

# CLEAN ENERGY RESULTS

Quarterly Report to the  
Massachusetts Department of Energy Resources  
Covering October 1, 2012 – December 31, 2012



April 2013

Massachusetts Department of Environmental Protection

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## EXECUTIVE SUMMARY

The Clean Energy Results Program, established in July 2011 and launched in November 2011, is a first-of-its-kind partnership between the Massachusetts Department of Environmental Protection (MassDEP) and the Massachusetts Department of Energy Resources (DOER). This innovative new program builds on MassDEP's regulatory expertise and authority to support DOER in advancing the permitting and development of renewable energy and energy efficiency projects throughout Massachusetts. The Massachusetts Clean Energy Center (MassCEC) works closely with MassDEP and DOER on program activities.

This fifth quarterly report covers MassDEP activities performed between October 1 and December 31, 2012. It is being provided pursuant to the Memorandum of Agreement (MOA) executed between MassDEP and DOER, and the Clean Energy Results Program Funding Proposal submitted by MassDEP to DOER (both dated May 16, 2011). As this report will illustrate, the Clean Energy Results Program (CERP) continues to achieve great success during this reporting period. **Work done by MassDEP staff this quarter has directly advanced more than 75 clean energy and energy efficiency projects with potential for more than 70 megawatts of clean energy production from technology qualifying for the Massachusetts Renewable Energy Portfolio Standard (RPS) and the Alternative Energy Portfolio Standard (APS).**

Below are highlights from each program area. More information on each of these topics can be found under the Detailed Program Progress section of this report.

### Water and Wastewater Utilities

This quarter, MassDEP worked in partnership with DOER and the utility Program Administrators (PAs) to adopt new language in the 2013–2015 Statewide Energy Efficiency Plan to expand partnerships and energy-saving opportunities at municipal drinking water and wastewater treatment facilities across the Commonwealth. This new language sets more specific efficiency targets on wastewater aeration and pumping, as well as drinking water pumping. The PAs will work with MassDEP and DOER to conduct equipment screening in order to identify potential energy-savings opportunities, and match projects with available incentives under state efficiency programs. MassDEP continued its energy management leadership through its Energy Leaders Initiative, holding a Roundtable meeting with 16 drinking water and wastewater facilities to discuss next steps following the completion of the DOER ARRA-funded evaluations. MassDEP, in partnership with the MassCEC, has completed the state procurement process (CommPass) to hire a technical consultant to explore opportunities for in-line hydropower energy generation within the water and wastewater infrastructure of Massachusetts. This study is funded by MassCEC.

### Organics Diversion and Anaerobic Digestion

MassDEP promulgated final regulations this quarter designed to streamline the siting of anaerobic digestion operations and other advanced processing technologies. A framework is being developed for a ban on landfill disposal and incineration of organic waste by large generators, which will significantly

incentivize anaerobic digestion facilities. A draft regulatory package is being developed, with the goal for the ban to be in place in 2014. MassDEP and Massachusetts Division of Capital Asset Management and Maintenance (DCAMM) efforts to site anaerobic digesters on state land progressed this reporting period. The agencies have selected three promising state-owned properties to evaluate further, and have received positive feedback from local officials on proposed plans for these sites: MCI-Shirley, MCI-Norfolk, and UMass-Amherst. MassCEC has provided funding to MassDEP to further evaluate these three sites for anaerobic digestion. More than \$1 million was awarded this quarter through the MassDEP Sustainable Materials Recovery Program to parties interested in development of organics processing capacity and the piloting of commercial collection efforts. There are several more organics-to-energy projects in the pipeline (including those proposed at farms and wastewater treatment plants) that have received funding from MassCEC for feasibility studies.

### **Environmentally Challenged Property**

This quarter, five additional closed landfill projects were permitted for solar panels (as of December 2012) with potential for more than 12 megawatts of clean energy production. This brings the overall total number of landfill sites permitted to 39, with the potential for more than 79 megawatts. MassDEP staff assisted 17 clean energy projects proposed on contaminated land, with potential for 20 megawatts of clean energy production on Brownfields and Superfund sites. MassDEP hosted its second Green Remediation Workgroup this quarter, and led a multi-agency outreach and training effort targeting more than 500 Licensed Site Professionals (LSPs) on the opportunities that exist for renewable energy development on contaminated land.

