

Kansas Energy and Environmental Policy Advisory Group (KEEP)



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AFW Technical Work Group (TWG)

Meeting #3, September 11, 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 TWG Meeting #3
5. Review Updates to the Catalog of States' Actions by KEEP
6. Review the Process for Notional Ratings and Balloting to Formulate the Top Priorities from the Catalog for Detailed Design
7. Discuss Notional Ratings of State Policy Options in the Catalog
8. Discussion and Recommendations for Improvement to the draft KS GHG Inventory- Forecast
9. Review of Next Steps
10. Agenda, Date and Time for Next Meetings
11. Public Comments
12. Announcements
13. Adjourn

Goals for TWG Meeting #3

- Review Changes made by KEEP to the draft Catalog of Potential State Actions and Provide Additional Background Info on Options, as Needed
- Discuss Notional Ratings of the TWG Policy Options
- Review and Begin Developing any Needed Changes to the draft KS GHG Emissions Inventory and Forecast

Catalogs of Potential State Actions

- See draft AFW TWG Catalog
- Review Key Additions or Changes from KEEP to the Catalog

Additions to Catalog from KEEP

- **AFW-1.4:** Integrated Bioenergy Production
- **AFW-1.8:** Bioenergy Research
- **AFW-2.4:** Changes in Livestock (Dairy) Practices to Increase Efficiency
- **AFW-3.7:** Perennial Crop Production
- **AFW-4.2:** Land-use Management that Promotes Permanent Cover – State Input on Federal Policy
- **AFW-4.4:** Prioritize Environmental Remediation Actions for GHG Benefits.
- **AFW-11.6:** Use of Wetlands for Energy Efficiency and Carbon Sequestration

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

Screening of Potential Actions - Agriculture Sample

Option No.	Climate Mitigation Option	Priority for Analysis	Potential GHG Emissions Reduction	Potential Cost or Cost Savings	Additional Impacts, Feasibility Considerations	Notes
AFW-1	AGRICULTURE – PRODUCTION OF FUELS AND ELECTRICITY					
1.1	Manure Digesters/Other Waste Energy Utilization**					
1.2	Biodiesel Production (incentives for feedstocks and production plants)					
1.3	Biomass Feedstocks for Electricity or Steam Production**					
1.4	Ethanol Production					

Notional Ratings

- For each sub-option, use a High, Medium or Low Notional Rating in the Potential GHG Reductions and Costs Columns
- Submit Notional Ratings to CCS for Compilation
- Identify Proposed Option Consolidations

Balloting on Priorities for Analysis

- Each TWG member will receive a ballot via e-mail. Balloting will occur after Call #3
- Each member may cast 10 votes, with no more than one vote per sub-option. Return ballot to CCS.
- CCS will compile results into 3 Tiers and distribute to the TWG for review and discussion on call #4
- On call #4, 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

Policy Design Proposals

- KEEP identifies about 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
- 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 MMTCO_{2e}
 - 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 Balloting Results
- Discuss Bundling of Options, if needed
- Identify initial draft priorities for analysis from the catalog using the balloting process

