



Kansas Energy and Environmental Policy Advisory Group (KEEP)

AFW Technical Work Group (TWG)

Meeting #6, March 26, 2009

Kansas Governor's Office
The Center for Climate Strategies

Welcome and Introductions

- KEEP TWG Members
- Kansas State Agencies
- Members of the Public
- Center for Climate Strategies

Agenda

- Introductions
- Meeting Purpose and Goals
- Approval of Summary of Prior Call/ Meeting
- Goals for AFW TWG Meeting #6
- Presentation of Draft Straw Proposals
- Review Progress of KS Inventory and Forecast Updates
- Review of Next Steps
- Agenda, Date and Time for Next Meetings
- Public Comments
- Announcements
- Adjourn

Goals for TWG Meeting #6

- Review Draft Straw Proposals from Sub-Groups
- Review current status and any further changes needed to the Draft KS GHG Emissions Inventory and Forecast
- Review of Next Steps for AFW TWG

Stepwise Planning Process

1. Get organized
2. Identify a full range of possible actions
3. Review and refine inventory & forecast of emissions
4. Identify initial priorities for analysis
5. Develop straw policy design proposals
6. Quantify initial GHG reductions and costs/savings
7. Fully develop policy option templates
8. Develop alternatives to address barriers as needed
9. Aggregate and integrate results
10. Finalize and report recommendations

Policy Option Template

- Policy Description (Concept)
- Policy Design (Goals, Timing, Parties Involved)
- Implementation Methods
- Related Programs and Policies (BAU)
- Estimated GHG Savings and Costs Per MMtCO₂e
 - Data Sources, Methods and Assumptions
 - Key Uncertainties
- Additional (non-GHG) Benefits and Costs, as Needed
- Feasibility Issues, if Needed
- Status Of Group Approval
- Level of Group Support
- Barriers to Consensus, if any

Straw Proposal Process

- Policy Description – Brief description of policy option elements. Should not be more than one or two paragraphs in length. May be based on text from the “Brief Description for Catalog Actions” document.
- Policy Design – Quantitative goal in “everyday” metric (i.e. kWh produced, gallons produced, efficiency target, recycling rate).
 - Policy Planning Period: 2010 – 2025.
 - Incremental target year: 2015
- See Straw Proposal Template.
 - Available on the web

Sub-Group Volunteers

Revised Option #	Policy Option	Straw Proposal Volunteers
AFW-1	Expanded Utilization of Biomass Feedstocks for Electricity, Heat, or Steam Production	
AFW-2	In-State Liquid Biofuels Production	Adrian Polansky
AFW-3	Promotion of Agricultural Practices That Achieve GHG Benefits	Adrian Polansky, Steve Baccus
AFW-4	Manure Management and Waste Energy Utilization	
AFW-5	Forest and Rangeland Carbon Protection and Management	
AFW-6	Methane and Biogas Energy Programs	Charlie Sedlock

Draft Straw Proposals

- See Straw Proposal Template
 - Distributed to TWG via e-mail and posted to AFW TWG webpage.

