



Kansas Energy and Environmental Policy Advisory Group (KEEP)

AFW Technical Work Group (TWG)

Meeting #4, November 13, 2008

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

1. Introductions
2. Meeting Purpose and Goals
3. Approval of Summary of Prior Call/ Meeting
4. Goals for AFW TWG Meeting #4
5. Review and Discuss Results of AFW TWG Balloting
6. Review Progress of KS Inventory and Forecast Updates
7. Discussion and Recommendations for Improvement to the draft KS GHG Inventory- Forecast
8. Review of Next Steps
9. Agenda, Date and Time for Next Meetings
10. Public Comments
11. Announcements
12. Adjourn

Goals for TWG Meeting #4

- Review and discuss results of AFW TWG Balloting Process
- Complete final list of priorities to submit to the KEEP for review
- Review current status and any further changes needed to the Draft KS GHG Emissions Inventory and Forecast

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

Balloting on Priorities for Analysis

- Each TWG member received a ballot via e-mail. Balloting took place from October 17 through November 3
- Each member cast 10 votes, with no more than one vote per sub-option.
- CCS compiled results into 3 Tiers and distributed to the TWG for review and discussion
- On today's call, TWG will review and identify priority options for analysis to be recommended to KEEP.
- Priority options for analysis may include bundled options that combine several individual sub-options from the catalog

Results of AFW TWG Balloting

- 10 out of 14 members cast ballots
- High priorities selected as those where the primary catalog item received selection from at least 5 members
- Within the high priority options, catalog items consolidated based on TWG catalog items that received at least 2 selections

Results of AFW TWG Balloting

High Priority Options

- **AFW-1:** Expanded Utilization of Biomass Feedstocks for Electricity, Heat, or Steam Production
- **AFW-2:** In-State Liquid Biofuels Production
- **AFW-3:** Agricultural Soil Carbon & Nutrient Management
- **AFW-4:** Manure Management and Waste Energy Utilization
- **AFW-5:** Forest and Rangeland Carbon Protection and Management
- **AFW-6:** Methane and Biogas Energy Programs

Policy Design Proposals

- KEEP identifies 30-50 draft potential options for further development
- TWGs screen, prioritize, and propose initial policy option design (“straw proposals”)
 - Timing
 - Goals
 - Parties Involved
- CCS quantifies and presents for review
- TWG develops other portions of the policy (e.g. implementation mechanisms, related programs, etc)
- KEEP revisits list of potential priorities, as needed

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

Next Steps

- Review results of KEEP Meeting #3
- Develop straw proposals for each priority policy recommendation