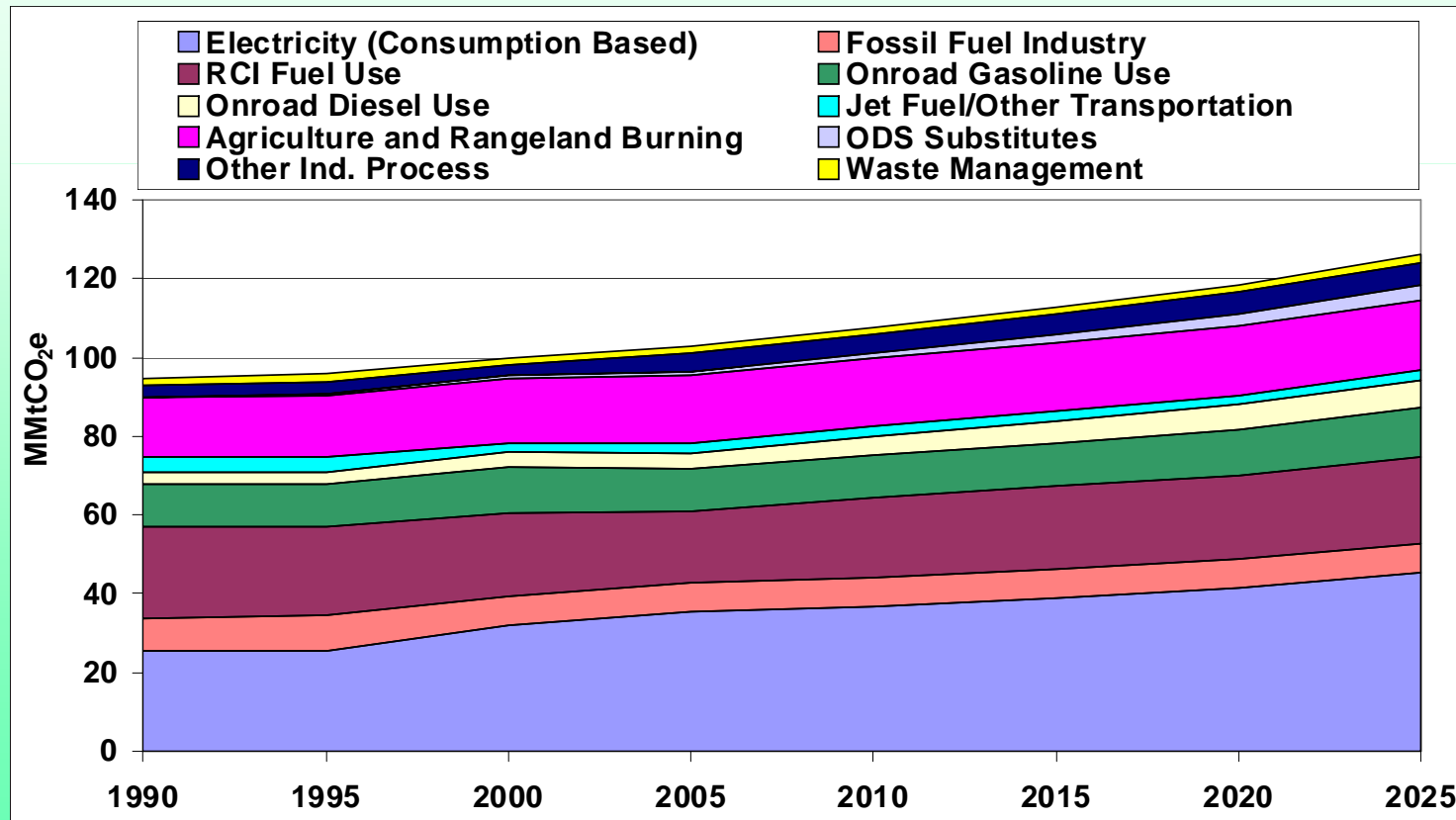
Kansas Draft GHG Emissions Inventory and Forecast

- Review I-F Information for TWG Sector