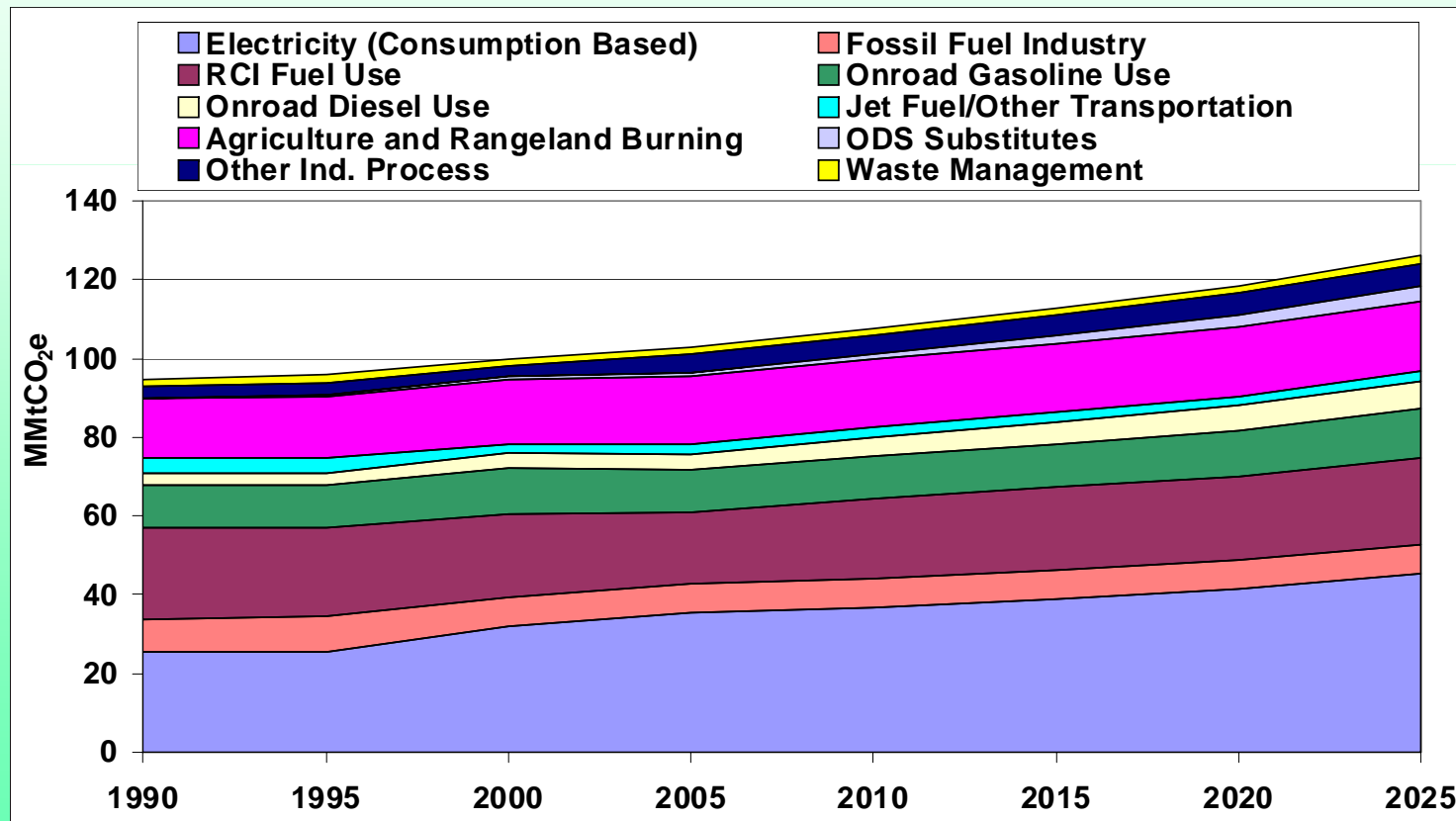
Kansas Draft GHG Emissions Inventory and Forecast

- Further input from AFW TWG on Inventory and Forecast?
- CCS seeking review of Waste Management source data