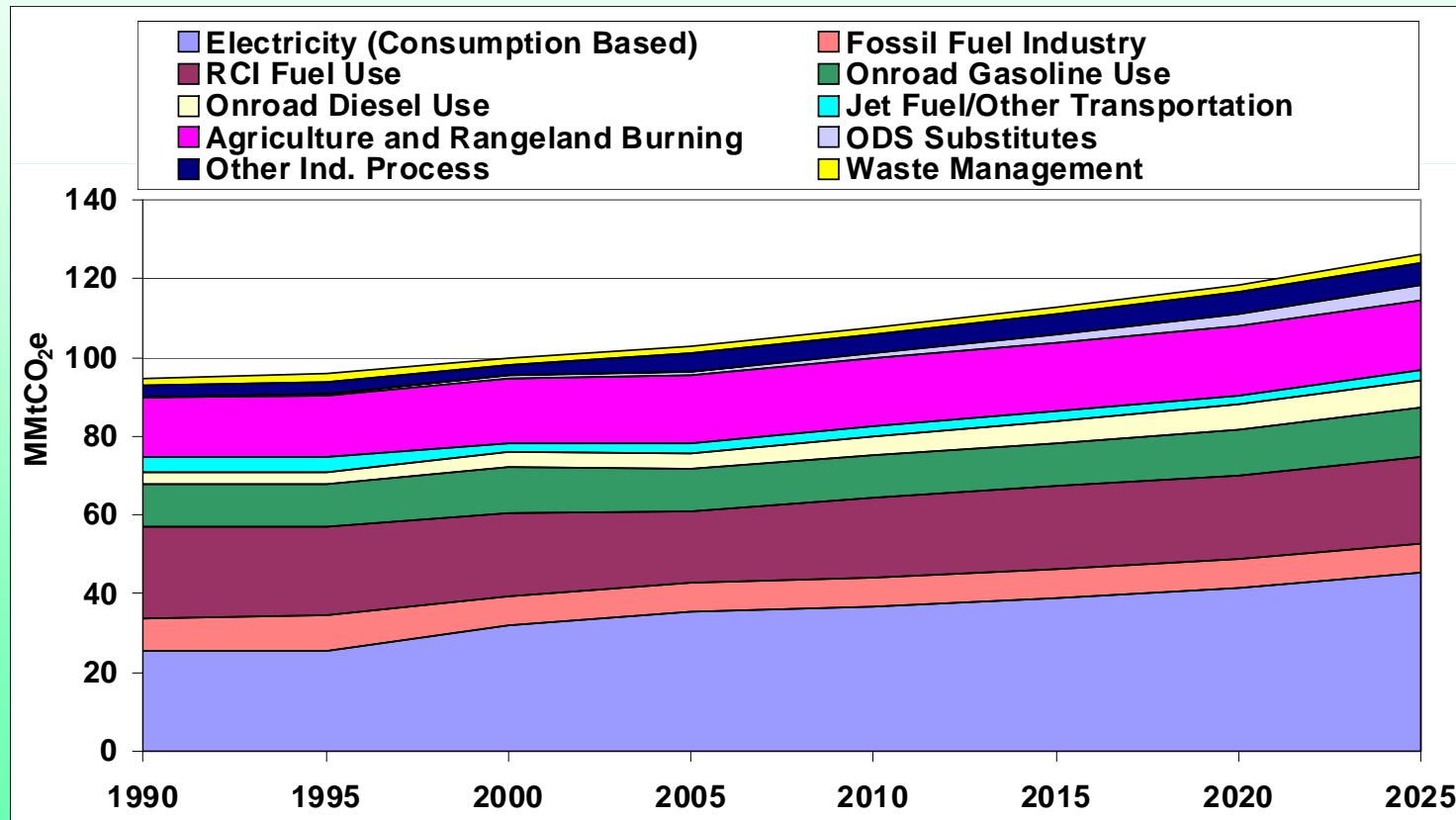
Kansas Draft GHG Emissions Inventory and Forecast

- Review I&F Information for TWG Sector
- Develop any Proposed Recommended Changes to the I&F