### **Clean Energy Outreach and Support**

Outreach under the Clean Energy Results Program was at an all time high this quarter. This was largely due to MassDEP's efforts to conduct outreach around the finalization of regulatory changes to streamline the appropriate siting of anaerobic digesters. MassDEP staff presented information about the Clean Energy Results Program at 29 public forums this quarter with more than 1,100 people in attendance. MassDEP clean energy leads continued to work collaboratively with DOER Green Communities staff on a number of potential clean energy projects across the Commonwealth. MassDEP conducted a one-year review of its outreach material to update existing handouts and determine needs for new material.

### **Wind**

This quarter, the "Summary of Comments" and "Summary of Response to Comments" for comments received in response to the Independent Wind Panel Report were advanced towards final approvals at MassDEP and the Massachusetts Department of Public Health (DPH). MassDEP worked closely with MassCEC to select a contractor for a Research Study on Wind Turbine Acoustics at operating wind projects. The Request for Proposals (RFP) was issued in early fall 2012, and in December the following contractors were selected to conduct the study: Resource Systems Group with support from Epsilon Associates and Northeast Wind. Technical assistance was provided to three communities with wind turbine installations to help interpret noise policy and applicable regulations.

## **DETAILED PROGRAM PROGRESS**

During this reporting period, the Clean Energy Results Program continued to make significant progress towards meeting the clean energy and energy efficiency goals set by MassDEP and DOER in key program areas at the launch of the program (described below).

### **Clean Energy at Water and Wastewater Utilities**

MassDEP and DOER continue to work closely with its Energy Efficiency Program Administrators (PAs) through the Energy Efficiency Advisory Council (EEAC) and other forums to overcome the financial and other barriers that drinking water and wastewater facilities face in becoming more energy efficient.

#### **2013–2015 Statewide Energy Efficiency Plan**

Thanks to the efforts of MassDEP and DOER, new language was integrated into the 2013–2015 Energy Efficiency Statewide Plan, with the goal to expand partnerships and energy-saving opportunities at municipal district drinking water and wastewater treatment facilities. Through this targeted language, the Energy Efficiency PAs have committed to work more collaboratively with MassDEP, DOER, and the water and wastewater facilities to implement more energy efficiency measures in this market segment. MassDEP is taking the lead on pulling together a targeted approach that will include: 1) conducting equipment screening of high electric use areas (aeration and pumping systems); 2) integrating MassSave services and incentives more efficiently to water and wastewater customers; and 3) developing a financial assistance approach that achieves positive cash flow through energy saving improvements at water infrastructure facilities.

#### **Advancing New Energy Savings through the Energy Leaders Initiative**

MassDEP continued its energy management leadership at drinking water and wastewater facilities this quarter through its Energy Leaders Initiative. On October 11, 2012, MassDEP, DOER, EPA New England, and the Energy Efficiency Utility Providers met with 16 drinking water and wastewater facilities. Energy efficiency audits have just been completed for these facilities with funding provided by DOER. Based on the preliminary recommendations from these energy audits, significant energy efficiency savings were identified for these facilities. MassDEP, DOER and EPA New England will be working closely with the energy efficiency providers and the facilities during the coming months (through a series of roundtable forums) to identify funding options to implement as many of these energy-saving opportunities as possible.

#### **Evaluating and Recovering Energy from In-Line (Conduit) Hydropower Projects**

During this quarter, MassDEP and MassCEC have completed the state procurement process (CommPass) to hire a qualified consultant to explore opportunities for in-line hydropower energy generation within the water infrastructure of Massachusetts. This project will provide a review of technologies, evaluate the statewide potential for in-line hydropower application in Massachusetts, and develop a screening tool for MassDEP and water and wastewater facilities. Five consultant proposals were received and reviewed during this reporting period. The top two consultant proposals were interviewed by MassDEP's Review Team in December. The selection and award of this MassDEP-led contract is expected next quarter. The project is anticipated to start in February 2013 and be completed in September 2013.

## **Anaerobic Digestion/Organics Diversion**

MassDEP continues to work closely with its state partners through the Massachusetts Organics Subcommittee and other forums to tackle regulatory, technical and financial barriers to diverting source-separated organics and siting anaerobic digestion projects. During this reporting period, MassDEP continued its efforts to develop an organics collection infrastructure to provide the necessary feedstock for energy production through anaerobic digestion.

