Voluntary Greenhouse Gas Reduction Programs

Kansas State University Sustainability Seminar

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www.kdheks.gov
Overview

- Local (Mayors Climate Protection Agreement)
- State (KEEP)
- Regional (RGGI, WCI, MGA)
- International (Copenhagen)

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Mayors Climate Protection Agreement

• U.S. Conference of Mayors
• Initiative launched on February 16, 2005
  – To advance the goals of the Kyoto Protocol
  – 1016 signatories as of December.
  – 12 Kansas cities have signed.

• Commitments:
  – Urge federal and state governments to meet 7% GHG reductions below 1990 levels by 2012.
  – Urge Congress to pass bipartisan GHG reduction legislation.
  – Strive to meet or exceed Kyoto Protocol targets for GHG reductions

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Kansas Energy and Environmental Policy Advisory Group (KEEP)

- Created by Governor’s Executive Order.
- Four meetings held to date.
  - GHG emission inventory complete.
  - GHG reduction strategies narrowed to 49.
  - Quantification of emission reductions and cost pending.
- Future uncertain due to funding

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Regional GHG Programs

Source: www.wri.org
Regional Greenhouse Gas Initiative (RGGI)

- First market-based effort in the U.S. to reduce GHG emissions.
- 10 Northeastern and Mid-Atlantic States.
- Capped power sector CO$_2$ emissions to reduce 10% by 2018.
- Auction proceeds support low-carbon-intensity solutions, energy efficiency and renewable energy.
- Expanding to include low carbon fuel standard
Western Climate Initiative (WCI)

• Agreement signed February, 2007
• 7 western states and 4 Canadian provinces
• Multi-sector cap and trade design.
• Cap and trade start date set for January 1, 2012.
• Fuels sector in 2\textsuperscript{nd} compliance period.
• Initial emissions threshold at 25,000 MT/yr CO\textsubscript{2}e.
• Includes CO\textsubscript{2}, CH\textsubscript{4}, SF\textsubscript{6}, N\textsubscript{2}O, HFCs, PFCs.
• Point of Regulation varies by sector.

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MGA Energy Summit 2007

- Energy Security and Climate Stewardship Platform
  - Endorsed by ten governors and one Canadian premier.
  - Initiatives:
    - Carbon Management Infrastructure - Kansas did not sign.
    - Midwestern Bioproduct Procurement Program
    - Regional Electricity Transmission
    - Renewable Fuels Corridors and Coordinated Signage
    - Bioenergy Permitting
    - Regional Low-Carbon Energy Transmission Infrastructure
    - Regional low-carbon fuels policy
    - Greenhouse Gas (GHG) Reduction Accord

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Midwestern Greenhouse Gas Reduction Accord (MGGRA)

• Establish GHG reduction targets and time frames.
• Develop market-based and multi-sector cap-and-trade mechanism.
• Establish system to enable tracking, management, and crediting of GHG emissions.
• Develop and implement other strategies to achieve targets:
  – Low-carbon fuel standard (LCFS).
  – Regional incentives.
  – Funding mechanisms.
MGA Accord Approach

• Program starts 2012.
• Targets:
  – 18% below 2005 levels by 2020 (additional 2% reduction to reserve pool).
  – 80% below 2005 levels by 2050.
• Scope:
  – Electricity combustion, including imports.
  – Industrial combustion and process emissions.
  – Transportation fuels.
  – Residential, commercial, and industrial (RCI) fuels.

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MGA Accord Approach

• **Point of regulation:**
  – Electricity and industrial sources at point of emissions.
  – Transportation and RCI fuels at the point where the fuels enter the participating jurisdiction.

• **Threshold for coverage:**
  – 25,000 MT/yr emissions.
  – 3-year rolling average; once-in, always in.
  – Electric generators with nameplate capacity < 25 MW are exempt.
MGA Accord Approach

• Recommendation for distributing allowances:
  – ~33% auction; 67% sold for fee.
  – Transition to 100% beginning in 4th compliance period.

• Offsets:
  – May be used to cover up to 20% of each entity’s compliance obligation.
  – Offsets from region, plus states & provinces with MOU.
MGA Accord Approach

- **Reporting:**
  - Commence in 2011.
  - Reporting threshold: 20,000 MT/year.

- **Cost containment:**
  - Compliance period is 3 years.
  - Banking allowed.
  - Borrowing allowed 2 years into next compliance period.

- **Next steps:**
  - Influence the federal cap and trade discussion.
  - Modeling of macroeconomic impacts prior to final design recommendations.
  - Model Rule development – final stages.

