

## ATCO Salt Cavern Storage Expansion Project - Summary of Issues

This document provides a high-level summary of the issues submitted to the Impact Assessment Agency of Canada (the Agency) regarding the ATCO Salt Cavern Storage Expansion Project (the Project) during the comment period on the Initial Project Description submitted by ATCO Energy Solution Ltd. (the proponent). The issues highlight information needs to support the Agency's decision on whether an impact assessment is required under section 16 of the *Impact Assessment Act* and the Planning phase documents and further assessment, if an assessment is required. Original submissions are posted on the Canadian Impact Assessment Registry (Reference Number #81297). Categories are listed in alphabetical order.

<b>Accidents and Malfunctions</b>
Clarity on risks and potential effects of failure of containment structures on the brine pond, spills or leaks, including leakage of materials from the salt caverns, pipeline ruptures, explosions, uncontrolled releases of explosive gases, and emergency venting from pressurized lines and vessels, as well as planned mitigation measures.
Clarity on the spill prevention, preparedness, response measures and monitoring systems, response capacities, and emergency management plans that will be implemented.
<b>Acoustic Environment</b>
Recommendation that the noise impact assessment be conducted in accordance with Health Canada's <i>Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise</i> , including a comparison between existing (baseline) noise, Project-related noise, and Project plus baseline noise levels.
<b>Alternative Means of Carrying Out the Project</b>
Discuss the potential impacts of the alternative means of carrying out the Project on greenhouse gas (GHG) emissions and how GHG emissions were considered as a criterion in the alternatives selection.
<b>Atmospheric Environment</b>
Clarity on whether the assessment of potential impacts to air quality includes stationary combustion sources, emissions from equipment (intentional and non-intentional), flaring and venting, fugitive emissions sources, industrial process emissions (if applicable), and particulate matter from activities that cause physical disturbance to the land, such as earth moving, land clearing, drilling, and transportation.
Clarity on the types of air contaminants that will be released from the Project during all phases and whether potential releases of volatile organic compounds, sulphur oxides, nitrogen oxides, carbon monoxide, hydrogen sulphide, coarse and fine particulate matter, diesel particulates, polycyclic aromatic hydrocarbons, and metals were considered.
Clarity on whether federal or provincial air quality standards, such as the Canadian Ambient Air Quality Standards or Alberta Ambient Air Quality Objectives, were used to assess potential effects to human health from air pollutants, based on predicted concentrations.
Potential effects to terrestrial and aquatic ecosystems, including water, soil, plants, fish and fish habitat, and wildlife, due to deposition of atmospheric contaminants from the Project in the surrounding environment and potential acidification and exceedance of ecosystems' critical loads.

Potential effects to human health and sensitive ecosystem receptors due to degradation of local and regional air quality as a result of emissions associated with the Project and cumulative emissions.
<b>Climate Change and Greenhouse Gas Emissions</b>
Assessment of the Project's GHG emissions and contribution to climate change as per the Strategic Assessment of Climate Change (SACC), with consideration of the Government of Canada's long-term goal to achieve net-zero emissions by 2050 and a description of the planned mitigation measures, technologies, and best practices to be applied.
Provide an estimate of the maximum annual net GHG emissions for each phase of the project, including a breakdown of each term of Equation 1 of the SACC and the methodology, data, emission factors, and assumptions used (section 4.1.1, SACC).
Potential effects on carbon sinks (e.g. forested areas, cropland, grassland, wetlands, etc.) and implications for climate change, per section 4.1.2 of the SACC.
<b>Cumulative Effects</b>
Potential for the Project to result in increased upstream oil and gas activities due to the increase in storage capacity for natural gas liquids.
<b>Economic Conditions</b>
Employment estimates during operations is provided, but clarity is needed on the number of new employment opportunities, if any, that will be available during construction and whether the Project will generate indirect and/or induced employment opportunities and the possibility of a boom-bust cycle in the local economy as the Project moves from the construction to the operations phase, and means to mitigate and monitor effects.
Clarity on whether under-represented groups in the labour market, such as Indigenous peoples, women, and persons with disabilities, will be given priority for employment and/or training opportunities.
Need for information on the proponent's hiring strategy, including anticipated training opportunities. Include a description of the occupations involved, what skills may be required for potential candidates, and how information on job opportunities will be disseminated.
Need for medium and long-term economic projections for the region to assess the net social and economic benefits from indirect economic growth that may result from the Project.
Potential effects to the local economy, including the standard of living of nearby residents and property values.
<b>Effects of the Environment on the Project</b>
Potential effects of climate change on the Project that could lead to accidents and malfunctions, including clarity on measures or design features to increase the resilience of the Project to climate change.
<b>Fish and Fish Habitat</b>
Potential effects to fish and fish habitat and other aquatic life, including consideration of cumulative effects, due to surface disturbance and erosion, the potential introduction of contaminants into fish-bearing waterbodies, and effects to water quality and quantity, and means to mitigate and monitor effects.
<b>Follow-up and Monitoring</b>
Confirmation that engaged Indigenous groups will be informed or participate in the Groundwater Quality Monitoring Framework, including those that are not required by Alberta (i.e. Non-Treaty groups listed in Table 2 of the Initial Project Description).