### **Regulatory Streamlining**

During this fifth reporting period, MassDEP completed promulgation of regulation changes to establish clear permit pathways for anaerobic digestion facilities, as well as facilities that recycle and compost material that has been separated from the solid waste stream.

### **Creation of Framework/Infrastructure for Increased Organics Diversion**

MassDEP continued to work towards implementation of key components of the Organics Action Plan that was developed in spring 2012 in collaboration with the MassDEP Organics Subcommittee. MassDEP is using its Organics Subcommittee to assist in the development of the regulatory framework for implementing a ban on the disposal of organic materials in landfills and incinerators in Massachusetts.

MassDEP met with subcommittee members three times during this reporting period. Their input was sought on the framework that is being developed for a ban on landfill disposal and incineration of organic waste by large generators (which will significantly incent anaerobic digestion facilities). MassDEP developed a draft regulatory package that reflects the proposed framework which is currently under internal review. The goal is to issue the draft regulatory changes to 310 CMR 19 in late winter or early spring 2013. MassDEP made close to 20 presentations over the course of the quarter to various organizations seeking input on the framework and further refinement for the regulatory package.

After assessing organics diversion potential at state facilities in spring, MassDEP has developed and initiated an effort to provide the technical assistance needed to help these facilities start diverting organics material. MassDEP will be seeking to assist in establishing organics diversion programs where none exist and enhancing the performance of existing programs. MassDEP's contractor is currently scheduling site visits with a number of agencies who have expressed interest.

### **Financial Incentive Programs**

MassDEP received nearly \$1 million in grant requests to advance organics diversion and processing through its Sustainable Materials Recovery Program. These requests included the development of organics processing capacity and the piloting of commercial organics collection efforts. MassDEP awarded nearly \$500,000 in grants this quarter related to organics collection and processing. Two of the grants are for specific investment in the establishment of anaerobic digestion capacity for source separated organics. There are several more organics-to-energy projects in the pipeline (including those

proposed at farms and wastewater treatment plants) that have received funding from MassCEC for feasibility studies.

The “RecyclingWorks in Massachusetts” Program continues to provide technical assistance for food waste diversion to businesses and institutional entities with a renewed effort to get those few remaining supermarkets to begin diverting organics. In addition, RecyclingWorks has begun to develop relationships with hotels and larger hospitality operations that generate significant amounts of food waste. RecyclingWorks has also initiated a project to work with the Massachusetts Health Officers Association and solid waste haulers to develop guidance on best management practices for storing and collecting organics. This guidance will provide health officials with information on how best to establish storage and collection requirements in their communities to reduce any impacts. The first meeting of this group is scheduled for early February 2013.

### **Siting of Anaerobic Digestion**

During this reporting period, MassDEP continued to make progress in advancing the siting of anaerobic digesters. Following the evaluation of state properties for the potential for siting anaerobic digestion, MassDEP and DCAMM have narrowed the list to three candidate properties that will be further evaluated: MCI-Shirley, MCI-Norfolk, and the Amherst Wastewater Treatment Plant (on UMass-Amherst campus). A local community meeting was held for one correctional facility, with the other scheduled for early 2013. MassDEP also met with representatives of UMass-Amherst and local communities on siting an anaerobic digestion facility adjacent to the Amherst Wastewater Treatment Plant. The next step is to hire a consultant to conduct site feasibility studies for the target properties. This will be initiated next quarter.

MassDEP has collaborated with the MassCEC to develop a Request for Proposals (RFP) to identify a consultant to assist in the assessment of small scale anaerobic digestion systems. MassDEP worked with MassCEC and Massachusetts Department of Agricultural Resources (DAR) to develop the scope of the project. During the quarter, a consultant was selected to work on the project. The project will assess a variety of small-scale anaerobic digestion systems that are commercially available and may have applications in a variety of settings in Massachusetts, including small farms, larger institutions and municipal solid waste management sites.

MassDEP received an interim grant report from the City of Cambridge outlining the challenges and opportunities in collecting residential organics. The city plans on initiating a pilot collection program within the next year.



## **Environmentally Challenged Property**

MassDEP continues to bolster its efforts to encourage new clean and efficient sources of energy at environmentally challenged property.

