



The Massachusetts Executive Office of Energy & Environmental Affairs (EEA)
Global Warming Solutions Act (GWSA)
Implementation Subcommittees
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Clean Energy & Climate Plan for 2020: Summary Reports

June 3, 2013



Buildings, Energy Efficiency, and Demand-Side Management Subcommittee Highlights

Strategy Implementation - Progress Rating

- Low: Expand Energy Efficiency to Oil in Commercial and Industrial buildings (0.1 %) ¹
Federal Appliance Standards (0.6%)

- Medium: All Cost-Effective Energy Efficiency/ 3-Year Plans (7.1%)
Advanced building codes (1.6 %)
Leading by Example (cross-cutting)

- High: Green Communities (cross-cutting)
Building rating & labeling (supports other energy efficiency strategies)
Solar thermal (0.1 %)
Tree Planting (0.1%)

Key Findings & Recommendations

The 3-year plans for utility funded energy efficiency is by far the biggest element of the 2020 plan from the buildings sector. The new 2013-2015 plans have been ratified by the DPU, however, their current projected savings are less than anticipated in the 2020 plan. This is primarily explained by the drop in natural gas prices and the economic downturn – which help reduce the Massachusetts green house gas (GHG) footprint in other ways.

The second major source of savings is Advanced Building Codes – this is also not expected to meet the emissions targets in the plan for two reasons: a) the downturn in the construction market and b) the delay in rolling out new energy codes. It is expected that the 2012 IECC base building code will be adopted in 2013 with implementation in the field beginning in mid-2014. Approval and timing for a revised stretch energy code is less certain.

Other initiatives that support these main two strategies are moving forwards:

- a) Deep energy retrofits – there is now a Mass Save program for National Grid gas customers, and going forwards this strategy will be included in All Cost-Effective Energy Efficiency.
- b) Building rating and labeling, has been boosted by the disclosure ordinance adoption by the City of Boston.

¹ Reflects the percent reduction in GHG emissions (compared to 1990 levels) that is projected for each strategy in the *Clean Energy and Climate Plan for 2020*



c) The Solar thermal market is developing well with incentives from the MassCEC Commonwealth Solar Thermal program, and a significant pilot in low-income housing.

d) Research on the benefits of urban tree canopy is encouraging, with the next step being an urban forestry pilot

project.

Federal appliance standards are in the 'Low' category, due to the federal furnace standards not being implemented as planned this May. The furnace standards are perhaps the most significant residential standard in our climate zone and will be delayed by up to 7 years due to the lengthy standards setting process. Oil heating legislation has been filed again, but focuses primarily on residential not commercial or industrial users.

In light of the expected shortfall in GHG reductions from the two primary policies, the sub-committee has been soliciting input on additional, supplementary strategies for the buildings sector.

Sub-committee Discussion Topics

There were a number of potential supplementary strategies proposed and discussed within this sector:




1. Expanding participation in the Commercial Real Estate Sector:
 - a. DOER and the PAs plan to convene a CRE working group to identify opportunities for greater integration and participation in the 3 year EE plans.
 - b. Multi-family housing
 - c. A number of smaller initiatives, including Leading by Example, Expanded tree planting.

Questions for the IAC:

1. Is there public support for building codes/standards for existing buildings – for example adding energy code requirements to rental housing?
2. What building retrofit strategies are consistent with the MA 2050 goals. Should natural gas infrastructure be expanded, or can renewable thermal markets grow to serve space & water heating needs?

Energy Generation and Distribution Subcommittee Highlights

Strategy Implementation - Progress Rating

-  Low: -
-  Medium: Clean Energy Imports (5.4%)²
Offshore Wind; Clean Energy Performance Standard
-  High: Renewable Portfolio Standard (1.2%); EPA Power Plant Rules (1.2%)
RGGI

Key Findings & Recommendations

The Clean Energy and Climate Plan includes 6 strategies grouped in the Energy Generation and Distribution subcommittee, that together are estimated to contribute a reduction of 7.7% in greenhouse gas emissions by 2020. The retiring of two coal plants in the state is going forward as expected. The Renewable Energy Portfolio Standard (RPS) is on track and the development of solar photovoltaic (PV) is increasing significantly with the Governor's goal of 250 MW reached 4 years early and DOER preparing for the implementation of the next goal of 1,600 MW. The RGGI program review resulted in a significantly reduced cap and improved guidelines. An analysis of the risks and opportunities of a Clean Energy Performance Standard is underway and will be finalized at the end of the summer of 2013. The largest contribution to emission reductions in this group of strategies is expected from the import of clean power from Canada. This is the most challenging part of this group of strategies.