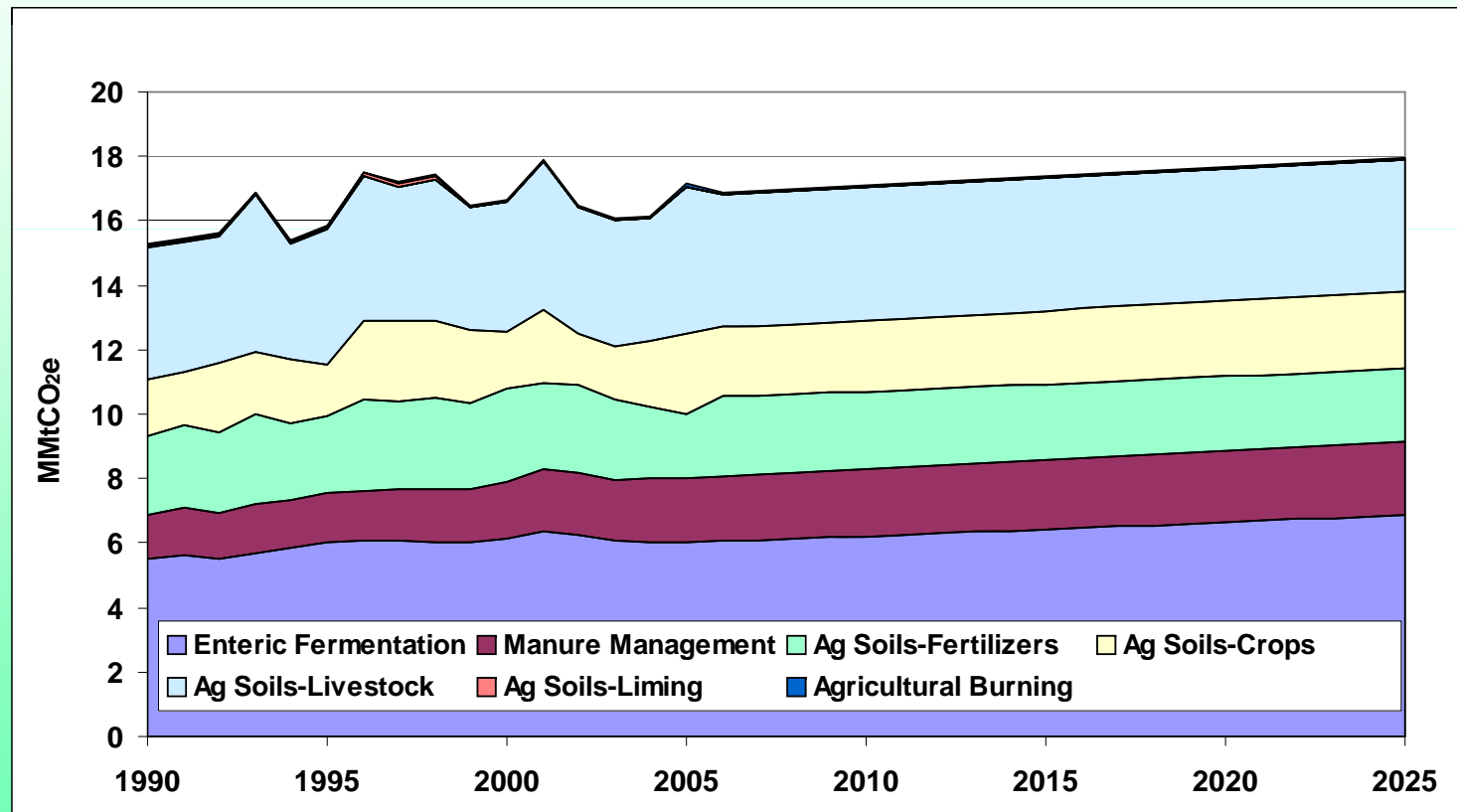
Kansas Draft GHG Emissions Inventory and Forecast

Kansas Gross GHG Emissions By Sector, 1990-2025

(Consumption Based)



Agriculture



Agriculture

- Data Sources

- Crop Production: U.S. Department of Agriculture (USDA) National Agriculture Statistical Service (NASS)
- Livestock: USDA/NASS
- Fertilizer: Fertilizer Institute