### **Clean Energy at Closed Landfills and Contaminated Land**

This quarter, MassDEP permitted five additional closed landfill projects with potential for more than 12 megawatts of clean energy production. This brought the total of MassDEP-permitted projects (as of December 31, 2012) to 39, totaling more than 79 megawatts (exceeding the 50 megawatt goal set for environmentally challenged property under the program). A solar photo-voltaic (PV) project at one landfill that received its post-closure use permit in September 2012 was completed and started to generate power on December 19 (Aquinnah, 0.048 MW), and another project that received its post-closure use permit in October 2012 had started construction by the end of December (Ravensbrook in Duxbury, 6.0 MW) By the end of the quarter, renewable energy projects at seven closed landfills were generating approximately 14 megawatts of electricity (six solar PV projects and two wind turbines). Another 9.6 megawatts was under construction at three additional landfills (all solar PV projects).

MassDEP also advanced 17 clean energy projects proposed on Brownfields, federal Superfund sites, and other contaminated land that (once operational) will have potential for more than 20 megawatts of clean energy production. That includes work done on the Baird McGuire Superfund green remediation project and ongoing assistance to the now-4.9 MW Shaffer Landfill in Billerica/Iron Horse Park Superfund solar PV project.

### **Green Remediation**

Progress continued this quarter to promote the use of green remediation at state regulated contaminated sites. MassDEP held its first meeting with DOER and the Office of Technical Assistance and Technology (OTA) to solicit input on the best approach for realizing the energy efficiency and renewable energy opportunities for 400 active remedial systems in its waste site cleanup program. In addition, MassDEP hosted its second quarterly "Green Remediation" workgroup with the LSP community. Workgroup efforts focused on the pending adoption of regulatory changes in the summer of 2013 that would foster the application of green remediation elements in waste site cleanup actions. They also focused on a pilot study that would encourage energy efficiency and renewable energy opportunities at active remedial systems in all four MassDEP regions. MassDEP is in the process of identifying candidate projects.

### **Extensive, Targeted Outreach**

In October, MassDEP attended the 28<sup>th</sup> Annual International Conference on Soils, Sediments, Water and Energy at the University of Massachusetts in Amherst. The national conference annually attracts 600-800 attendees, including a wide variety of representation from state and federal agencies, military, industry (including railroad, petroleum, transportation, and utilities), the environmental engineering and

consulting community, and academia. MassDEP staff gave presentations on “Facilitating the Development of Clean Energy Projects in the Commonwealth” and “Assessing the Technical and Financial Feasibility of Operating a Superfund Groundwater Pump and Treatment System with Solar Photovoltaic Energy.” In addition, MassDEP hosted an informational booth on its clean energy efforts.

This quarter, MassDEP also continued its extensive outreach and training efforts with the Licensed Site Professional Association (LSPA). On November 7<sup>th</sup>, MassDEP in collaboration with the LSPA hosted its first workshop focusing on placing solar projects on contaminated land. The workshop was attended by more than 160 LSPs who were also granted continuing education credits for their attendance.

Representatives from DOER and DPU kicked off the workshop, focusing on the goals of significantly increasing the state’s renewable energy capacity, and how redeveloping contaminated properties (including underutilized “Brownfields” sites) for the siting of these facilities will help reach those goals. MassDEP presenters focused on specific statutory and regulatory hazardous waste site cleanup provisions commonly associated with siting renewable energy facilities on contaminated land. Representatives from National Grid and Northeast Utilities/Western Massachusetts Electric, and MassDEP, also presented several case study examples of successful renewable energy developments on contaminated land in Massachusetts.

MassDEP continues to coordinate with EPA on these outreach opportunities as they relate to its oversight role of Superfund cleanups.

## Clean Energy Support Teams

### Technical Assistance

MassDEP Clean Energy Support Teams were especially active this quarter providing project proponents and other parties with a range of MassDEP expertise on the environmental and regulatory aspects of siting clean energy projects. The Clean Energy Support Team leads are meeting monthly to share information on renewable energy projects and experiences in their region.

- The Southeast Region Team approved five post closure use permits for solar on landfills, and provided pre-permitting support to proponents of a solar PV project on a landfill and anaerobic digestion at another landfill site.
- The Northeast Region Team conducted pre-permit application assistance to project proponents of renewable energy at four landfills.
- The Western Region Team issued post-closure use permits on solar PV projects at two landfill sites, and reviewed permit applications for solar projects at two landfill sites. Pre-permitting assistance was also provided to a project proponent of a wind turbine.
- The Central Region Team provided technical assistance to project proponents interested in solar at five landfill sites; landfill gas-to-energy at three sites; anaerobic digestion at three sites, and increased energy production from anaerobic digesters at farms. Additionally, technical assistance was provided for three projects considering solar PV near wetlands; one project upgrading an existing hydroturbine; two biomass projects and two combined heat and power projects.
- The Clean Energy Support Team (Boston and Region) conducted several rounds of sampling in the southeast region on sound in relation to wind turbines.