Discussion Topics

- The IAC supported increasing the ambition level for developing renewable heating and cooling, and suggested approaching it as a broad strategy encompassing portfolio standards, workforce training, building codes and efficiency programs. Is it possible to prioritize groups of customers that should get access to renewable thermal technologies and what may be the best strategy to reach those customers?

² Reflects the percent reduction in GHG emissions (compared to 1990 levels) that is projected for each strategy in the *Clean Energy and Climate Plan for 2020*



Transportation, Smart Growth and Land Use Subcommittee Highlights June 2013

Strategy Implementation - Progress Rating

- Low: Pay as You Drive (PAYD) Auto Insurance (pilot program) (1.1%)
Regional Low Carbon Fuel Standard (1.6%)³
- Medium: Federal Renewable Fuel Standard (1.6%)³
Clean Car Consumer Incentives (0.5%)⁴
Smart Growth Policy Package (Sustainable Development Principles) (0.5%)
- High: Federal & California Vehicle Efficiency & Greenhouse Gas Standards (2.6%)
Federal Emissions & Fuel Efficiency Standards for Medium & Heavy Duty
Vehicles (0.3%)
GreenDOT (1.2%)

Updates:

- Policies reliant on Federal Standards & Massachusetts adoption of California standards remain on track to produce expected GHG reductions.
- The Regional Low Carbon Fuel Standard (LCFS) is on hold. The states are monitoring the outcome of CA lawsuit.
- The Pay as You Drive (PAYD) Pilot is not progressing on schedule due to serious legal challenges that PAYD belongs to Progressive Insurance. The Pilot is on hold until the legal challenge can be resolved. GHG reductions from the Pilot may need refinement.
- Following issuance of the GreenDOT Implementation Plan MassDOT has focused on incorporation of Plan goals, including tripling person miles traveled on transit, by foot, and by bike into Division Work Plans. The strategies contained in these work plans are presently being translated into performance metrics by the Office of Performance Management and Innovation.
- Additional funding for transportation is central to achieving GHG reductions from the transportation sector. Achieving MassDOT's mode shift goal depends on customers having travel options that allow them to select the best mode for each trip they take. Healthy transportation choices of walking, bicycling and transit require infrastructure investments. This was reflected in *The Way Forward: A 21st Century Transportation Plan* and the Governor's budget proposals. At the time of this update the House and Senate have issued budgets that provide additional funding, though not in the amount called for by the Governor.

³ Federal Renewable Fuel Standard and Regional Low Carbon Fuel Standard are listed as one Policy in the Clean Energy and Climate Plan with combined GHG reductions of 1.6%. However, in order to accurately describe progress made they are listed separately for this purpose.

⁴ Reflects the percent reduction in GHG emissions (compared to 1990 levels) that is projected for each strategy in the *Clean Energy and Climate Plan for 2020*

- As the approach to Clean Car Consumer Incentives outlined in the Clean Energy and Climate Plan does not appear to be viable at this time, a number of alternate mechanisms are being pursued to promote the use of clean cars. These include:
 - On Earth Day the Administration launched the \$2.5 million dollar [Massachusetts Electric Vehicle Incentive Program](#) that provides funding to municipalities to help purchase electric or plug-in hybrid passenger vehicles and to install dual electric charging stations;
 - Additional clean vehicle incentives targeted at owners of fleets of medium and heavy duty trucks and transit vehicles are to be announced in the near future;
 - A new website compiles all information about the State's [Mass Electric Vehicle Initiative](#);
 - On March 7th a day-long EV Roundtable focused on EV activities & opportunities; and
 - A Task Force will be created to coordinate efforts to follow up on the recommendations from the Roundtable in order to increase the number of EVs and ease their use in MA.