Clarity on proposed reclamation and remediation plans including how surface facilities, particularly the brine pond, and the caverns will be decommissioned, including how the structural integrity of the caverns will be maintained and monitored after decommissioning.
Clarity on proposed follow-up and monitoring plans.
<b>Human Health and Well-Being</b>
Clarity on the locations of all potential human receptors in the local and regional study area, including residences and sensitive receptors, the distance of these receptors from key Project components and activities, and potential effects to human health at these receptor locations from changes to air quality, water quality, noise levels, and visual disruptions.
Potential effects to human health due to the release of diesel particulate matter from diesel-fueled equipment during construction, including potential carcinogenic and non-carcinogenic effects, and means to mitigate and monitor effects.
<b>Indigenous and Stakeholder Consultation and Engagement</b>
Clarity on the long-term communication plan to inform Indigenous peoples of Project updates, including safety, decommissioning, reclamation, and abandonment activities.
Request for funding and capacity building for Indigenous groups to support adequate consultation and engagement activities and to support traditional land use studies to identify potential effects of the Project, including potential impacts to Indigenous rights.
Need for engagement and consultation with Indigenous groups on Environmental Protection Plans, including those related to surface water and wetlands.
Need for meaningful consultation and engagement with Indigenous communities, in accordance with any consultation agreements and/or protocols, throughout the regulatory process and during the post-decision phase, including site visits, identification of both positive and negative impacts of the Project, and measures to address concerns.
Approach to working with Indigenous peoples with the principle of free, prior, and informed consent (United Nations Declaration on the Rights of Indigenous Peoples).
<b>Indigenous Peoples' Current Use of Lands and Resources for Traditional Purposes</b>
Potential effects of the Project and cumulative effects to the current use of lands and resources for traditional purposes by Indigenous peoples and the practice of Indigenous rights due to sensory disturbance and avoidance of traditional use areas or resources due to real or perceived contamination and health risks, or through reduced availability.
Potential effects of the Project and cumulative effects to the traditional lands, traditional land use, rights, culture (i.e. spiritual practices; knowledge, cultural, and language transmission; cultural identity; and traditional ways of life), and experience on the landscape of Indigenous peoples whose traditional territory overlaps with the Project area, including the use of lands, waters, and vegetation, wildlife, aquatic, and other resources of importance (e.g. duck eggs) for subsistence, medicinal, spiritual, economic, commercial, recreational, and cultural purposes, and means to mitigate and monitor effects.
<b>Indigenous Peoples' Health and Well-being</b>
Potential effects to the health of Indigenous peoples through consumption or use of drinking water, country foods, and medicinal plants exposed to contaminants from the Project in water, air, or soil.
<b>Indigenous Peoples' Rights</b>
Need to consider the historical connection of Indigenous groups to the Project area in determining potential impacts to Indigenous rights, rather than the current location of reserve lands and/or band offices.

