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GHG Emissions Estimate for Atlas Salt Great Atlantic Salt Mine, Newfoundland

INTRODUCTION

Stantec Consulting Ltd. (Stantec) was retained by Atlas Salt Inc. (Atlas Salt) to prepare a greenhouse gas (GHG) emissions inventory in relation to an environmental impact assessment (EIA) registration being prepared for a new underground salt mine, the Great Atlantic Salt Project (the Project), located near St. George's, Newfoundland. The purpose of the GHG inventory is to estimate the GHG emissions expected from the Project's construction and operation activities. This report summarizes the results of the GHG emissions estimate completed for the Project.

The methodology used for the Atlas Salt GHG emissions inventory follows the requirements and recommendations of the Newfoundland and Labrador (NL) Department of Environment and Climate Change in place for reporting under the NL *Management of Greenhouse Gas Act* and its regulations.

The GHG emissions inventory includes both direct and indirect sources of GHG emissions during construction and operation of the Project. The direct emissions (also referred to as Scope 1 emissions) include GHGs from direct sources onsite, such as diesel fuel combustion. The indirect emissions (also referred to as Scope 2 emissions) include GHGs from energy use onsite that is generated by a third-party offsite, such as purchased electricity.

The Project is also required as part of the EIA registration to quantify GHG emissions by source for activities outside the Project boundary, such as on-road, air, and marine transportation from 3rd party providers outside the Project boundary (e.g., use of marine vessels from a marine port facility to transport product to market). These are considered other indirect emissions (also referred to as Scope 3) and would not be considered towards the NL or Environment Canada and Climate Change (ECCC) reporting requirements; however, these emissions estimates were requested as part of the EIA registration requirements.

CONSTRUCTION SOURCES

For construction, Scope 1 GHG sources include diesel equipment used for development of aboveground and underground infrastructure. The underground portion of the Project would be heated by temporary propane heaters during construction. Aggregate is assumed to be sourced locally and trucked to site using diesel fueled trucks.

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Scope 2 emissions during construction would occur from electricity used by the Project. The majority of the underground infrastructure development would be done using battery electric equipment. Scope 2 emissions during construction are assumed to be less than during operation as the equipment is phased in.

Emissions from Scope 1 and Scope 2 sources were estimated where feasible based on preliminary details provided by Atlas Salt. Publicly available emission factors and good practice guidelines were used to develop the GHG emissions inventory.

The shipping of supplies and major equipment during construction would result in some Scope 3 GHG emissions; however, sufficient information is not currently available to estimate these emissions. It is expected that these emissions would be less than Scope 3 shipping emissions estimated for annual GHG emissions from product shipping during operation.

OPERATION SOURCES

For operation, GHG emissions from the mine are primarily Scope 2 for mine equipment (i.e., electricity use) as most of the mining equipment will be battery electric. Regarding Scope 1 emissions during operation, only two pieces of mining equipment will be diesel fueled, a high back scaler and a skid steer loader. GHG emissions from these diesel equipment and Scope 2 GHG emissions have been estimated. The estimated Scope 2 emissions are based on the current emissions intensity for electricity generation in Newfoundland, which is relatively low compared to many Canadian jurisdictions and is expected to decrease over time.

Scope 3 indirect GHG emissions during operation would result mainly from shipping product as well as a small amount from shipping reagent to site. Atlas Salt expects to ship product to Québec and the eastern United States, as well as some local Newfoundland use. Based on the provided breakdown of product sale locations, Stantec estimated Scope 3 emissions for the marine shipments. Scope 3 emissions for local product delivery in NL were not estimated as they are not expected to be substantive in comparison to marine shipments and would be similar to emissions from trucking salt around the province currently.

SUMMARY OF RESULTS

Table 2 provides a summary of GHG emissions estimates for construction and operation.

Table 1 Summary of GHG Emissions for Atlas Salt

Phase	Activity	GHG Emissions (t CO ₂ e)			
		Scope 1 (Direct)	Scope 2 (Indirect)	Scope 3 (Other Indirect)	Total Scope 1 + Scope 2
Construction (Annual)	Site Preparation	282	-	-	282
Construction (Annual)	Construction Underground Propane*	4,030	-	-	4,393
Construction (Annual)	Transportation of Aggregate to Project Site	63	-	-	63
Construction (Annual)	Electricity	-	1,791	-	1,791
Total Construction (Annual)		4,375	1,791	-	6,166
Operation (Annual)	Electricity	-	2,293	-	2,293
Operation (Annual)	Equipment - Diesel Fuel	79	-	-	79
Operation (Annual)	Marine Transportation of Reagent	-	-	8	-
Operation (Annual)	Marine Transportation of Product	-	-	113,572	-
Total Operation (Annual)		79	2,293	113,580	2,373

* Propane will be used for the fan heaters only during the first year of construction, over a period of approximately 192 days

Total Scope 1 emissions during construction are estimated to be 4,375 tonnes CO₂e per year. This estimate of annual emissions is considered conservative as propane use in the underground development is only planned for year 1 of construction. Total Scope 2 emissions during construction are estimated to be 1,791 tonnes CO₂e per year. Total Scope 3 emissions from construction were not estimated; however, based on the requirements for shipping during construction, it is expected that Scope 3 emissions during construction would be less than those estimated annually for operation. Construction is planned to be completed over four years.

Total Scope 1 emissions during operation are estimated to be 79 tonnes CO₂e per year. Total Scope 2 emissions during operation are estimated to be 2,293 CO₂e per year.

Total Scope 3 emissions from operation were estimated to be 113,580 tonnes CO₂e per year. Scope 3 emissions are indirect third-party emissions that would be 'owned' by other entities.

With Newfoundland and Labrador's exceptionally low GHG intensity electricity of just 17 g CO₂e/kWh, compared to the Canadian average of 110 g CO₂e/kWh combined with integrating state-of-the-art battery

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electric technologies to drastically reduce diesel consumption compared to traditional mining methods, we estimate that their operations will remain well below the GHG emission thresholds set by both provincial and federal guidelines, aligning with the best in the industry.

CLOSURE

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