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The Clean Energy Biofuels Act of 2008: Promoting Advanced Biofuels in Massachusetts

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Massachusetts Department of Energy Resources Creating A Greener Energy Future For the Commonwealth

The First Annual TIMBR Conference on Cellulosic Biofuels

September 19, 2008

University of Massachusetts, Amherst

The Clean Energy Biofuels Act of 2008

Promoting Advanced Biofuels in Massachusetts

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Drivers for Green Energy Policies

- High Oil Cost and Dependency
- Energy Security
- Economic Development
- New England at end of pipeline
- Climate Change









Clean Energy Leadership

Governor's Clean Energy Agenda

- Created nation's first combined Energy & Environment Secretariat led by Secretary Ian Bowles
- ✓ Rejoined Regional Greenhouse Gas Initiative (RGGI)
- Accelerating growth of clean energy cluster
 Evergreen Solar
 DOE Wind Blade Test facility
- ✓ Commonwealth Solar: 250 MW by 2017
- ✓ Leading-by-Example Executive Order 484
- ✓ Advanced Biofuels Task Force
- ✓ Supports Cape Wind
- ✓ Green Jobs Initiative







Clean Energy Legislation - 2008

- Green Communities Act
- Clean Energy Biofuels Act
- Global Warming Solutions Act
- Green Jobs Act
- Massachusetts Ocean Act







Clean Energy Biofuels Act

Presentation Outline

Rationale and Technical Background: Advanced Biofuels Task Force

Provisions of the Act



Advanced Biofuels Task Force

- ABTF Created in November 2007 by Legislature and Governor EEA Secretary Chair, A&F Secretariat, Legislators, Biofuels Company
- Public Hearings, Testimony, Expert Witnesses
- Final Report and Recommendations Issued in Spring 2008
 See: http://www.mass.gov/envir/biofuels/
- Potential Economic Benefits to MA
 - Leading academic research and private enterprise
 - Mature advanced biofuels sector could contribute to MA economy by 2025 (assumes predominant use of all available cellulosic resource is for biofuel)
 - Replace up to 6% of petroleum
 - \$280 million to \$1 billion annually
 - 1,000 4,000 permanent jobs, 150 760 temporary jobs



Findings/Recommendations

- Regulatory Recommendation
 - Low Carbon Fuel Standard: Prioritize efforts to implement a regional, technology neutral, and performance based LCFS.
 - Targeted mandates: As bridge to LCFS, implement carefully targeted mandates (percentage requirements for biofuels) that adhere to strict environmental (GHG) standards



Findings/Recommendations

Incentives

- Exempt cellulosic ethanol from state's gasoline tax
- Consider incentives for advanced biofuels production (e.g. production tax credits)
- Possible fund to attract advanced biofuels R&D

Infrastructure/Feedstock Development

- Limited investments in ethanol/biodiesel stations
- Analysis of measures to increase use and sale of flex fuel vehicles
- Incentives to encourage smaller, regional bio-refineries
- Focus on local feedstocks including forest biomass, energy crops, algae



Clean Energy Biofuels Act

Key Definitions and Provisions of the Act

- Life Cycle GHG Reduction Criteria
- Gas Tax Exemption for Cellulosic Biofuel
- Bioheat Minimum Content Requirement
- Biodiesel Minimum Content Requirement
- Low Carbon Fuel Standard
- Special Commission to Study Incentives



Clean Energy Biofuels Act

Life Cycle Greenhouse Gas Emissions Reduction Criteria for Eligible Biofuels

- Cellulosic Biofuel/Ethanol: at least 60% reduction
- Biodiesel/Distillate Fuels: at least 50% reduction
- Reduction relative to conventional fuel sold in 2005
- Biofuel GHG Emissions inclusive of direct and indirect (land use change) impacts
- Biofuel suppliers provide GHG documentation and receive certification from DOER
- Waste feedstocks may be exempt from full life-cycle analysis



Clean Energy Biofuels Act

Fuel Tax Exemption for Cellulosic Biofuel/Ethanol

- State Fuel Tax: 21 cents/gal
- Tax per gallon reduced in proportion to the percentage of the fuel content (by energy content) consisting of eligible cellulosic biofuel



Clean Energy Biofuels Act

Bioheat Minimum Content Requirements

- Applied to #2 heating fuel used in residential, commercial, and industrial heating applications
- Minimum Content Requirement Schedule

2% eligible biofuel by July 1, 2010

July 1, 2011

• 4% July 1, 2012

• 5% July 1, 2013

Feasibility Study to extend requirement to #4 and #6 heating fuels

Clean Energy Biofuels Act

Biodiesel Minimum Content Requirements

- Applied to all diesel motor vehicle fuel for use in transportation
- Minimum Content Requirement Schedule

2% eligible biofuel by July 1, 2010

July 1, 2011

• 4% July 1, 2012

• 5% July 1, 2013



Clean Energy Biofuels Act

Bioheat/Biodiesel Minimum Content Requirements

- Delay Trigger
 - DOER may file report for delay requirements due to
 - 1) lack of supply,
 - 2) lack of blending facilities, or
 - 3) unreasonable cost
- DOER to study feasibility/benefits of employing a statewide <u>average</u> requirement, rather than requirement for every gallon sold
- If sufficient Low Carbon Fuel Standard is adopted by MA, then minimum content requirements will expire



Clean Energy Biofuels Act

- Low Carbon Fuel Standard: Governor and Secretary shall seek agreement amongst RGGI states to implement a LCFS for the transportation sector
- Special Commission: Will be convened to study feasibility and effectiveness of various forms of incentives to promote the development and use of advanced biofuels
 - Report results back to Legislature by March 31, 2009



Questions / Comments ??

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UMass Energy Crop Site Trials
with DOER and DAR
Switchgrass and Crambe