<b>Indigenous Peoples' Social and Economic Conditions</b>
Need for Indigenous cultural awareness training for all Project employees and accommodation of Indigenous cultural values for Indigenous employees.
Potential effects to traditional practices and culture of any Indigenous employees of the Project due to participation in the local economy versus traditional economy, including consideration of cumulative effects.
<b>Indigenous Peoples' Spiritual, Physical, and Cultural Heritage</b>
Potential effects to Métis culture due to effects to water resources and lands important for ceremonial purposes.
Clarity on approach to ground-truthing and on-site monitoring before and during construction to verify the location of sacred sites and objects of importance to Indigenous peoples
Need for notification of Indigenous groups should any historical resources of importance to Indigenous peoples be identified or discovered, and the need to preserve these resources and return them to Indigenous communities.
Potential effects to physical and cultural heritage and structures, sites, or things of historical, archaeological, and paleontological significance to Indigenous peoples due to surface disturbance and excavation, including burial and sacred sites, trails, and travel routes, such as the North Saskatchewan River and North Saskatchewan River Valley (an important current and historical travel route for Indigenous peoples), and means to mitigate and monitor effects.
Potential effects to an historic campsite and canoe-making site located to the west of the Project area that is significant to Indigenous peoples.
<b>Migratory Birds and their Habitat</b>
Clarity on measures to monitor and adaptively respond to potential effects to migratory birds throughout the Project life. This includes effects from contact with the brine pond or potential spills, collisions with infrastructure or vehicles, and sensory disturbance.
<b>Species at Risk, Terrestrial Wildlife, and their Habitat</b>
Clarity on measures to mitigate, monitor, and adaptively respond to potential effects to wildlife, species at risk, and their habitat throughout the Project life. This includes effects from contact with the brine pond or potential spills, habitat removal, and sensory disturbance.
<b>Vulnerable Population Groups (GBA+)</b>
Clarity on how gender diversity, age (e.g. youth versus elders), and circumstances specific to Indigenous women and girls were considered in the assessment of potential Project effects to Indigenous peoples.
Clarity on consultation and engagement processes, including within the local community, that will support the identification of different needs and ensure transparency and inclusivity, including barriers to participation in consultation for local under-represented groups.
<b>Water – Groundwater and Surface Water</b>
Potential effects to water quality and fish and fish habitat, including for Astotin Creek and the North Saskatchewan River, from activities associated with construction and operation of pipelines, including horizontal directional drilling below wetlands and watercourses; use of machinery near watercourses; disturbance of streambanks and wetlands; and potential frac-out.
Potential effects to water quantity due to water withdrawals from the North Saskatchewan River for cavern washing, including consideration of cumulative effects, and means to mitigate and monitor effects.

Clarity on the location of local and regional drinking water sources and water treatment facilities, including their proximity to the Project site.
Potential effects to drinking water (i.e. surface and groundwater sources), water used for recreational purposes, and water treatment facilities, including consideration of cumulative effects, from spills of fuels, hydrocarbons, chemicals, and waste products, and leaching of potentially toxic substances from the brine pond and salt caverns, and means to mitigate and monitor effects.
Clarity on proposed management plans to ensure that the brine pond, deep well injection, and storm water runoff do not impact surface water quality.
<b>Wetlands</b>
Clarity on the hydrological connectivity of wetland (W3) with Astotin Creek, including during major precipitation events, and potential effects to Astotin Creek should flows from wetland (W3) interact with Astotin Creek.
Potential effects of the Project and cumulative effects on wetland function, direct loss of wetlands, quality of wetland habitat, and residual effects, including consideration of socio-economic and ecological functions of wetlands and any resultant effects to migratory birds, species at risk and other wildlife, and surface water.
<b>Other</b>
Potential effects to existing caverns associated with other nearby facilities.