



DRAFT Catalog of Mitigation Options Oil and Gas Technical Working Group

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 ₂ e) per year by 2020 (~2% of current AK emissions) | High (H): \$50 per metric ton CO ₂ e (MtCO ₂ e) or above |
| Medium (M): From 0.1 to 1.0 MMtCO ₂ e per year by 2020 | Medium (M): \$5-50/MtCO ₂ e |
| Low (L): Less than 0.1 MMtCO ₂ e per year by 2020, or 1 MMtCO ₂ e by 2050 | Low (L): Less than \$5/MtCO ₂ e |
| 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 | Research and Development (R&D), including R&D for low-GHG Fossil Fuel Production Technologies | | | | | |
| 1.2 | Incentives to Reduce the GHG-intensity of Fossil Fuel Production | | | | | |
| 1.3 | Market-Based Mechanisms to Establish a Price Signal for GHG Emissions (GHG Cap-and-Trade or Tax/Emissions Fee) | | | | | |
| 1.4 | Expand the Protocol for Required GHG Reporting | | | | | |
| 1.5 | 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 |
| OG-2 | CARBON CAPTURE AND STORAGE OR REUSE IN OPERATIONS: INCENTIVES, SUPPORT OR REQUIREMENTS | | | | | |
| 2.1 | CO ₂ capture in O&G operations (separated from 2.2) | | | | | |
| 2.2 | CO ₂ storage or reuse in O&G operations | | | | | |

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|-------------|---|-----------------------------------|--------------|--|-----------------------|---|
| | (separated from 2.1) | | | | | |
| 2.3 | CO ₂ capture and storage or reuse (CCSR) in refineries | | | | | |
| 2.4 | CO ₂ use for Enhanced Oil Recovery | | | | | |
| OG-3 | FUEL PRODUCTION AND PROCESSING | | | | | |
| 3.1 | Oil and Gas Production: Energy efficiency Incentives, Support, or Requirements | | | | | |
| 3.2 | Low-GHG Hydrogen Production: Incentives and Support | | | | | |
| 3.3 | Reduce Fugitive Emissions at Refineries | | | | | |
| 3.4 | Renewable Energy Technologies for Oil and Gas Production | | | | | |
| 3.5 | Low-GHG fuels in refineries | | | | | |
| 3.6 | Improve energy efficiency / cogeneration in refineries | | | | | |
| 3.7 | Reduce flaring | | | | | |
| 3.8 | Energy production, Distribution, and Sharing Agreements for Upstream Oil & Gas Facilities | | | | | |

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|--------------------|--|-----------------------------------|--------------|--|-----------------------|---|
| 3.9 | Oil and Gas Production: Incentives, Support, or Requirements for reducing fugitive emissions | | | | | |
| OG-4 FUEL DELIVERY | | | | | | |
| 4.1 | Natural Gas Transmission: Incentives, Support or Regulations to Reduce Fugitive Emissions | | | | | |
| 4.2 | Natural Gas Transmission: Incentives, Support or Regulations to Improve Efficiency | | | | | |
| 4.3 | Improve efficiency of oil transmission and distribution systems | | | | | |
| 4.4 | Reduce Fugitive Emissions from Oil transmission and distribution systems | | | | | |
| 4.5 | Improve Energy Efficiency in Gas Distribution Systems | | | | | |