- Led by EOHEd the Administration is pursuing its Housing that Works Policy that seeks to produce 10,000 units of multi-family housing annually that are reasonably dense and reasonably located, consistent with GWSA GHG reduction goals. To that end:
 - The Planning, Production, Progress Conference organized by DHCD was held at Devens, attracting hundreds to sessions intended to help advance Housing that Works;
 - The 2013 application for the [MassWorks Program](#) will be available on June 1st. Priorities, supportive of Housing that Works and GWSA goals, include multi-family housing in mixed-use districts that are well connected to significant employment opportunities; and
 - The Governor's Institute is returning to MA on June 5th for a second session, this one targeted specifically at next steps to increase the supply of multi-family housing, particularly in locations near transit, city/town centers and employment.

- Overall, progress on the "Smart Growth Policy Package" is mixed & implementation an ongoing focus. Aspects of the "Package" as well as metrics & indicators to track the impact of transportation and land use policies will be the focus of a Subcommittee meeting on 6/3/13.

- The recently completed Merrimack Valley Plan will be released shortly. The Plan, developed in concert with local governments and the Merrimack Valley Planning Commission, identifies State Preservation and Development Priority Areas following the model created by MassDOT and EOHEd for the South Coast Rail Corridor Plan. With the release of the Merrimack Valley Regional Plan, 83 communities will have undergone a state and regional planning process and have identified State Priority Development and Priority Preservation Areas. These designated areas help focus efforts on economic growth and land protection; agencies are making investment consistent with Priority Area designations. In addition, the Metropolitan Area Planning Council and Central Massachusetts Regional Planning Commission are at work on regional priorities for communities in parts of their respective regions, meaning that the number of communities with state endorsed priorities should continue to grow.



- A joint policy statement & illustrative examples are being developed to describe the interagency approach EOHED, EEA, and MassDOT are taking to realize the Patrick Administration's vision for future growth & preservation through the Planning Ahead Strategy. Such an approach was endorsed by the Transportation & Land Use Subcommittee last December.

Priority Actions to Implement/Institutionalize CECP Transportation & Land Use Policies:

- Pass zoning reform legislation (enhanced version of House 1859 that addresses Administration concerns);
- Codify the MA Sustainable Development Principles and require their consideration by agencies making permitting and funding decisions that affect where and how land is used;
- Develop and implement incentives for municipalities to plan, regulate, and act in ways that are consistent with the Sustainable Development Principles;
- Institutionalize a process to track changes in zoning and land use;
- Complete State endorsed regional plans that designate Priority Development and Preservation Areas and establish a protocol for their use [related to codification above];
- With input from a stakeholder task force enhance incentives, outreach, and coordination of agency efforts in order to accelerate the deployment of electric, plug-in, and other clean vehicles for personal and commercial use; and
- Develop statewide support for car sharing programs to reduce consumer vehicle purchases.

Non-Energy Emissions Subcommittee Highlights

Strategy Implementation - Progress Rating

- High: Reducing Sulfur Hexafluoride (SF₆) Emissions from Gas-Insulated Switchgear (0.2%)⁵
Reducing Emissions from Plastics Combustion (0.3%)
Stationary Equipment Refrigerant Management (1.3%)

Key Findings & Recommendations

The Clean Energy and Climate Plan includes 4 strategies grouped in the Non-Energy Emissions subcommittee that together are estimated to contribute 2.0% of greenhouse gas emission reductions by 2020. Because motor vehicle air conditioning emission reductions are addressed in MassDEP's Low Emission Vehicle regulations, that strategy is reported on in the Transportation subcommittee. SF₆ emission reduction is going forward through a MassDEP regulation expected to go to public comment in summer 2013. Plastics Combustion reduction is occurring through a suite of activities under MassDEP's Solid Waste Advisory Committee, and is on track. Refrigerant Management is being explored through meetings with technically-knowledgeable or potentially-affected stakeholders, intended to lead to proposed regulations in the second half of 2013.

