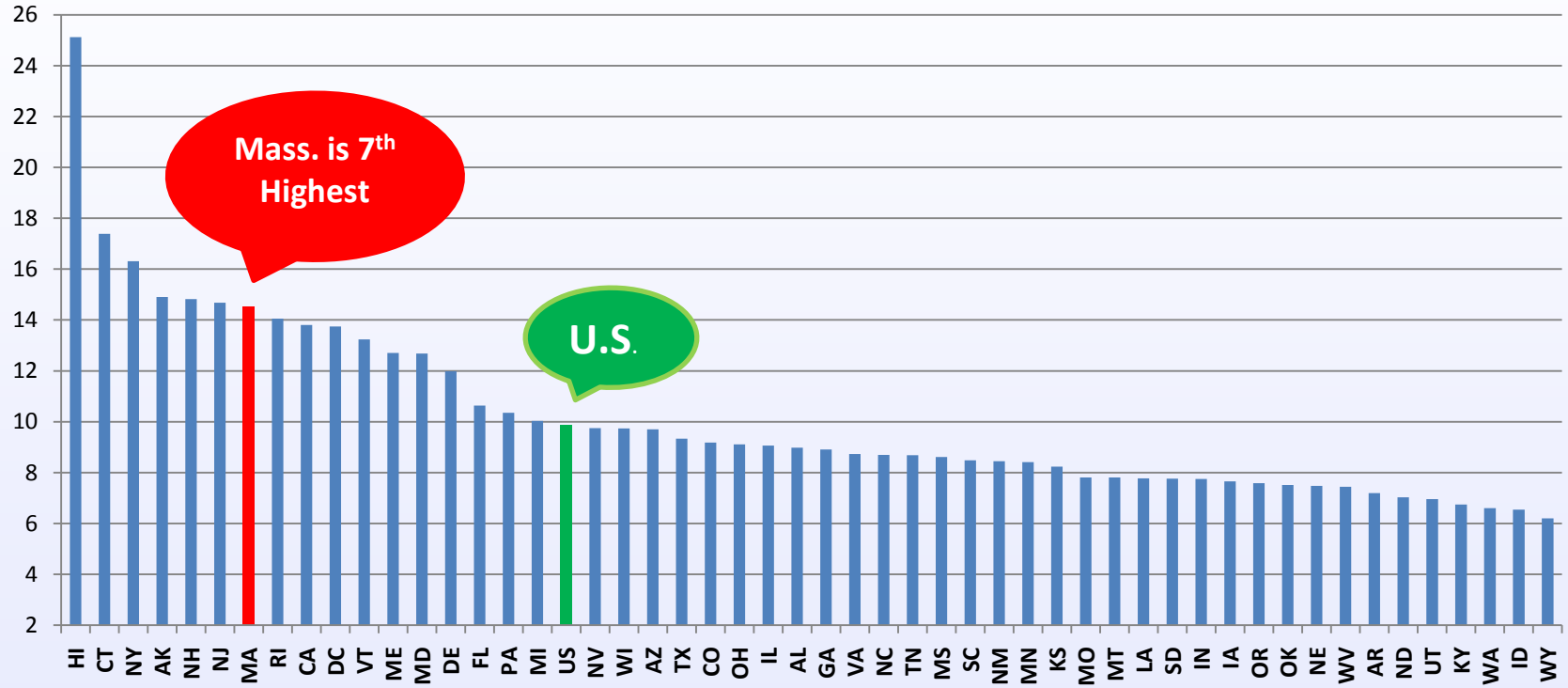
- Administration Mandates & Goals
- Clean Energy Results Program (CERP)
- Bureau of Waste Site Cleanup (BWSC) CERP Goals
- Jobs & Opportunity



Source: UCS, 2007

Mass. Has High Electricity Prices!