For more information on projects assisted, please see Appendix C: Detailed Program Activities.

### Outreach

CERP outreach was at an all time high this quarter in part due to the finalized anaerobic digestion siting regulations that allow for clear and predictable permitting of organics to energy facilities. The support teams actively conducted outreach and shared information and materials at forums throughout the state to explain the anaerobic digestion siting regulations, the upcoming organics ban, and other CERP initiatives and activities. The following are the meetings and forums MassDEP participated in this quarter to help further advance energy efficiency and renewable energy opportunities:

#### October

- MA Energy Leaders Roundtable Meeting for Wastewater & Drinking Water facilities – MassDEP, DOER, and EPA met with wastewater and drinking water operators to discuss applying a Plan-Do-Check-Act Management Systems Approach to energy improvements (October 11, 2012, November 29, 2012)

- University of Massachusetts Soils, Sediments, Water & Energy Conference – MassDEP provided presentations on "Assessing the Technical and Financial Feasibility of Operating a Superfund Groundwater Pump and Treatment System with Solar Photovoltaic Energy" and "Facilitating the Development of Clean Energy Projects in the Commonwealth" (October 15-18, 2012)
- Anaerobic Digestion at Massachusetts Correctional Institute (MCI) Shirley – MassDEP met in Shirley with representatives of the town and state Department of Corrections to describe and discuss the potential for the prison to host an anaerobic digestion facility that would convert organic waste into renewable energy (October 16, 2012)
- EPA Pre-Treatment Coordinators Workshop In Billerica – MassDEP presented the organics action plan and the status of the development of the waste ban (October 17, 2012)
- Large Cities Recycling Meeting In Boston – MassDEP presented the organics action plan and the status of the development of the waste ban (October 17, 2012)
- State Agency Task Force Meeting in Boston – MassDEP presented the organics action plan and the status of the development of the waste ban (October 19, 2012)
- Better City Waste Reduction Workshop in Boston – MassDEP presented the organics action plan and the status of the development of the waste ban (October 23, 2012)
- New England Biosolids and Residuals Association (NEBRA) Conference – MassDEP provided presentations on the newly promulgated siting regulations supporting anaerobic digestion and composting of food waste (October 24, 2012)
- Solid Waste Advisory Committee – MassDEP met with external stakeholders in Boston to discuss the agency's food waste diversion and anaerobic digestion initiatives and an update on MassDEP's work with the Organics Subcommittee to develop a disposal ban on commercial/institutional food waste (October 25, 2012)
- MassDEP, DOER, MassCEC, Town of Hadley, Town of Amherst, University of MA Amherst, and CDM kickoff Meeting with partners (Hadley, Amherst officials) at UMass-Amherst Campus to gauge local interest in a possible Anaerobic Digestion (AD) facility (October 25, 2012)

#### November

- The Environmental Business Council (EBC) Workshop on Anaerobic Digestion – From Waste to Resource: The Future of Organics in Massachusetts. Presentations were provided by MassDEP, MassCEC and DOER on the recently promulgated anaerobic digestion siting regulations and initiatives to advance anaerobic digestion in MA (November 2, 2012)
- Organics Subcommittee of the Solid Waste Advisory Committee – MassDEP convened a meeting of this external stakeholder group in Boston to continue discussions on the development of revised waste ban guidance to include commercial and institutional food waste, as well as other potential guidance changes (November 5, 2012)
- LSPA Clean Energy Training in Lakeville – MassDEP presented a case study that involved the installation of a wind turbine on a 21E site with an Activity and Use Limitation (November 7, 2012)
- LSPA Clean Energy Training in Woburn – MassDEP participated in an LSPA Clean Energy Training Workshop and presented an overview of regulatory requirements entitled "MCP Considerations for Construction of Clean Energy Installations" (November 7, 2012)