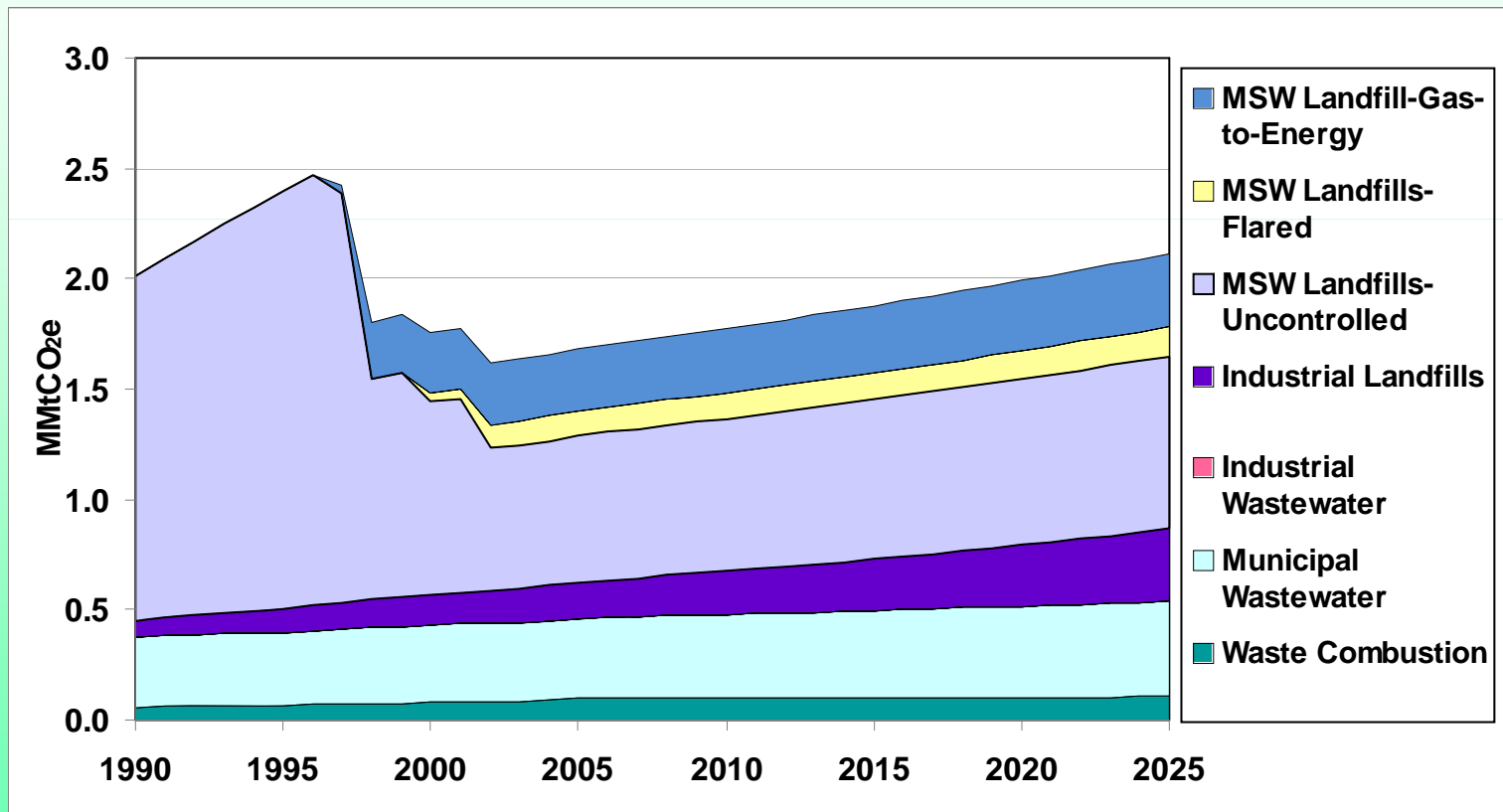
- Methods

- Crops: SIT emission factors and crop production data
- Livestock: SIT emission factors and livestock populations
- Fertilizer: SIT fertilizer consumption
- Dairy cattle population projections based on Food and Agricultural Policy Research Institute (FAPRI) report.
- Sheep and Layer population projections use a negative growth factor to show population decline while maintaining positive population estimates
- All other livestock projections estimated based on linear forecasts of 1990-2005 populations
- Projections for other categories based on historical growth trends