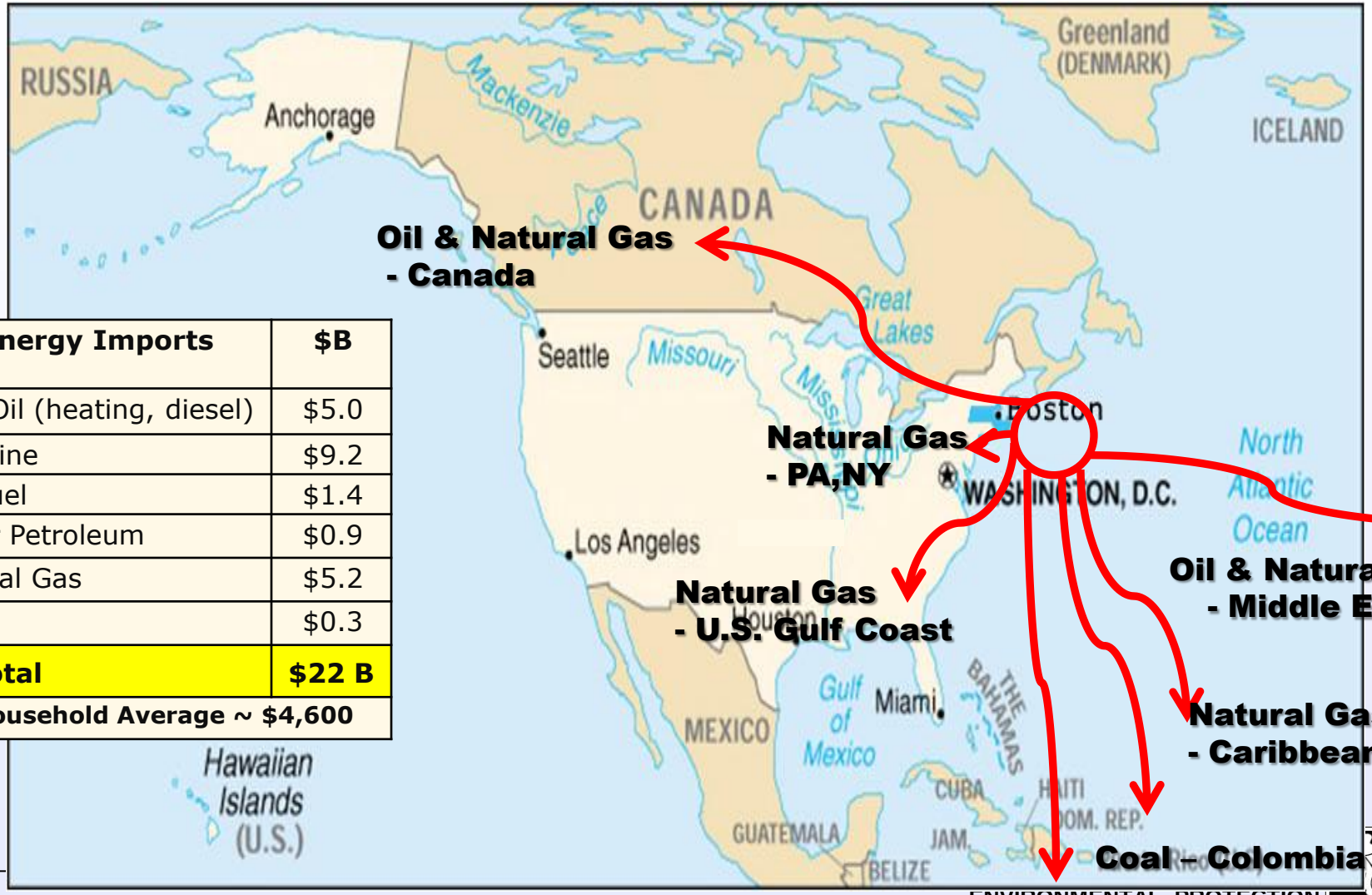
2010 Average Retail Electricity Price c/kWh



Source: EIA Form 826

Energy Dollars Flow Out of MA

We spend $22B per year on energy; 80% leaves MA -- $18B



MA Energy Imports 2008	$B
Fuel Oil (heating, diesel)	$5.0
Gasoline	$9.2
Jet Fuel	$1.4
Other Petroleum	$0.9
Natural Gas	$5.2
Coal	$0.3
Total	**$22 B**
Per Household Average ~ $4,600	