- Global Green USA Coalition for Resource Recovery Food Waste Conference (BWP) – MassDEP participated on a panel that discussed policy and program development in support of increased food waste diversion across the Northeast (November 7, 2012)
- Massachusetts Association of Health Boards (MAHB) Certification Workshop in Taunton – MassDEP participated in a panel discussion on organics materials management including the Massachusetts Organics Action Plan, the agency’s proposed waste ban on commercial and institutional food waste, and the forthcoming promulgation of revisions to state solid waste regulations (November 10, 2012)
- Wastewise Workshop in Boston – MassDEP presented the organics action plan and the status of the development of the waste ban (November 14, 2012)
- Mass. Municipal Association (MMA) Environment Committee Meeting –MassDEP presented the organics action plan and the status of the development of the waste ban (November 14, 2012)
- Anaerobic Digestion Task Force – MassDEP provided information on the new AD siting regulations and financial incentives for AD (November 14, 2012)
- Anaerobic Digestion Webinar – MassDEP participated with DOER and MassCEC in conducting a webinar for the public on the AD siting regulations and financial incentives (November 14, 2012)
- Boston Bar Association – MassDEP presented information on the AD siting regulations and the status of the waste ban (November 16, 2012)
- Solid Waste Association of North America (SWANA) – MassDEP participated in the SWANA New England Chapter’s annual conference in Westborough, delivering a presentation on the MassDEP Organics Action Plan (November 19, 2012)
- MassDEP Lakeville Office – A presentation was provided to staff on the Muskeget Tidal Project, the first commercial tidal energy project off the Maine Coast (November 20, 2012)
- Principles and Practices of Managing Energy in Water and Wastewater Facilities - Waltham and Southborough Workshops – Sponsored by NGRID, NSTAR and MassDEP (November 29, 2012)

#### December

- Better City Conference in Boston – MassDEP presented the organics action plan and the status of the development of the waste ban (December 6, 2012)
- Pioneer Valley Planning Commission in Springfield – MassDEP presented the organics action plan and the status of the development of the waste ban (December 6, 2012)
- Organics Subcommittee Meeting in Boston – MassDEP meet with this subgroup of the Solid Waste Advisory Committee (SWAC) to review and discuss guidance for businesses and institutions that generate food waste, as well as their haulers. This guidance will support implementation of the forthcoming waste ban on commercial organic material (December 10, 2012)
- Green Remediation Workgroup Meeting in Lakeville – MassDEP participated in the second Green Remediation Workgroup meeting (December 11, 2012)
- Massachusetts Water Pollution Control Association (MWPCA) Quarterly Meeting in Mansfield with Municipal Wastewater Operators and Managers (December 5, 2012)
- Town of Amherst Wastewater Planning/Sludge Disposal Meeting with Amherst DPW officials, MassDEP and CDM to discuss Amherst’s water/wastewater needs and priorities and the potential of anaerobic digestion (AD) (December 10, 2012)

- Hadley/Amherst meeting with town officials from Amherst and Hadley to highlight a potential renewable energy (AD) project at UMass and get feedback from meeting participants (December 13, 2012)

### **Outreach Materials**

MassDEP prepared educational outreach materials to help the advancement of renewable energy projects and energy efficiency in the MassDEP regulated community. Some of the materials drafted this quarter include:

- A revised CERP brochure describing the program and providing updated contact information
- An anaerobic digestion post card to hand out at conferences and workshops providing information on the new anaerobic digestion regulations
- An animated CERP slideshow that runs on a continuous loop for the Mass Municipal Association (MMA) conference planned for January 2013, as well as other venues
- A fact sheet on achieving positive cash flow through energy saving upgrades for wastewater and drinking water facilities
- A presentation for the DOER Green Communities Webinar on the new siting regulations and anaerobic digestion

## **Potential Public Nuisance/Health Impacts from Wind Turbines**

During this reporting period, MassDEP continued to undertake several activities to address potential public nuisance and public health impacts from the siting of wind turbines.

### **Independent Expert Science Panel Report**

As previously reported, in January, 2012, the Independent Expert Science Panel (convened by MassDEP and the Massachusetts Department of Public Health (MDPH)) submitted its final report *Wind Turbines and Health Impacts* to the agencies. This 126-page report reflects the work of the seven-member panel of medical and scientific experts who were asked to review the scientific literature and information submitted by the public and to prepare the report, which began in July 2011. Approximately 500 sets of comments and numerous reports and other information were submitted during the comment period covering: the panel's assessment methodology and report content; the panel's findings and conclusions; detailed comments on noise measurement, alternative best practices; and recommended next steps.