Agriculture

- Key Assumptions
 - Future growth for agricultural soils will follow historical trends
 - Livestock population growth will follow historical trends
- Key Uncertainties
 - Manure management emission factors derived from limited data sets
 - Livestock numbers based on point estimates for each year to represent populations that fluctuate throughout the year
 - Projection assumptions

Waste Management



Waste Management

- Data Sources
 - SIT default used (population-based)
 - Kansas DHE provided data on landfill waste emplacement and landfill controls, waste incineration, rural county populations for estimating open residential burning, municipal wastewater treatment, and industrial wastewater
 - Open burning at rural county residential sites based on EPA's 2002 National Emissions Inventory estimate
 - SIT emissions factors and waste composition used
- Methods
 - SIT with data sources above
 - Application of emissions controls based on state-provided data
 - Growth based on historical emissions

Waste Management

- Key Assumptions
 - Growth Rates
 - Landfills – based on historic emissions growth after emissions controls were applied (2003-2005)
 - Industrial solid waste emissions – based on SIT default assumption of 7% of municipal solid waste (MSW) emissions
 - Industrial and Municipal wastewater – based on historic emissions growth (1990-2005)
- Key Uncertainties
 - Future controls applied to uncontrolled landfills
 - Industrial landfills – SIT default of 7% of municipal landfills
 - Emissions from facultative lagoons

Forestry and Land Use Emissions (MMtCO₂e)

KS Forest Pool	1981-1994 Flux (MMtCO₂e)	1994-2005 Flux (MMtCO₂e)
Live Tree	-3.32	-5.39
Understory	0.01	-0.23
Standing Dead	-0.09	-0.18
Down Dead	-0.19	-0.42
Forest Floor	-0.48	0.17
Soil Carbon	-3.00	-5.59
Harvested Wood Products	0.0	0.0
Totals	-7.09	-11.66
Totals (excluding soil carbon)	-4.10	-6.07

Forestry and Land Use Emissions (MMtCO₂e)

	1990	2000	2005	2010	2020	2025
Forested Landscape (excluding soil carbon)	-4.10	-6.07	-6.07	-6.07	-6.07	-6.07
Urban Forestry and Land Use	-2.33	-0.53	-0.56	-0.56	-0.56	-0.56
Rangeland Burning	0.68	0.68	0.68	0.68	0.68	0.68
Sector Total	-5.75	-5.92	-5.95	-5.95	-5.95	-5.95

Note: Urban Forestry and Land Use category consists of carbon storage in urban trees, N₂O from settlement soils, and carbon storage in landfilled yard trimmings and food scraps.

Forestry and Land Use Emissions (MMtCO₂e) – Updated to include N₂O Soil Emissions

Subsector	1990	2000	2005	2010	2020	2025
Forested Landscape (excluding soil carbon)	-4.1	-6.07	-6.07	-6.07	-6.07	-6.07
Rangeland Burning (CH ₄ and N ₂ O)	0.68	0.68	0.68	0.68	0.68	0.68
Nitrous Oxide from Soils	0.26	0.32	0.36	0.36	0.36	0.36
Urban Forestry and Land Use	-2.33	-0.53	-0.56	-0.56	-0.56	-0.56
Total	-5.49	-5.60	-5.59	-5.59	-5.59	-5.59

Note: Urban Forestry and Land Use category consists of carbon storage in urban trees, N₂O from settlement soils, and carbon storage in landfilled yard trimmings and food scraps.