ENVIRONMENTAL PROTECTION

Leadership in Climate and Clean Energy

Since 2007 –

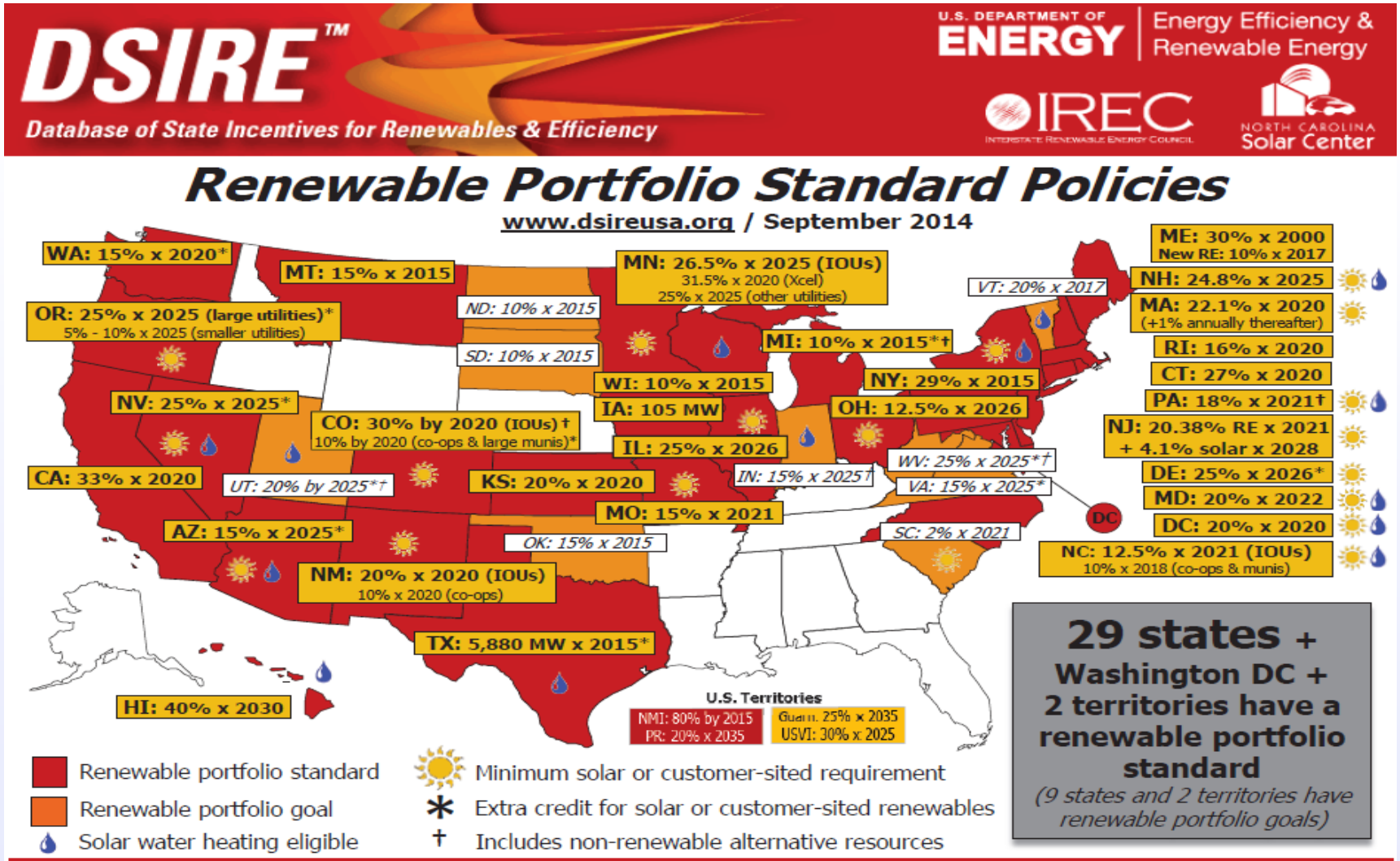
An integrated approach to:

- Lower energy costs
- Mitigate volatility
- Grow clean energy sector
- Become more energy independent
- Improve the environment