- CCS Review of Received Comments
 - Ag. Burning
 - Forest Acreage

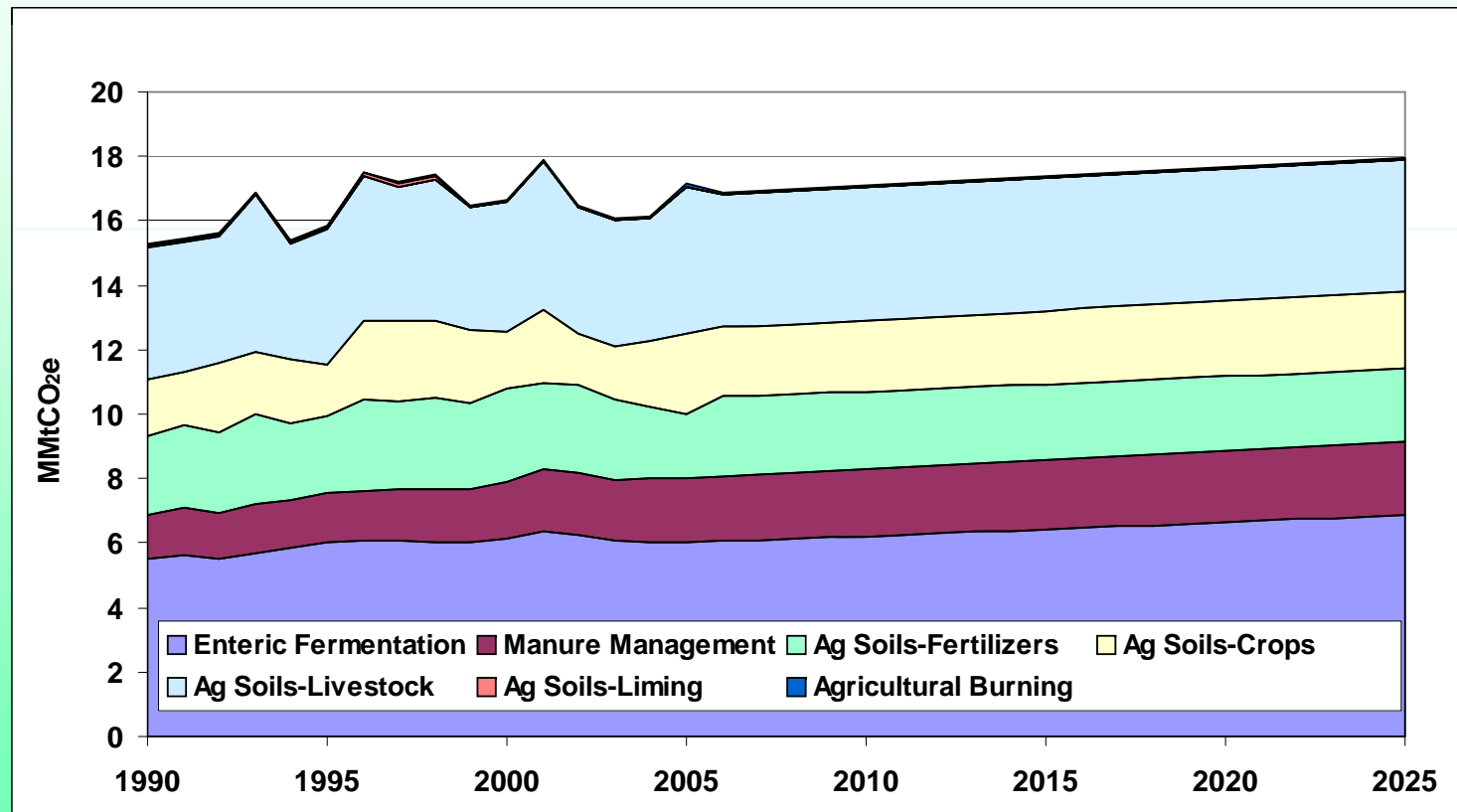
Kansas Draft GHG Emissions Inventory and Forecast