Forestry

- Data Sources
 - US Forest Service (USFS) Forest Inventory and Analysis (FIA) data for Kansas for 1981, 1994, and 2005
 - USFS also provides modeled estimates for harvested wood products
 - EPA SIT default data for urban forestry and land use
 - KDHE for rangeland burning activity data
- Methods
 - Forested Landscape: USFS Carbon Calculations Tool (CCT) to estimate carbon stocks and fluxes for 1990-2005
 - Carbon pool data for the 1981-1994 and 1994-2005 time periods were used to quantify carbon fluxes in Iowa
 - Urban Forestry and Land Use, Rangeland Wildfires: EPA SIT
 - Future projections were assumed to remain at 2005 levels

Forestry

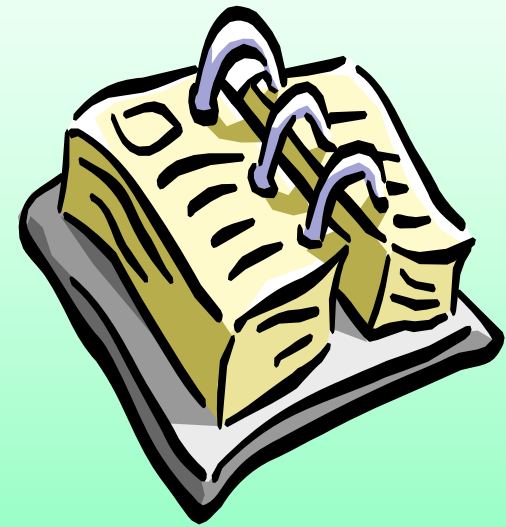
- Key Assumptions
 - 1990-2005 carbon stock change representative of current and historical conditions
 - No significant change in sequestration from 2006-2025
- Key Uncertainties
 - Effects of future development on forested acreage
 - Effects of near-term climate change on forest sequestration levels
 - Methodological differences in USFS FIA surveys
 - Urban forestry and land use emissions rely on national default data instead of state-specific data

Next Steps TWGs, KEEP

- KEEP Review and Approval of Straw Proposals from TWGs at Meeting #4
- TWG begin quantification of Policy Design Goals and development of Policy Options Document

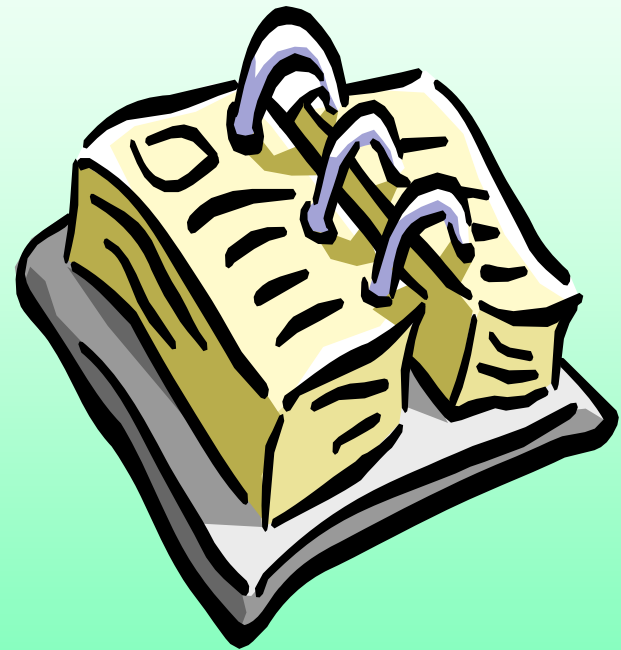
Next TWG Meeting

- Agenda:
 - Begin quantification and development of Policy Options Document
 - Review Changes to draft KS GHG Emissions Inventory and Forecast
- Time and Date - TBD.



Next KEEP Meeting

- Agenda:
 - Review and approve Straw Proposals
 - Review and Approve TWG suggested updates to the draft KS GHG Emissions Inventory and Forecast, if any
 - Prepare for next steps (quantification of recommendations)
- April 30, 2009, site TBA.



Timing – KEEP Meetings

Date	Action
May 20, 2008	1st KEEP meeting
August 5, 2008	2nd KEEP meeting
December 9, 2008	3rd KEEP meeting
April, 2009	4th KEEP meeting
August, 2009	5th KEEP meeting
November, 2009	6th KEEP meeting
January, 2010	Final Report due
Between KEEP Meetings	TWG conference calls and meetings

Public Input, Announcements

Adjourn