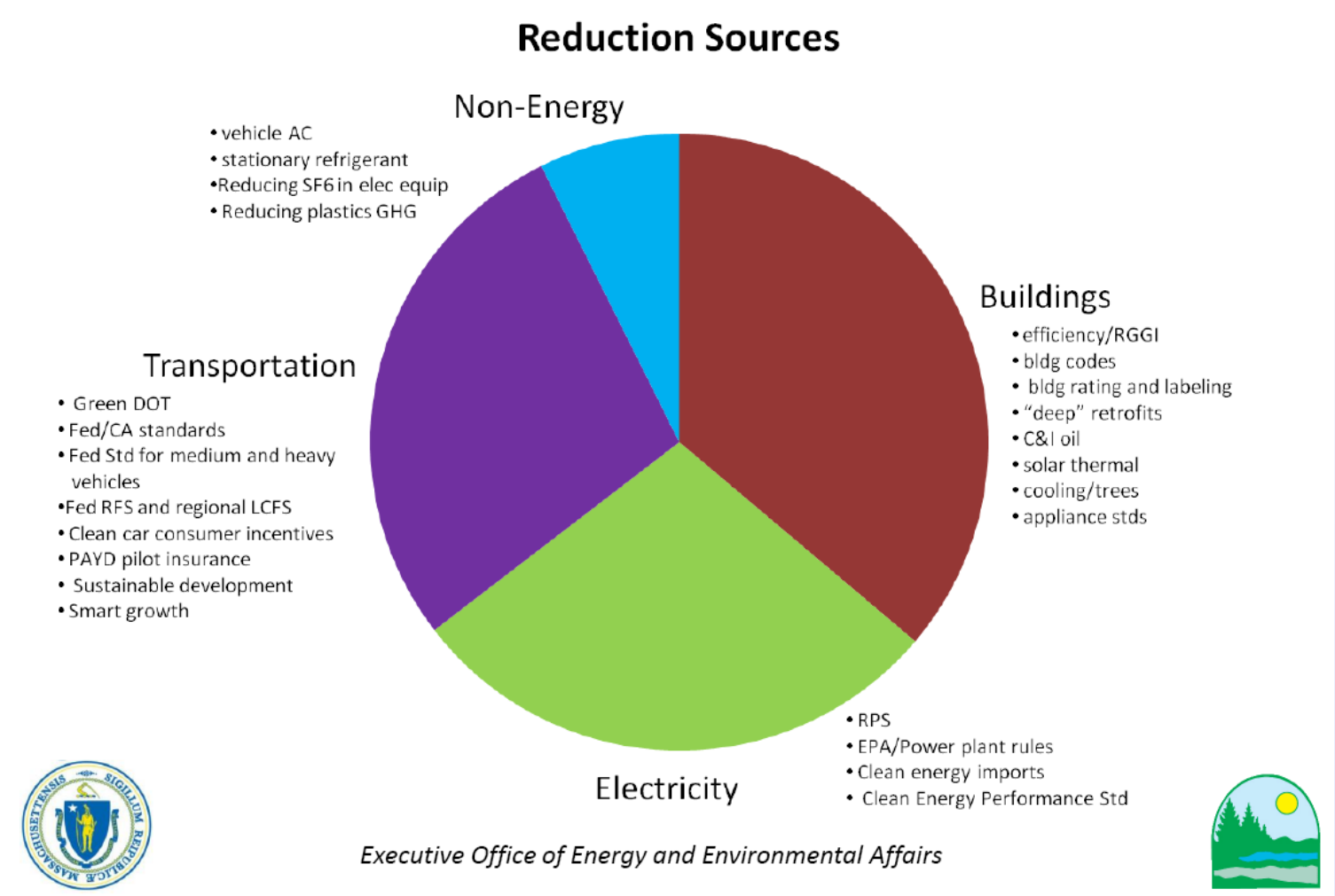
Massachusetts Clean Energy

- 2007 established **Executive Office of Energy & Environmental Affairs**
- 2008 **Green Communities Act (GCA)**
  - Supports Development of Clean Energy Resources
  - Expands Efforts to Promote Energy Efficiency
  - **Increased the Renewable Energy Portfolio Standard (RPS) to 1% per year.**
  - **Goal of 15% "New Sources" by 2020 (currently 9%)**
- 2008 **Global Warming Solutions Act**
  - Comprehensive Program -> Climate Change
  - **Goal 25 % Below 1990 GHG levels by 2020**

ENERGY: RPS Programs Nationally

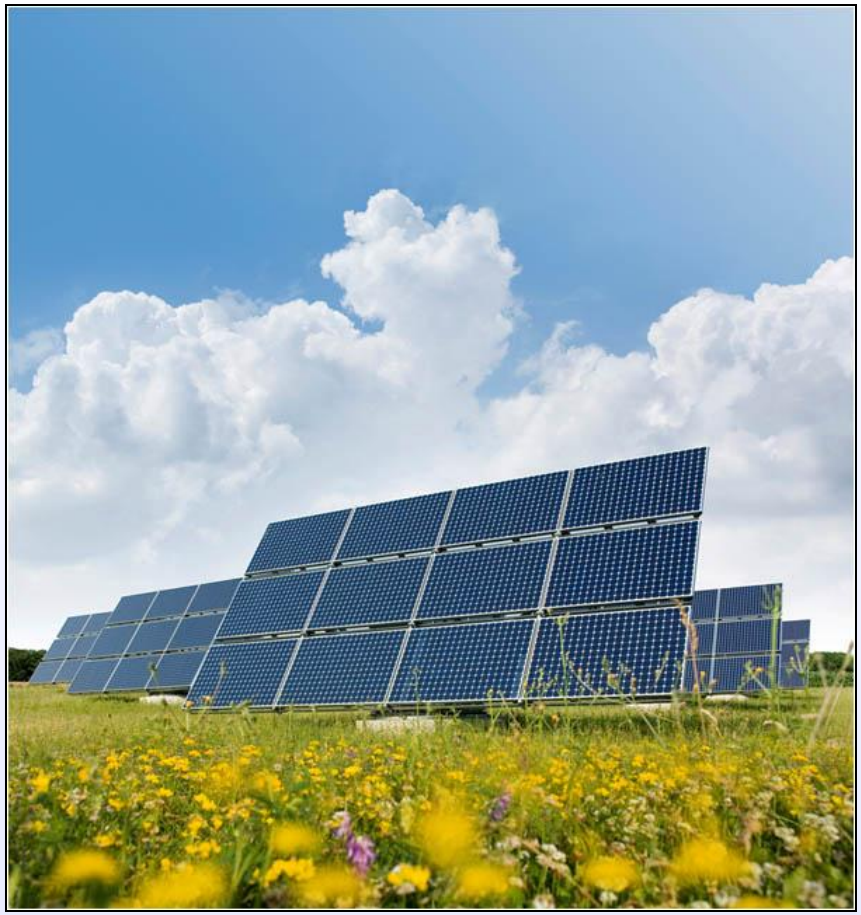


EMISSIONS: GHG Emission Reduction Opportunities



CLEANENERGYRESULTS

- Launched 2011
- **Promotes Clean and Efficient Sources of Energy at MassDEP Regulated Sites (where we have authority or control)**
- Maximizes MassDEP's Unique Expertise to Overcome Permitting & Siting Obstacles
- **Create economic growth and employment opportunities**