- Develop any Proposed Recommended Changes to the I-F

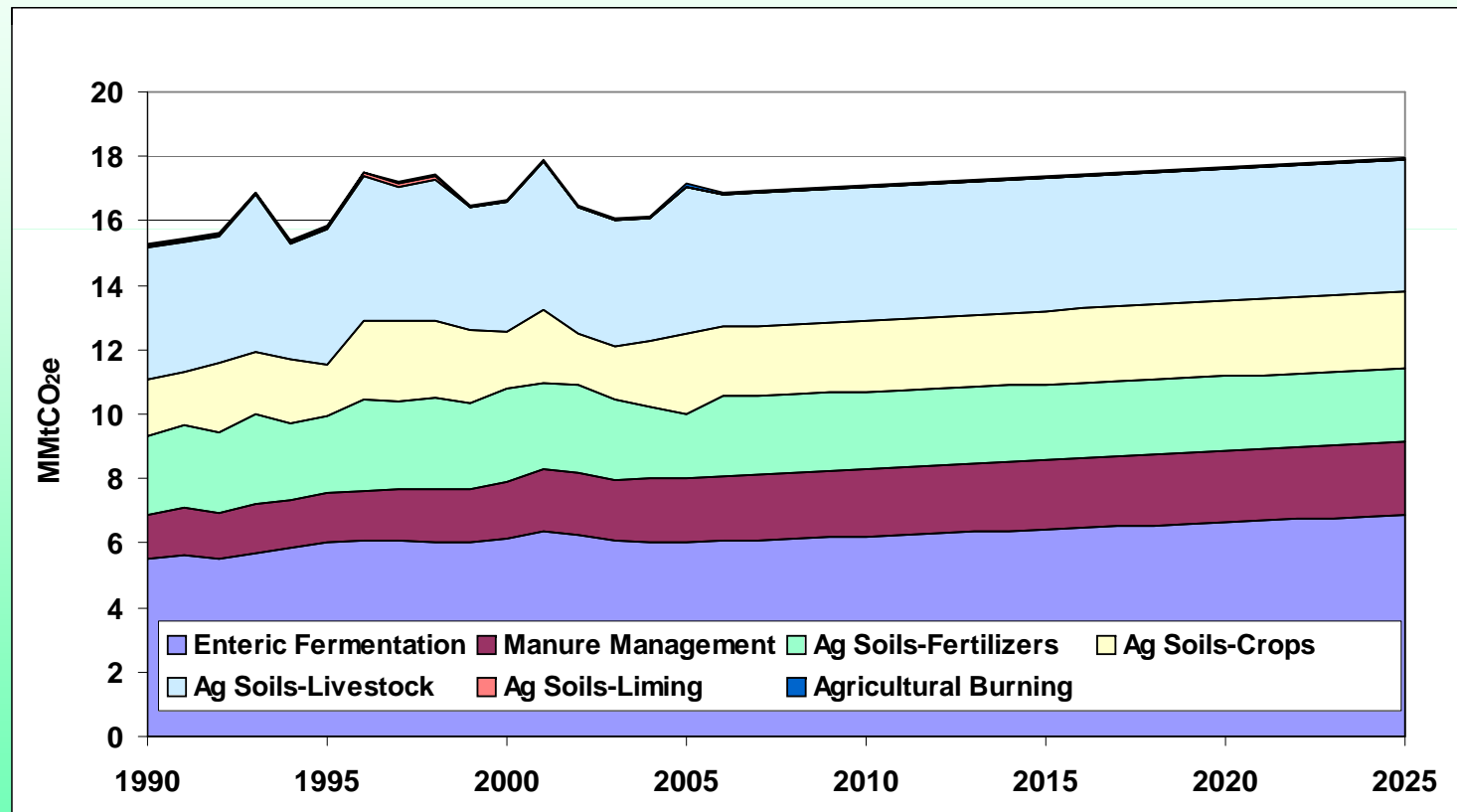
Kansas Draft GHG Emissions Inventory and Forecast

