State Policy Trends in Biomass

Biomass 2010

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Glen Andersen

National Conference of State Legislatures
Overview of State Policies

- Renewable Fuel Standards
- Renewable Portfolio Standards
- Reducing/Eliminating Excise Tax
- Production Tax Credit
- Property or Sales Tax Credit
- Investment Tax Credit
- Grants
- State Purchasing Requirements
- Greenhouse Gas Reduction Policies
Overview of State Policies

• More than 3,000 bills introduced in 2009, 151 enacted.
Federal Biofuels Incentives

<table>
<thead>
<tr>
<th>Biofuels</th>
<th>EPA's target for 2010: 13 billion gallons of the fuel dispensed nationally to be renewable. Must reach 36 billion gallons by 2022. (10.8 billion produced in 2009).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>$.45 per gallon tax credit ($1 for cellulosic ethanol), corn subsidies, $.54 Import Tariff.</td>
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<tr>
<td>Biodiesel</td>
<td>Expired, $1.00 per gallon producer subsidy</td>
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</tbody>
</table>
Ethanol Production Trends


Source: Renewable Fuels Association
State Renewable Fuels Standards

Tax Exemptions, Credits and/or Grants
Above + RFS with Biofuel Mandates

Source: Pew Center on Climate Change
Renewable Portfolio Standards

Why are states passing RPS legislation
  – Buffer electricity prices against volatile fuel costs
  – Promote energy independence and in-state energy production
  – Support state greenhouse gas reduction goals
  – Support job growth
  – Improving air quality
  – Increasing technology growth
Biomass Definitions Vary

- Maine Defn. : Biomass generators that are fueled by wood or wood waste, landfill gas or anaerobic digestion of agricultural products, by-products or wastes.
Renewable Portfolio Standards

- **WA**: 15% by 2020*
- **MT**: 15% by 2015
- **MN**: 25% by 2025 (Xcel: 30% by 2020)
- **ME**: 30% by 2000
- **ME**: New RE: 10% by 2017
- **NH**: 23.8% by 2025
- **VT**: (1) RE meets any increase in retail sales by 2012; (2) 20% RE & CHP by 2017
- **OR**: 25% by 2025 (large utilities)
- **OR**: 5% - 10% by 2025 (smaller utilities)
- **CA**: 20% by 2010
- **AZ**: 15% by 2025
- **CO**: 20% by 2020 (IOUs)
- **CO**: 10% by 2020 (co-ops & large munis)*
- **NM**: 20% by 2020 (IOUs)
- **NM**: 10% by 2020 (co-ops)
- **TX**: 5,880 MW by 2015
- **HI**: 20% by 2020
- **CA**: 105 MW
- **NH**: 10% by 2015
- **SD**: 10% by 2015
- **WI**: Varies by utility; 10% by 2015 goal
- **IL**: 25% by 2025
- **MI**: 10% + 1,100 MW by 2015*
- **MI**: 10% by 2021
- **VA**: 15% by 2025*
- **NC**: 12.5% by 2021 (IOUs)
- **NC**: 10% by 2018 (co-ops & munis)
- **NY**: 24% by 2013
- **NY**: 24% by 2015*
- **VT**: 15% by 2025*
- **VT**: 15% by 2025*
- **DE**: 20% by 2019*
- **DC**: 20% by 2020
- **MD**: 20% by 2022
- **PA**: 18% by 2020†
- **NJ**: 22.5% by 2021
- **RI**: 16% by 2020
- **CT**: 23% by 2020
- **OH**: 25% by 2025†
- **OH**: 1% annual increase (Class I Renewables)
- **WA**: 15% by 2020*
- **ME**: 30% by 2000
- **NH**: 23.8% by 2025

- **Extra credit for solar or customer-sited renewables**
- **Minimum solar or customer-sited requirement**
- **Includes separate tier of non-renewable alternative resources**

*† North Carolina Solar Center - April 2009
Progress of RPS

Lawrence Berkeley Laboratory (LBL) Report

- RPS Policies responsible for 76% new renewable energy development
- Most states reaching targets
  - Minnesota is on track to meet their 2010 goals of 7 percent. Xcel Energy: 15 percent by 2010.
  - Iowa now over 7 percent wind
States With GHG Emissions Targets