Two supplemental strategies have been proposed. The first seeks to reduce emissions from the natural gas distribution network, essentially reducing natural gas leaks. This strategy has links to the IAC Question posed in the buildings Subcommittee Highlights sector "Should natural gas infrastructure be expanded, or can renewable thermal markets grow to serve space & water heating needs?" The second strategy would reduce fluorinated gas emissions from the semiconductor industry, similar to the strategy addressing the gas-insulated switchgear. MassDEP will begin work on this sector as it did for SF₆ and Refrigerants, by conducting a survey to learn about the users of fluorinated gases (e.g., emissions controls already in place at semiconductor manufacturers and the level of emissions that could be achieved when utilizing emissions controls). California regulations could serve as a model for a program in Massachusetts, see <http://www.arb.ca.gov/regact/2009/semi2009/semifro.pdf>.

Questions for the IAC:

- Are there recommendations for how the subcommittee should proceed with addressing natural gas distribution leaks?
- Does the IAC have further recommendations for supplemental strategies?

⁵ Reflects the percent reduction in GHG emissions (compared to 1990 levels) that is projected for each strategy in the *Clean Energy and Climate Plan for 2020*



Climate Change Adaptation Subcommittee Highlights

Strategy Implementation - Progress Rating

- High: Scenario development
- High: Climate Change Workshop Planning

Key Findings & Recommendations

Over the last several years, state agencies have been involved in climate change adaptation activities such as evaluating existing capabilities, resources, and programs; securing funding for surveys, outreach, and inventory assessments; and assessing vulnerabilities of their resources.

At its last meeting, the Adaptation subcommittee prioritized strategies outlined in the Adaptation Report through the lens of emergency preparedness and protection of key infrastructure and human life. The Subcommittee, through its Work Plan and activities, are beginning to address areas that have multi-sectoral and agency relevance, such as:

- Collect elevation data (LiDAR) for all of Massachusetts and combine with MassDOT-USGS flood frequency equations to identify areas of risk.
- Assess other risks from climate change on utilities, transportation infrastructure, critical facilities, and vital urban centers.
- Retrofit, remove, or relocate transportation, water and wastewater, and energy infrastructure to address more frequent flooding, storm events, greater/erratic capacity.
- Promote the use of green infrastructure.
- Provide assistance to local communities for adoption of best practices and responsive planning.
- Enhance emergency preparedness.

In order to move forward with Adaptation plans and projects, the Adaptation Subcommittee proposed an alternative process and organizational structure to most effectively address climate change adaptation in Massachusetts - an Adaptation Implementation Advisory Committee (IAC) structured in a similar way to the current mitigation-focused IAC. This was corroborated by the GWSA Implementation Advisory Committee who agreed that adaptation should be treated as equivalent to mitigation in terms of its priority and addressed through its own advisory committee. Although the recommendation was for a separate Adaptation IAC, it was agreed that both mitigation and adaptation committees should coordinate and communicate regularly. Moving forward, a new organizational structure is needed for adaptation in addition to implementation goals.

Ongoing Activities

- EEA is working with MassGIS and with CZM to develop a climate change workshop for agencies that highlights available climate-related tools and information such as LiDAR, sea level rise maps, assessors' maps, natural resource data layers etc. that can be used to assess climate change impacts and vulnerabilities on a property.
- EEA is coordinating with the North East Climate Science Center (NECSC), housed at UMass Amherst, to advance a better understanding of climate change and its impacts. State research needs and questions will be potentially matched up with NECSC scientific expertise to develop project scopes and conduct relevant studies.
- The U.S. National Climate Assessment recently put out global sea level rise scenarios which represent a consolidated synthesis of the most up-to-date scientific information. These scenarios are being looked at along with historical local land subsidence rates to develop scenarios for Massachusetts.
- Sea level rise scenarios will form the basis of implementing Section 7 of the GWSA i.e. incorporating climate change impacts and effects into MEPA. Discussions with MEPA are underway.