Massachusetts Department of ENVIRONMENTAL PROTECTION

CLEANENERGYRESULTS

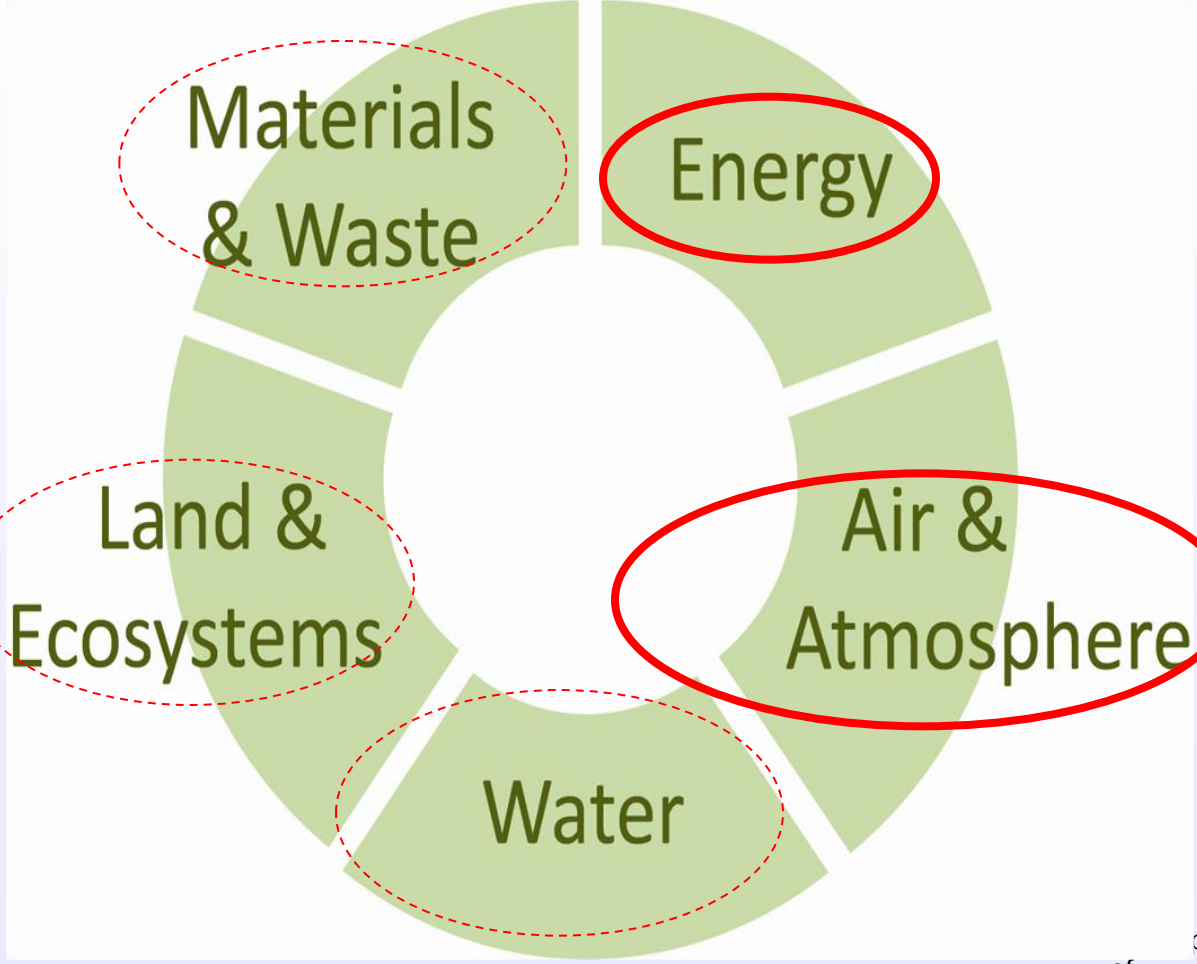
- RPS/APS Projects, including:
  - Solar Photovoltaic
    - Goal of 1,600 MW
    - Currently **687 MWs**
  - Wind
    - Goal of 2,000 MW
    - Currently **107 MWs**
  - Anaerobic Digestion
  - Renewable Thermal
  - Sustainable Biomass
- Energy Efficiency
- Energy Conservation

COMMISIONER'S CERP GOAL

"Promote the use of Green Remediation/ Greener Cleanups at state and federally regulated contaminated sites"

Brockton Brightfields, 425 kW solar PV

Core Elements of Greener Cleanup



WASTE: "Landfills Last": New Materials Management Framework

- **2008 Goal -** Significantly reduce the waste deposited in landfills

- **Waste Bans**
  - Asphalt Pavement, Brick & Concrete
  - Clean Gypsum Wallboard
  - Commercial Food Waste (Effective October 1, 2014)
  - Ferrous & Non-Ferrous Metals
  - Leaves & Yard Waste
  - Recyclable Paper, Cardboard & Paperboard
  - Treated & Untreated Wood & Wood Waste (Banned from Landfills Only)

WATER: Management of Water Resources

- **2008 Goal** - Work to bolster water quality and quantity by promoting best practices for better conservation, management and protection