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MGA Low Carbon Fuel Standard Timeline

• November 2007: MGA Summit, announcement of platform.
• Spring 2008: appointment of LCFS advisory group.
• January 2009: consensus on recommendations.
• March 2009: adoption by MGA steering committee.
• March 2009 – present: planning, preparation, fundraising, and outreach.
MGA LCFS Objectives

- Create framework and incentives for low carbon fuels in Midwest.
- Decrease the GHG intensity of transportation fuels.
- Take advantage of agricultural and industrial strengths to benefit regional economy.
- Complement other policies focused on improving transportation efficiency and reducing GHG emissions in the region.

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MGA Energy Emissions

- Electric Generation: 31%
- Transportation: 25%
- Industrial: 15%
- Residential: 10%
- Commercial: 5%
- Agriculture: 5%
- Industrial Processes: 5%
- Waste: 3%
- Fugitive Emissions: 1%

All data are for 2003 and reported in million metric tons of CO₂ equivalent (MtCO₂e)
Petroleum Administration For Defense Districts (PADD) II: Midwest
Midwest (PADD2) Petroleum Imports
thousand barrels, 2008

- Canada: 476,860 (79%)
- OPEC: 108,682 (18%)
- Other: 19,328 (3%)

Source: EIA, 2009
http://tonto.eia.doe.gov/dnav/pet/pet_move_impcp_a2_r20_ep00_ip0_mbbl_a.htm
Canadian & U.S. crude oil pipeline proposals
Wells to Wheels

Life-cycle Greenhouse Gas Emissions for Various Sources of Crude Oil

Source: Cambridge Energy Research Associates Inc. Growth in the Canadian Oil Sands Report 2009

Source: Cambridge Energy Research Associates.
MGA LCFS Highlights

• 2005 baseline; 10% reduction within 10 years.

• Scope: liquid and non-liquid ground transportation fuels.

• Develop mechanisms for commercialization of “very low carbon” fuels, 50% lower GHG intensity than baseline.

• Advisory group recommends:
  – methodology; default values; point of regulation; compliance; penalties; interaction with other programs.

• Firms offer Life cycle analysis values based on site-specific analysis

• Auditing by state regulators or 3rd party

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LCFS Model Rule Development

Timeline

• January 4: Skeleton draft model rule.
• April 5: First model rule draft delivered to entire advisory group.
• May 3: Near final model rule draft complete for 3rd in-person meeting.
• May 17-24: 3rd in-person meeting.
• June 7: Final model rule draft complete.

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• Applicability
  – Fuels (Types)
    • Gasoline; Reformulated Gasoline; Diesel Fuel; Electricity; CNG or LNG; Biogas CNG or LNG; Hydrogen; Hydrogen Fuel Blend; 10% Ethanol Fuel Blend; Biomass-based Diesel Fuel Blend; Denatured Fuel Ethanol (E100); Neat Biomass-based Diesel (B100); Any Other Liquid or Non-Liquid Fuel.
  – Credit for Fuels Presumed to Comply
    • Fuels presumed to comply: Electricity; Hydrogen; Hydrogen Blends; Fossil CNG from North American Sources; Biogas CNG; Biogas LNG.

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LCFS Model Rule Outline

• Applicability (cont’d)
  – Exemptions for Specific Fuels
  – Exemptions for Specific Applications
  – Exemption for Small Producers and Importers

• Definitions

• Carbon Intensity Requirements for Transportation Fuels

• Requirements for Regulated Parties
LCFS Model Rule Outline

- Calculation of Credit Balance
- Reporting Requirements
  - Annual Compliance Report
  - Rounding, Significant Digits
  - Recordkeeping
- Compliance
- Calculation of Credits and Deficits
- Credit Acquisition, Banking, and Trading
- Determination of Carbon Intensity

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International Efforts

• United Nations Framework Convention on Climate Change (UNFCCC)
  – March 21, 1994
  – Sets overall framework for intergovernmental efforts
  – Ratified by 192 countries.

• Kyoto Protocol
  – 5% reduction against 1990 levels in GHG emissions over five years, 2008 – 2012.
  – Binding targets for 37 countries.
  – Ratified by 184 parties of the UNFCCC.
  – Mechanisms: Emissions Trading; Clean Development Mechanism; Joint Implementation.

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International Efforts

• **Copenhagen**
  – December 7-18, 2009
  – Copenhagen Accord
    • Aspirational goal of limiting global temperature increase to 2°C.
    • Process for countries to enter specific mitigation pledges by January 31, 2010.
    • Broad terms for reporting and verification of countries’ actions.
    • Collective commitment by developed countries for $30 billion in “new and additional” resources in 2010-2012 to help developing countries.
    • Goal of mobilizing $100 billion per year in public and private finance by 2020 to address developing countries’ needs.

• **November 2010 in Mexico City.**
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