The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

DEVAL L. PATRICK
GOVERNOR
TIMOTHY P. MURRAY
LIEUTENANT GOVERNOR
IAN A. BOWLES
SECRETARY

Tel: (617) 626-1000
Fax: (617) 626-1181
http://www.mass.gov/envir

July 7, 2010

Philip Giudice
Commissioner
Department of Energy Resources
100 Cambridge St., 10th floor
Boston, MA 02114

Dear Commissioner Giudice,

Thank you for your work on the *Biomass Sustainability and Carbon Policy Study* by the Manomet Center for Conservation Sciences. As we move forward to implement the Global Warming Solutions Act of 2008 (GWSA), which mandates 80% reduction in greenhouse gas emissions below 1990 levels by 2050 and 10 to 25% reduction in emissions by 2020, it is essential that state funding and incentives reflect this charge in the incentives we provide biomass energy under the Renewable Portfolio Standard.

In light of the Manomet study, we have a deeper understanding that the greenhouse gas impacts of biomass energy are far more complicated than the conventional view that electricity from power plants using biomass harvested from New England natural forests is carbon neutral. The findings of the Manomet study have changed the policy landscape for biomass energy production derived from wood fuels. Our policy should reflect this current science by moving to support the development and operation of facilities that have the greenhouse gas profile needed to fulfill our emission-reduction mandates. While all questions have not been answered, and we expect new science to continue to guide our policy, I am confident that we now have enough information for the Department of Energy Resources (DOER) to take the next step in changing the way in which the Commonwealth provides incentives for biomass energy.

Specifically, the Manomet study suggests that biomass combined heat and power (CHP) technologies using woody biomass from New England forests may contribute to overall greenhouse gas reductions due to higher levels of efficiency. The study does not provide in-depth analysis of carbon accounting for residual forest products, by-products, energy crops, or clean wood waste (e.g., from mills), though the study suggests that use of such biomass fuels would

Printed on Recycled Stock

reduce greenhouse gas emissions over the relevant timescale of the GWSA when used with high efficiency conversion in thermal or combined heat and power applications.

Given the general findings of the Manomet study, our obligations under the GWSA, and the authority of DOER to regulate state incentives for renewable biomass sources of energy, including responsibility for setting criteria qualifying low emissions and advanced power conversion technology, I direct you and your staff at DOER to move expeditiously to align our regulations with our better understanding of the greenhouse gas implications of biomass energy. You are to propose draft regulations pursuant to Section 11F of Chapter 25A of the General Laws amending the current Renewable Portfolio Standard Class I regulations with the components outlined below, on or before September 1, 2010. Given the uncertainty created by the Manomet study in the renewable energy markets as well as the exigency associated with achieving steep greenhouse gas emissions reductions, you should plan to have proposed final regulations available by October 31, 2010, and have final regulations in place by no later than December 31, 2010. As is the case with all regulatory changes, I look forward to a fully transparent and robust public process as the new regulations are developed and finalized.

Changes in policy to be reflected in regulation should include but not be limited to the following:

1) In order to qualify for renewable energy certificates as a low emission biomass renewable energy facility using advanced power conversion technology, generating sources must be designed, constructed and operated to achieve maximum practicable efficiency as determined by DOER. This efficiency standard shall provide significant near term greenhouse gas dividends in a combined heat and power facility or comparable technology that will achieve specified minimum efficiency and emissions performance standards. The results of the Manomet study highlight the need to make the most efficient use of biomass fuel, maximizing the energy produced while minimizing greenhouse gas emissions.

   DOER will seek to ensure that the maximum practicable efficiency standard reflects the goals of the Green Communities Act, which among other efficiency goals seeks to promote the use of combined heat and power having a minimum efficiency of 60% with a goal of increasing to 80% by 2020 with the understanding that the efficiency of this technology is constantly improving.

   I understand that biomass eligibility for the RPS is just one of the issues raised by the public and medical community, including significant health concerns. These important issues are beyond the scope of the Manomet study and this rulemaking. However, qualifying renewable energy generating sources using biomass must also comply with the federal Clean Air Act emission standards for particulate matter and other pollutants.

2) As a mechanism to reach the GWSA mandate of reducing greenhouse gas emissions by 80% below 1990 levels by 2050, such renewable energy generating sources must, over a twenty (20) year life cycle, yield at least a fifty percent (50%) reduction in greenhouse gas emissions per unit of useful energy relative to the lifecycle greenhouse gas emissions from 1) the operation of a new combined cycle natural gas electric generating facility using the most efficient commercially available technology as of the date of application for the portion of electricity delivered by the biomass system and, if applicable, 2) the operation of the fossil fuel fired thermal energy unit being displaced, or in the case of a new thermal load, a gas-fired thermal energy unit using the most efficient commercially available technology as of the date of application, for the portion of thermal energy delivered by the biomass system. DOER shall establish a method for calculating and comparing such lifecycle greenhouse gas emissions based on the best available science and data. The lifecycle greenhouse gas emissions methodology set forth in the draft regulations should credit carbon stored in biomass fuel only to the extent that the stored carbon is "additional" and that the biomass would not otherwise be used (e.g., for food, animal feed or durable wood products) and its carbon content would not otherwise remain sequestered in trees, plants or soils. In addition, in the case of dedicated bioenergy crops, carbon stored in the biomass should be credited only to the extent of the net increase in carbon stored in the bioenergy crop as compared to what would be absorbed and stored by plants on the same land if it were not in use for bioenergy crop production. The draft regulations also should include definitions of "residues" and "waste wood" to include residues from logging, land-clearing for commercial or residential development, mill residues and landscaping.

3) The fuel source used by the RPS-eligible biomass facilities (e.g. wood, wood by-products, and energy crops, including energy crops used for the production of biofuels and biodiesel used in a qualifying renewable energy generating source) must be grown, harvested, or otherwise produced sustainably and in a manner consistent with the Commonwealth's forestry and environmental goals including conservation of biodiversity, conservation of soil and water resources and reduction of greenhouse gas emissions. Forest wood used as fuel should be harvested consistent with Chapter 132 of the General Laws and associated regulations, and in compliance with a forest management plan prepared by a licensed forester. DOER should consult with the Department of Conservation and Recreation (DCR) and the Department of Environmental Protection (DEP) in the development of regulations that address fuel source sustainability.

4) The regulations shall address the use of forest residues, and aim to establish a limit on the quantity of residues (including tree tops and branches) used as biomass fuel. Such limits may allow 50% of tops and branches and 15% by weight of total sawtimber removed per acre as eligible to be treated as forest residues used for biomass fuel.

5) Construction and demolition debris or fuel derived from construction and demolition debris will not be eligible for Renewable Energy Certificates.

6) These regulations shall not apply to energy derived from anaerobic digestion of waste from agricultural crops, animal wastes, food or sewage sludge.

I am thankful to the Manomet researchers as well as the many scientists, stakeholders and concerned citizens who have helped us to clarify the complex issues surrounding biomass power and greenhouse gas emissions.

Sincerely,

Ian A. Bowles
Secretary