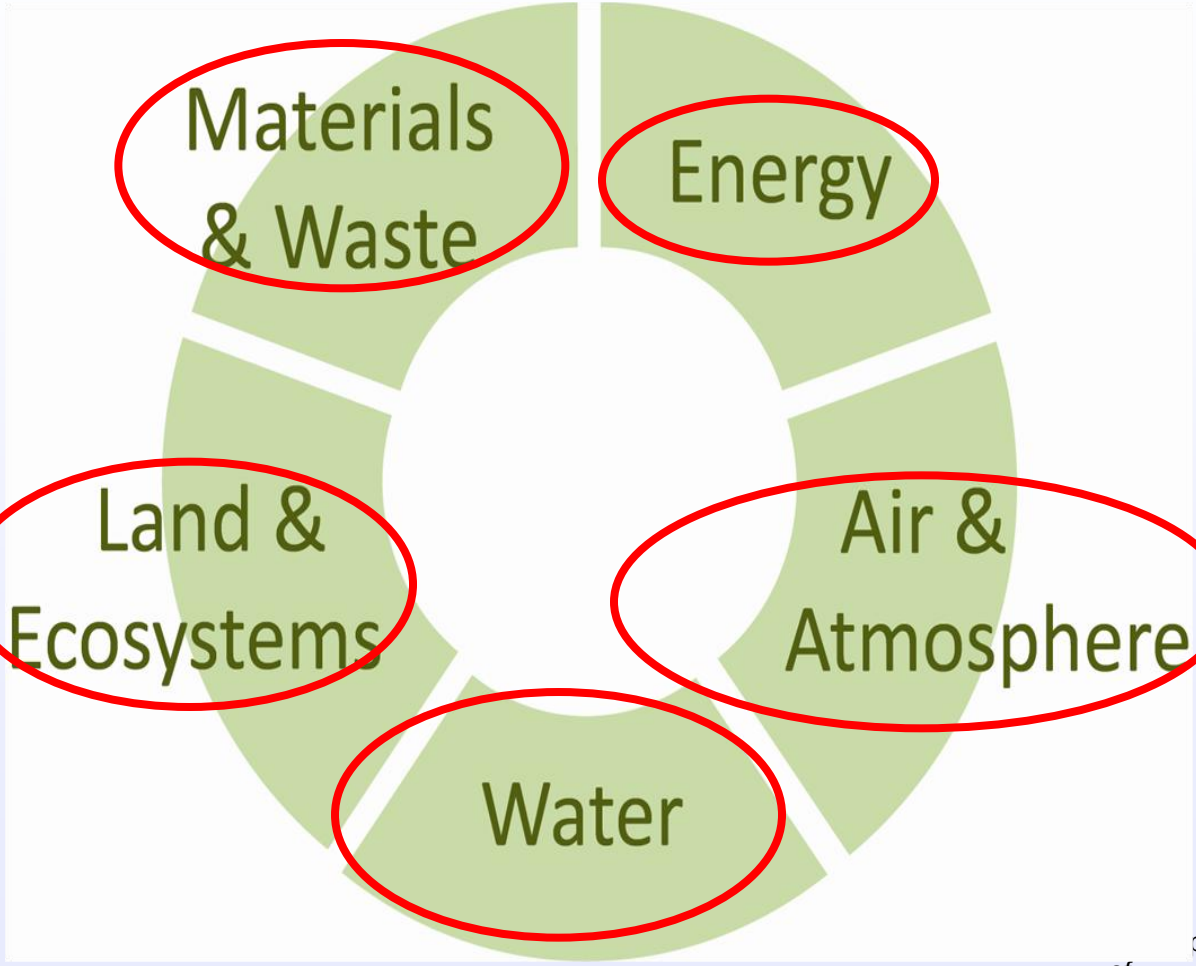
- **Major Activities:**
  - Water Management Act
  - *SWMI – Sustainable Water Management Initiative*

Ipswich River:

LAND: Protecting Land And Ecosystems

- Minimize areas that need use limitations
- Minimize soil and habitat disturbance or destruction
- Use native species to support habitat

Core Elements of Greener Cleanup



2011 Regulatory Reform & 2014 MCP Amendments

- In 2011, MassDEP launched a major initiative to look for possible improvements to all of the agency's regulatory areas.
- Some of the reforms also remove regulatory barriers to clean energy projects and/or establish opportunities

MassDEP Efforts (2012 – 2014)

- **GREENER CLEANUPS WORKGROUP**
  - Engage regulated community/stakeholders
  - Quarterly Meetings since 2012
- **REGULATORY AMENDMANTS** (effective April 2014)
  - include provisions to address "core elements" in support of Commonwealth's energy and emission reduction mandates of 2008
- **GREENER CLEANUPS "GUIDANCE"** (effective October 2014)
  - Policy advocates use of ASTM Standard Guide for Greener Cleanups (E2893-13, November 2013)
- **TRAINING**
  - December 2014

310 CMR 40.0191
Response Action Performance Standard (RAPs)

- (3) The application of RAPS shall be protective of health, safety, public welfare and the environment and shall include, without limitation, in the context of meeting the requirements of this Contingency Plan, consideration of the following:
  - *(e) eliminating or reducing, to the extent practicable and consistent with response action requirements and objectives, total energy use, air pollutant emissions, greenhouse gases, water use, materials consumption, and ecosystem and water resources impacts resulting from the performance of response actions through energy efficiency, renewable energy use, materials management, waste reduction, land management, and ecosystem protection.*

310 CMR 40.0858
Detailed Evaluation Criteria (for Remedy Selection)

the remedial action alternatives identified by the initial screening shall be evaluated using the following criteria:

- (4) The comparative costs of the alternatives, including:
  - (b) costs of environmental restoration, potential damages to natural resources, including consideration of impacts to surface waters, wetlands, wildlife, fish and shellfish habitat; and
  - *(c) the relative total consumption of energy resources in the implementation and operation of the alternatives, and externalities associated with the use of those resources, including greenhouse gases and other air pollutants.*

"Consideration"

- Contribution to MA Energy and Emissions Mandates
- Reduced Cost
- Corporate Commitment
- Users determine specific cleanup phase/response action for application

Greener Cleanups Guidance (WSC #14 – 150)

- DRAFT
  - May 2014
- COMMENTS
  - July 2014
- FINAL EFFECTIVE
  - October 2014

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
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DEVAL L. PATRICK
Governor

RICHARD K. SULLIVAN JR.
Secretary

DAVID W. CASH
Commissioner

GREENER CLEANUPS GUIDANCE
WSC #14 – 150

This document provides guidance in support of 310 CMR 40.0191 and 310 CMR 40.0858 on recommended approaches that maximize the net environmental benefit when conducting response actions at disposal sites regulated under the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000. Recommended approaches include adherence to available industry standards and guidance as described further in this document.

This document is intended solely as guidance. It is not a regulation, rule or requirement, and should not be construed as mandatory. It does not create any substantive or procedural rights, and is not enforceable by any party in any administrative proceeding with the Commonwealth. This document provides guidance on approaches MassDEP considers acceptable for meeting the general requirements set forth in the MCP. Parties using this guidance should be aware that other acceptable alternatives may be available for achieving and documenting compliance with the applicable regulatory requirements and performance standards of the MCP.

Benjamin J. Ericson
Assistant Commissioner
Bureau of Waste Site Cleanup

October 20, 2014

This information is available in alternate format. Call Michelle Waters-Ekanem, Diversity Director, at 617-292-5751. TDD# 1-866-539-7622 or 1-617-574-6868
MassDEP Website: www.mass.gov/dep
Printed on Recycled Paper

Compliance Through Available Industry Standards & Guidance

- **USEPA, CLU-IN**, Green Remediation Focus (http://cluin.org/greenremediation/)
- **ASTM** International, November 2013, *Standard Guide for Greener Cleanups*, E2893-13
- **ITRC**, November 2011, *Technical/Regulatory Guidance, Green and Sustainable Remediation: A Practical Framework* (GSR-2).

Cleanups Required!

- Actions and remedies must eliminate, mitigate or prevent certain conditions, including an **Imminent Hazard**, a **Condition of Substantial Release Migration**, a **Substantial Hazard** and a **Critical Exposure Pathway**

- Greener cleanup considerations may not be used to override these or any other MCP requirements.

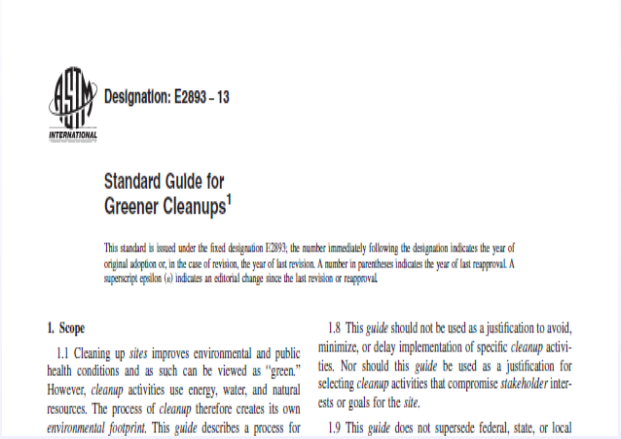
Time-Critical Situations

- Time-critical situations (e.g., “2-hour” and “72-hour” reportable conditions under the MCP)are likely are not suitable for initial consideration of greener cleanup practices.

- However, once immediate risks and their causes have been addressed, greener cleanup practices should be considered.

MassDEP Recommendation

MassDEP strongly recommends use of the *ASTM Standard Guide for Greener Cleanups* ("the ASTM Guide") (Designation: ASTM E2893-13, November 2013)



Designation: E2893 – 13

Standard Guide for Greener Cleanups[1]

This standard is issued under the fixed designation E2893; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 Cleaning up *sites* improves environmental and public health conditions and as such can be viewed as "green." However, *cleanup* activities use energy, water, and natural resources. The process of *cleanup* therefore creates its own *environmental footprint*. This *guide* describes a process for

1.8 This *guide* should not be used as a justification to avoid, minimize, or delay implementation of specific *cleanup* activities. Nor should this *guide* be used as a justification for selecting *cleanup* activities that compromise *stakeholder* interests or goals for the *site*.