During this quarter, MassDEP worked on the draft "Summary of Comments" document, comprised of testimony from the three public meetings and written comments and materials submitted during the January to March 2012 comment period. MassDEP has also prepared a draft "Summary of Responses to Comments." MassDEP is developing next steps and anticipates that the response documents will be posted on MassDEP's website in the near future.

### **Technical Assistance to Communities**

MassDEP continues to provide technical assistance to municipalities and other partners to help interpret the agency's noise policy and applicable regulations. During this quarter, MassDEP regional staff worked with MassCEC and the Town of Kingston to collect and evaluate resident complaints in advance of a MassCEC-funded sound study. MassDEP followed up on the compliance determination issued in May 2012 finding night-time sound levels from Falmouth's Wind #1 exceeding MassDEP regulations by conducting daytime sampling of combined Wind #1 and Wind #2. A final report finding that daytime levels do not exceed the MassDEP standards was issued in December 2012. MassDEP also continued to conduct sound sampling in Fairhaven related to the newly installed Fairhaven Wind LLC turbines. Night time sampling began in July 2012 and continued through the fall, with additional sampling still needed to cover all the wind directions and receptor locations.

### **MassCEC Research Study on Wind Turbine Acoustics**

During this reporting period, MassDEP assisted MassCEC in reviewing and scoring contractor proposals, interviews, scope negotiation with finalists, and contractor selection for an acoustic monitoring study of operating turbines. This study will measure the level and quality of sound emissions from operating wind turbine projects in Massachusetts to increase data and information on the sound impact of wind turbines, taking into account the influence of different variables. The study will also provide a quantitative basis for testing and validating pre- and post-construction noise evaluation methodologies.

The study RFP was released on September 4, 2012 and bids were accepted until October 9, 2012. MassCEC and MassDEP have selected the Resource Systems Group (RSG) as the contractor to conduct this study. RSG will utilize the support of Epsilon Associates and Northeast Wind as subcontractors for this project. We expect the research project to be completed in 2013.



## PROGRAM DEVELOPMENT ACHIEVEMENTS

During this fifth reporting period, MassDEP continued to expand its efforts under the Clean Energy Results Program. The high-level management team (consisting of senior officials from DOER, MassCEC, and MassDEP) continued to meet twice a month to ensure agency clean energy work across the three agencies is fully aligned.

### Staffing & Program Activities

MassDEP continues to engage existing agency staff in its Boston and regional offices on tasks necessary to accomplish key activities and goals identified under the Clean Energy Results Program. The sixteen Clean Energy Points of Contact and Clean Energy Director have continued to work with MassDEP staff to expand program activities, implement action plans, and track and report progress.

### Database

MassDEP, DOER, and the Massachusetts Executive Office of Energy and the Environment advanced development and use of the new MassDEP-DOER Clean Energy Results Database this quarter. This new database eliminates the need for three different databases and spreadsheets previously used to track information by MassDEP and DOER. It will enable streamlined inter-agency sharing of information on activities and outcomes that will save significant staff resources (and paper/electronic resources) that were previously required to manage separate databases. It also ensures that information being tracked and communicated by MassDEP and DOER is consistent across programs and agencies.

The CERP database is now in use by MassDEP, and will be used to generate the next quarterly report. Staff training continues, and MassDEP continues to work with DOER on a Database Users Guide.

### Mapping

During this quarter, MassDEP worked with MassCEC to refine the Request for Qualifications for the Community Energy Strategies Pilot Program solicitation (<http://masscec.com/index.cfm/page/Community-Energy-Strategies-Pilot-Program/cdid/14142/pid/11159>). The following GIS data was updated:

- Advanced Biomass / Organics
- Combined Heat and Power
- Fuel Cells
- Hydroelectric
- Landfill Gas
- Solar PV
- Wind Energy
- Green Communities
- Geothermal Energy
- Alternative Fuel Stations
- Public Utility Providers Service Areas

- Electric, Gas and Cable

New maps were created including the Statewide Clean Energy Map, Geothermal Map, Alternative Fuel Stations Map, and Public Utility Providers Map. MassDEP Regional Geographical Information Systems (GIS) Coordinators continue to support CERP Support Teams with these maps and custom material for regional clean energy efforts.





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