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

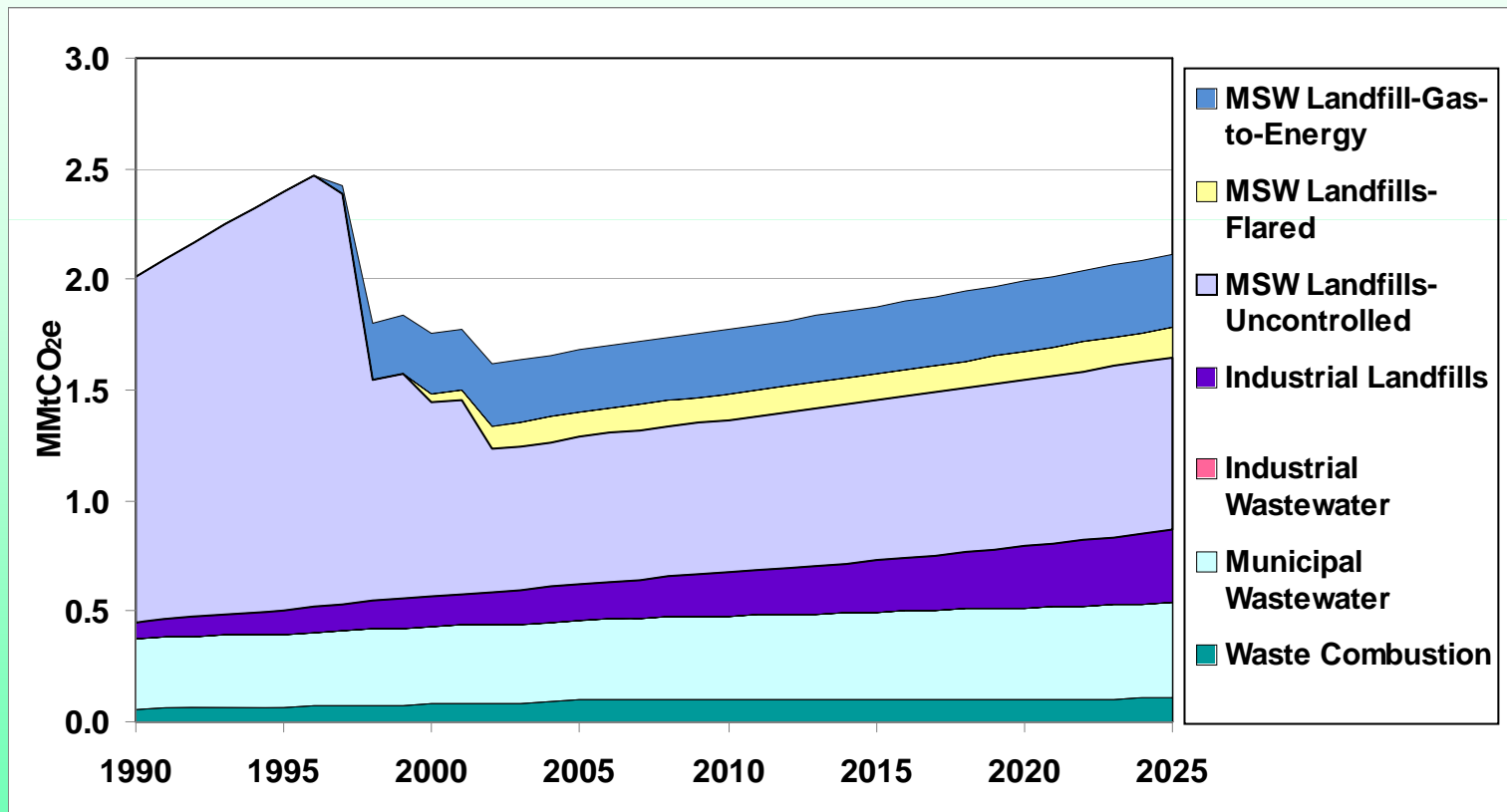
- Methods

- 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

- 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

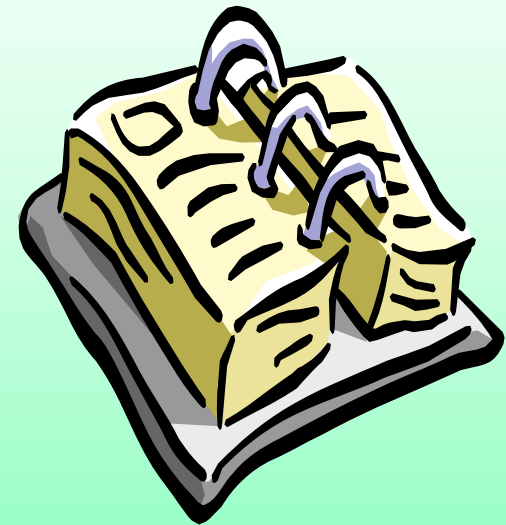
- Key Assumptions
 - 1990-2005 carbon stock change representative of current and historical conditions
 - No significant change in sequestration from 2006-2025
- Key Uncertainties
 - Effects of future development on forested acreage
 - Effects of near-term climate change on forest sequestration levels
 - 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

- TWG meeting before next KEEP meeting
 - Review and comment on Draft KS GHG Emissions Inventory and Forecast
- KEEP Review and Approval of Policy Options from TWGs at Meeting #3

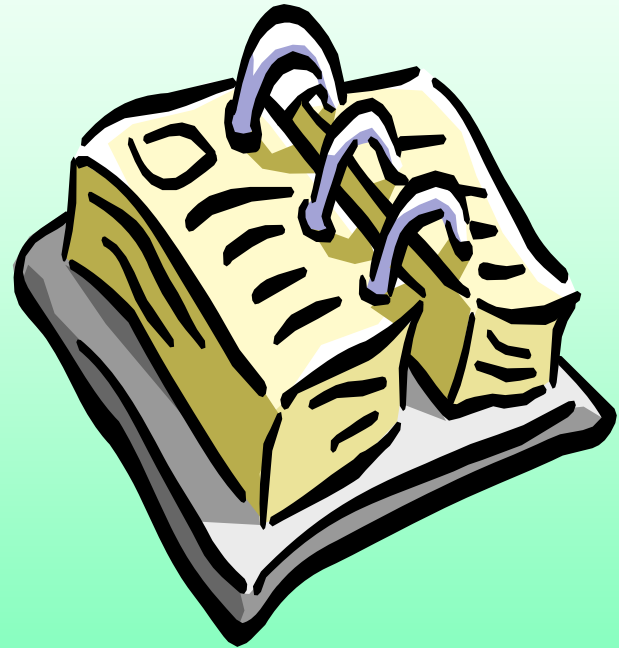
Next TWG Meeting

- Agenda:
 - Begin development of Straw Proposals
 - Develop Recommended Changes to draft KS GHG Emissions Inventory and Forecast
- Time and Date- 8:30 – 10:00 AM
CT January 8, 2009.



Next KEEP Meeting

- Agenda:
 - Review and Approve Proposed Priority Policy Options from TWGs for Development of Straw Proposals
 - Review and Approve TWG suggested updates to the draft KS GHG Emissions Inventory and Forecast, if any
 - Prepare for next steps (Development of Straw Policy Option Proposals)
- December 9, 2008 in Topeka, KS



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