Catalog of Mitigation Options
Oil and Gas Technical Working Group

Suggested Revision to Catalog as of July 14, 2008, for Input to July 15, 2008 MAG meeting

Some TWG members provided suggested revisions to this document after it had been posted to the MAG website on July 9, 2008. This document contains those suggestions marked in italics. The TWG has not discussed these revisions. Some reorganization of options has happened as a result of the revisions.

A catalog of state-level, GHG-reducing actions and mitigation options based on actions undertaken or considered by state, local and private actors. Brief descriptions of these options, and some of the related state actions underway, are available in a companion document.

Key to Preliminary Rankings of Options in the Tables that Follow:

Potential GHG Emission Reductions 1/	Potential Cost or Cost Savings 1/ 2/
High (H): At least 1.0 million metric tons (MMt) carbon dioxide equivalent (CO_2e) per year by 2020 (~2% of current AK emissions)	**High (H)**: $50 per metric ton CO_2e ($MtCO_2e$) or above
Medium (M): From 0.1 to 1.0 $MMtCO_2e$ per year by 2020	**Medium (M):** $5-50/$MtCO_2e$
Low (L): Less than 0.1 $MMtCO_2e$ per year by 2020, or 1 MMtCO2e by 2050	**Low (L):** Less than $5/$MtCO_2e$
Uncertain (U): Not able to estimate at this time	**Negative (Neg):** Net cost savings
	Uncertain (U): Not able to estimate at this time

1/ Several options may overlap in terms of emissions reductions and/or cost impacts. Estimates assume options would be implemented independently from other options.
2/ Costs are denoted by a positive number. Cost savings (i.e., "negative costs") are denoted by a negative number.

Definition of "Priorities for Analysis" [these will be assigned by the MAG/TWG as part of this process]:

- **High:** High priority options will be analyzed first.
- **Medium:** Medium priority options will be analyzed next, time and resources permitting.
- **Low**: Low priority options will be analyzed last, time and resources permitting.

Option No.	GHG Reduction Policy Option	Potential GHG Emissions Reduction	Cost per Ton	Other Considerations: Jobs, Fuel Imports, Externalities, Feasibility	Priority for Analysis	Notes / Related Actions in Alaska Proposed actions at Federal level
OG-1	OVERARCHING POLICIES					
1.1	*Ensure Growth of Alaska's Jobs and Economy*					
1.2	*Avoid Redundancy and Conflicting of Federal GHG Program with other programs.*					
1.3	Incentives to Reduce the GHG-intensity of Fossil Fuel Production					
1.4	Reduce Energy Demand for Fossil Fuels in Residential, Commercial, Industrial (non-oil and gas), Electric, and Transportation Sectors					This option will likely also be considered in Energy Supply/Energy Demand TWG and in the Transportation and Land-Use TWG. Oil and Gas TWG want to ensure this option is considered and share any information with other TWGs.
1.5	*Gap Analysis of* Research and Development (R&D) Opportunities, including R&D for low-GHG Fossil Fuel Technologies					
1.6	*Evaluate* Market-Based Mechanisms to Establish a Price Signal for GHG Emissions (GHG Cap-and-Trade or Tax/Emissions Fee or Federal Regulations)					

Option No.	GHG Reduction Policy Option	Potential GHG Emissions Reduction	Cost per Ton	Other Considerations: Jobs, Fuel Imports, Externalities, Feasibility	Priority for Analysis	Notes / Related Actions in Alaska Proposed actions at Federal level
OG-2	*PREPARE FOR FEDERAL REQUIREMENTS FOR GHG*					
2.1	*Support Federal GHG Program*					
2.2	*Support for Regional Tradeoffs Amongst Carbon and Currently Regulated Pollutants*					
OG-3	CARBON CAPTURE AND STORAGE OR REUSE IN OPERATIONS: INCENTIVES, SUPPORT OR REQUIREMENTS					
3.1	*Evaluate Incentives, Economics and Feasibility of* CO_2 capture in O&G operations					
3.2	*Evaluate Incentives, Economics and Feasibility of* CO_2 storage or reuse in O&G operations					
3.3	*Evaluate Economics and Feasibility* CO2 use for Enhanced Oil Recovery (EOR) or Other Reuse in O&G Operations					
3.4	*Evaluate Economics and Feasibility* of CO2 capture and storage or reuse (CCSR) in refineries					

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3.5	*Support EPA Development of UIC (Underground Injection Control) rules for CO_2 injection*					
OG-4	FUEL PRODUCTION AND PROCESSING					
4.1	Oil and Gas Production: Incentives, Support, or Requirements for Energy Efficiency					
4.2	Oil and Gas Production: Energy efficiency Incentives, Support, or Requirements for Reducing Fugitive Emissions					
4.3	Improve energy efficiency / cogeneration in refineries					
4.4	Reduce Fugitive Emissions at Refineries					
4.5	*Evaluate Economics and Feasibility of* Low-GHG fuels in refineries					
4.6	Renewable Energy Technologies for Oil and Gas Production					

Option No.	GHG Reduction Policy Option	Potential GHG Emissions Reduction	Cost per Ton	Other Considerations: Jobs, Fuel Imports, Externalities, Feasibility	Priority for Analysis	Notes / Related Actions in Alaska Proposed actions at Federal level
4.7	Energy production, Distribution, and Sharing Agreements for Upstream Oil & Gas Facilities					
4.8	*Evaluate Economics and Feasibility of* Reducing flaring					
4.9	Low-GHG Hydrogen production incentives and support					*Some TWG members suggest deleting this option or removing it from the Oil and Gas sector*
OG-5	FUEL DELIVERY					
5.1	Natural Gas Transmission and Distribution: Incentives, Support or Regulations to Reduce Fugitive Emissions					
5.2	Natural Gas Transmission: Incentives, Support or Regulations to Improve Efficiency					
5.3	Improve efficiency of oil transmission and distribution systems					
5.4	Reduce Fugitive Emissions from Oil transmission and distribution systems					

Option No.	GHG Reduction Policy Option	Potential GHG Emissions Reduction	Cost per Ton	Other Considerations: Jobs, Fuel Imports, Externalities, Feasibility	Priority for Analysis	Notes / Related Actions in Alaska Proposed actions at Federal level
5.5	Improve Energy Efficiency in Gas Distribution Systems					