1.9 This *guide* does not supersede federal, state, or local

The "Guide" vs. the MCP

(Highlights from Appendix A of MassDEP's Greener Cleanups Guidance)

GUIDE

- Cleanup Phase
- Cleanup Program
- Lead Environmental Professional

MCP

- Response Action
- Massachusetts Contingency Plan (or MCP, 310 CMR 40.0000)
- When conducting MCP Response Actions in adherence to this Guidance and the ASTM Guide, a *Lead Environmental Professional* applies only to the Licensed Site Professional (LSP) of Record

MCP Reporting

- The ASTM Guide includes a Technical Summary Form (found in its Appendix X2)
- No need to reiterate certain site specifics (such as its location, history, contaminants of concern and potential receptors)
- Tables prepared as required by the ASTM Guide, should be included as “greener cleanup” section in the body of the MCP report or provided in an appendix to the report.

About those BMPs

REQUIRED by Law/Regulation

- *BMPs* that are **required** under federal and/or state law or regulation **should be** implemented and documented

NOT Permissible by Law/Regulation

- BMPs that are **not permissible** under federal and/or state law or regulation **should not be** implemented.

Example A: Excavation and Surface Restoration

- **Asphalt Pavement:** from roads, parking lots, and similar sources
- **Brick and Concrete:** from construction activities and demolition of buildings, roads, bridges, and similar sources

Example A = CONSIDER WHEN APPLICABLE

[Reuse in road construction (reclaimed asphalt pavement)/ Reuse as structural fill]

		Category	BMP	Energy	Air	Water	Materials and Waste	Land and Ecosystems	Excavation and Surface Restoration
YES	6	Materials	Use recycled content (for example, steel made from recycled metals, concrete and/or asphalt from recycled crushed concrete and/or asphalt, respectively, and plastic made from recycled plastic; tarps made with recycled or biobased contents instead of virgin petroleum-based contents)				X		X
YES	9	Materials	Link a deconstruction project with a replacement construction project (for example, the same site of the deconstruction project or a local current construction or renovation project) to facilitate reuse of clean salvaged materials				X		X

Example B: Soil Vapor Mitigation (AEPMM)

- Use of a Sub-slab Depressurization System (SSDS) to mitigate vapor intrusion when it is being operated as an "**ACTIVE EXPOSURE PATHWAY MITIGATION MEASURE**" (mechanical or electro-mechanical device) ROS, Permanent Solutions with Conditions or Temporary Solutions.

Example B = Permissible & NOT Permissible

		Category	BMP	Energy	Water	Materials and Waste	Land and Ecosystems	Vapor Intrusion Mitigation
YES	6	Power and Fuel	Use on-site generated renewable energy (including but not limited to solar photovoltaic, wind turbines, landfill gas, geothermal, biomass combustion, etc.) to fully or partially provide power otherwise achieved through onsite fuel consumption or use of grid electricity	X				X
YES	9	Power and Fuel	Use solar power pack system for low-power system demands (for example, security lighting, system telemetry)	X				X
NO	19	Power and fuel	Use passive sub-slab depressurization system to mitigate vapor intrusion	X				X

INCENTIVES

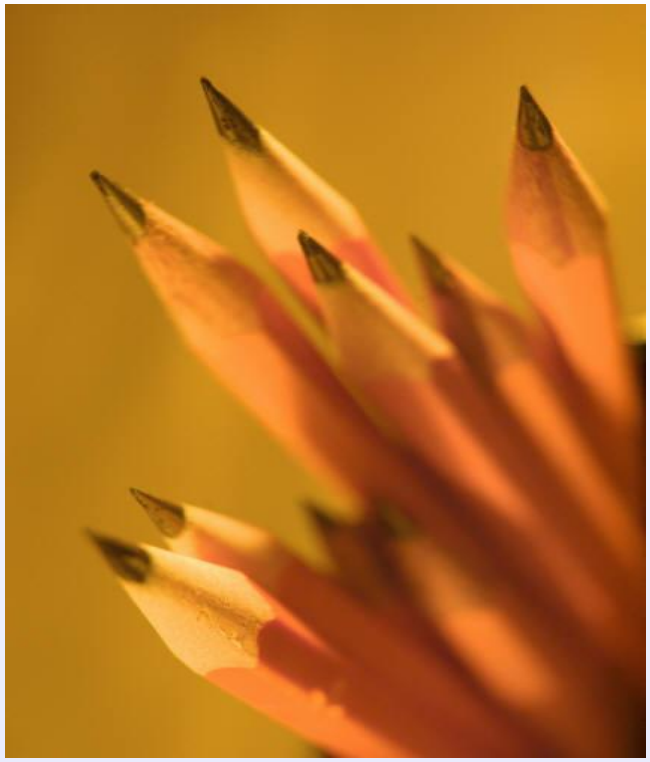
- Energy Efficiency & Renewable Energy
  - Federal Tax Credits for RE technology
  - State Grants and incentives
  - www.DSIRE.org

- MassDEP Public Recognition/Awards for Projects
  - 2015!

MassDEP/LSPA Clean Energy Workshop Series

1. **Renewable Thermal/Geothermal with BRP & LSPA**
   - *Tentative* Feb/Mar 2015
   - CEU's TBD

2. **Solar PV on Contaminated Land II**
   - *Tentative* Apr/May 2015
   - CEU's TBD



Thank You!

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Clean Energy Results Program Website:

http://www.mass.gov/eea/agencies/massdep/climate-energy/energy/