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

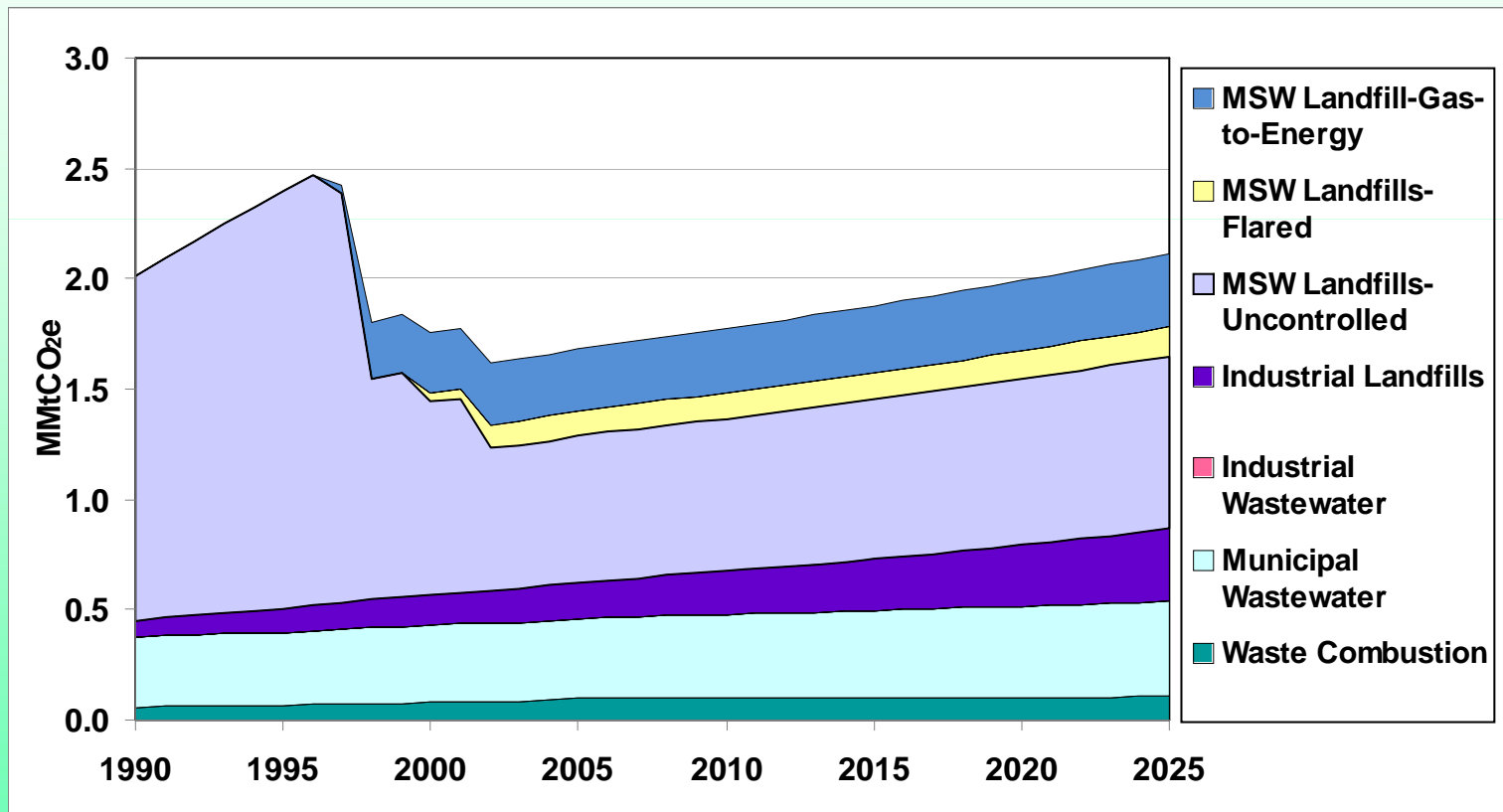
- Methods

- 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

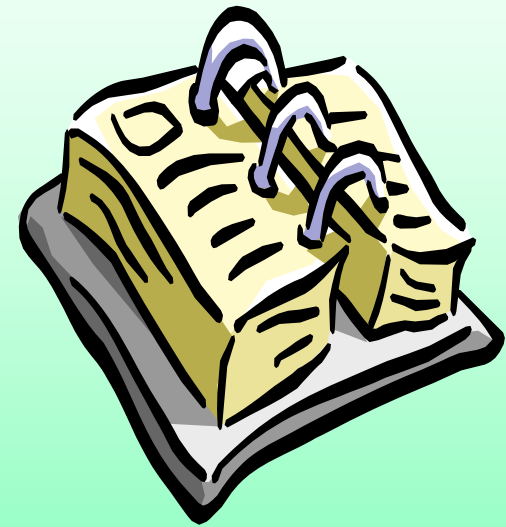
- Key Assumptions
 - 1990-2005 carbon stock change representative of current and historical conditions
 - No significant change in sequestration from 2006-2025
- Key Uncertainties
 - Effects of future development on forested acreage
 - Effects of near-term climate change on forest sequestration levels
 - 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
 - Develop Proposed Priority Policy Options for Further Analysis
 - Review and comment on Draft KS GHG Emissions Inventory and Forecast
- KEEP Review and Approval of Policy Options from TWGs at Meeting #3

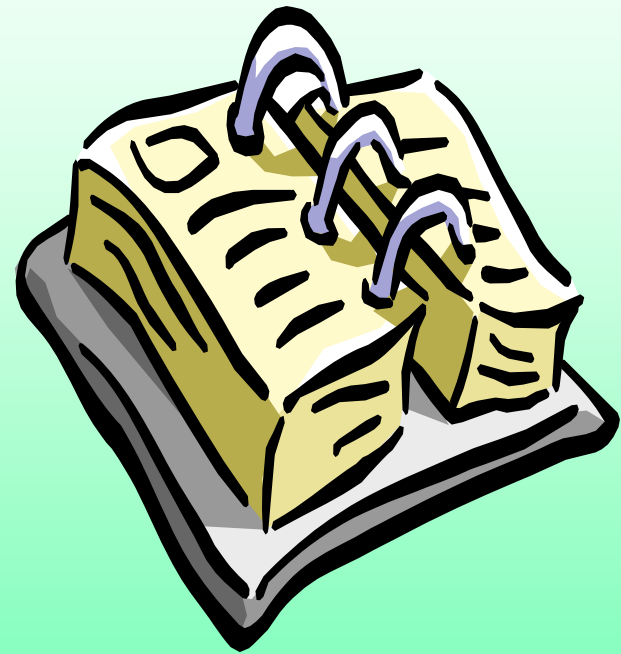
Next TWG Meeting

- Agenda:
 - Develop Initial Recommended Priority Policy Options from the Catalog to recommend to KEEP for Further Analysis
 - Develop Recommended Changes to draft KS GHG Emissions Inventory and Forecast
- Time and Date- 8:30 – 10:00 AM
CT November 13, 2008.



Next KEEP Meeting

- Agenda:
 - Review and Approve Proposed Priority Policy Options from TWGs for Further Analysis
 - 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	4 th KEEP meeting
August, 2009	5 th KEEP meeting
November, 2009	6 th KEEP meeting
January, 2010	Final Report due
Between KEEP Meetings	TWG conference calls and meetings

Public Input, Announcements

Adjourn