ALASKA CO_2 GEOLOGIC SEQUESTRATION OVERVIEW

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Consensus is building within the U.S. Congress to enact nationwide greenhouse gas (GHG) regulations that could have significant impacts on Alaska. In most projections, carbon capture and sequestration (CCS) will need to play a prominent role over the long term in order to meet the kinds of the mitigation goals being proposed. To best manage Alaska emissions we first need to understand our sources, next to minimize them, and finally to determine what can be done with what is left. CCS, which includes both terrestrial (growth, forests, etc.) and geologic (capture and inject CO2 underground) sequestration, is the generally proposed mechanism to handle all remaining emissions. Much work is being done to address the complex and expensive issues involved in the capture, transport, injection, and long term geologic storage of the carbon. This talk will present an overview of the types, locations, and relative magnitudes of stationary emissions, an overview of the types of geologic sequestration being considered, and a summary of the work being done to identify realistic potential geologic sequestration sites in Alaska.

Sources of GHG emissions were identified in the *DRAFT Alaska DEC Summary Report of Improvements to the Alaska Greenhouse Gas Emission Inventory, January 2008.* This report was based on 2002 emissions, and the analysis is instructive. The vast majority of GHG emissions in the state come from transportation (~35%) and from stationary sources related to power and heat generation (~50%). Only those emissions from stationary sources can be captured and geologically sequestered. Of those stationary emissions, 75% are related to the oil and gas industry.

CO2 can potentially be stored in all the same places where we find hydrocarbons. Storage space is being analyzed, in order of likelihood of success, in 1) depleted oil and gas fields, 2) saline reservoirs, 3) unmineable coal seams, and 4) methane hydrates.

Published initial broad brush estimates for storage capacity are very large, and were intended to convey the maximum end point of geologic sequestration capabilities. More fine tuned estimates are required, and to that end State agencies are working alone and with other federal agencies to describe geologic sequestration potential in the state.