Source: Pew Center for Climate Change
Greenhouse Gas Emissions Mandates

- CA AB 32 (2006)
  - 1990 levels by 2020, 80% below by 2050
- CT HB 5600 (Enacted, June 2008)
  - 10 percent below 1990 levels by 2020 and 80% below 2001 levels by 2050
- HI HB 226 (2007)
  - 1990 levels by 2020
- MA SB 2540 (Enacted, August 2008)
  - 80% below 1990 levels by the year 2050
  - 80% below 2005 levels by 2050
- WA SB 6001 (2007)
  - 1990 levels by 2020, 50% below by 2050
- NJ A3301 (2007)
  - 1990 levels by 2020 and 80% below 2006 levels by 2050
State Renewable Fuels Standards

• Renewable Fuels Standards
  – Minnesota
    • 2005 legislation – increases the ethanol mandate from 10 to 20 percent by 2013.
    • In May 2008, created a 20% by 2015 biodiesel mandate.
  – Iowa
    • 25% biofuels by 2020
  – FL, MO, OR, MA, MT, ND, NM, WA also have standards ranging to 10 percent
  – LA, OR and PA have standards that kick in after state production thresholds are met.
Low Carbon Fuel Standards

- Low Carbon Fuel standard
  - Reduces carbon intensity of California’s vehicle fuels by > 10% by 2020
- Governors of the 10 RGGI and Pennsylvania have issued a memorandum of understanding to create a similar standard.
State Incentive Programs

Production Incentives
HI, KS, ME, MD, MN, MT, NC, OK, SC, SD, WA, WY

Minnesota is reducing incentives
State Incentive Programs

• Infrastructure Incentives
  – CO, KS, LA, ME, NY

• Loans
  – Iowa: 0 interest loans
  – ME, OK, OR, UT, VA and WA also provide loans for biofuel infrastructure.

• State Purchase Requirements
  – Colorado requires B20 for state-owned diesel vehicles (10 cent limit on price difference).
  – Alabama, Alaska, Georgia, Kansas, Missouri, Montana, Nebraska, New York, North Dakota, Ohio, Wisconsin and Wyoming.
California Low Carbon Fuel Standard

• 2007 Executive Order
  – Reduces carbon intensity of California’s vehicle fuels by > 10% by 2020
  – Expected to greatly expand alternative and hybrid vehicles in the state.
  – Supports A.B. 32 goals
Carbon Emissions and Biofuels

- **MA HB 4951 (Enacted 2008)**
  - State gasoline tax exemption for cellulosic ethanol, provided it yields a 60% reduction in greenhouse gas emissions
  - Home heating oil must be 2% biofuel by 2010, 5% by 2013 (must reduce GHG by 50% to be eligible)
  - Low Carbon Fuels Standards agreement with RGGI states.
Top 10 Ethanol Producing States

- Iowa
- Minnesota
- Illinois
- Nebraska
- Wisconsin
- Indiana
- South Dakota
- Texas
- Ohio
- Kansas

Top 10 Ethanol Consuming States

- California
- Illinois
- New York
- Minnesota
- Ohio
- Michigan
- Connecticut
- Indiana
- Iowa
- Wisconsin

Thousands of Gallons

Source: Energy Information Administration, "Ethanol Consumption Estimates by Sector, 2005."
Top 10 Ethanol Consuming States (per capita)

- Minnesota
- Connecticut
- Iowa
- Illinois
- South Dakota
- Nebraska
- North Dakota
- California
- Nevada
- Wisconsin

Source: Energy Information Administration, "Ethanol Consumption Estimates by Sector, 2005"; U.S. Census
Commonalities of High Biofuels Consuming States

• Top 3 (Minnesota, Iowa, Connecticut), have renewable fuels mandates
• Infrastructure Support
  – Minnesota, Iowa, Illinois
• State Purchasing Requirements
  – Connecticut, Illinois, Iowa, Minnesota
Cellulosic Ethanol

- NY S.B. 2107 (Enacted 2007)
  - $20,000,000 for a competitive solicitation for construction of a pilot cellulosic ethanol refinery.
- OR H.B. 2210 (Enacted 2007)
  - Income tax credit for the production or collection of biomass (including cellulosic) used to produce biofuel;
- SC S.B. 243 (Enacted 2007)
  - Income tax credit for expenditures to develop feedstocks and processes for cellulosic ethanol and for algae-derived biodiesel.
Summary

• A great variety of approaches
• Fuel mandates most direct and predictable
• States are leading the way in innovative approaches
• Increasing emphasis on cellulosic ethanol
• Corn ethanol policies are transitional
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