

**TransAlta Corporation
Keephills Unit 1 Repowering Project
Proceeding 30511
Application 30511-A001**

**Alberta Utilities Commission Information Request Round 1 to
Lac Ste. Anne Métis Community Association (LSAMCA)**

Pursuant to Alberta Utilities Commission (AUC) Rule 001: Rules of Practice (Rule 001), where generative artificial intelligence (generative AI) has been used to prepare documentary evidence, including responses to information requests, such use must be clearly disclosed. Pursuant to Section 20.3 of Rule 001, LSAMCA declares that LSAMCA used generative AI to streamline the preparation of responses to information requests, including identification of relevant information in the proceeding record and improving drafting readability. All content generated was subject to verification and validation by LSAMCA, its consultants and legal counsel to confirm the accuracy of the information prior to any submission to the AUC.

LSAMCA-AUC-2026JUNE08-001

Reference:

- (i) **Exhibit 30511-X0061, Appendix A [Report of Dr. Amir Hakami and Dr. Burak Oztaner], PDF page 14**

Issue: **Cumulative greenhouse gas contributions**

Quotes: “At that level of CO2 [carbon dioxide] emission, the Project (only the proposed repowered unit) would constitute more than 1% of Alberta’s GHG [greenhouse gas] emissions and together with the existing units at Keephills would account for nearly 2% of Alberta’s emissions.”

Request:

- (a) Please provide more details on the calculations used to quantify the project’s contributions to cumulative greenhouse gas emissions in Alberta. Include a formula with the specific numbers used in these calculations.
- (b) Provide all references for these calculations, including the source used for calculating Alberta’s current total greenhouse gas emissions per year.

Response:

- (a) The calculations of the Project’s contribution to cumulative greenhouse gas emissions in Alberta are based on emissions from similar power plants in the United States. The emission values in Table 1 of Exhibit 30511-X0061 (PDF page 15) represent the 2020 emissions values for power plants with similar generation as the nominal capacity of the proposed Project (829 MW) from

the USEPA's National Emission Inventory (NEI) database and the Emission and Generation Resource Integrated Database (eGRID) (USEPA, 2026b and 2026c). Drs. Hakami and Oztaner note that the emission values in Table 1 are measured values, not estimates, as plants in the US are subject to Continuous Emission Monitoring (CEM).

An updated Table 1 is included below with the addition of calculated thermal efficiencies for each plant.

Table 1 (updated): CO₂ emissions from U.S. plants similar to the Project for the year 2020.

Facility ID	Facility Name	Generation (MWh)	CO ₂ emissions (t/yr)	Estimated thermal efficiency
55298	Fairless Energy Center	7,847,977	3,227,571	0.44
7873	Bayside Power Station	7,573,447	3,196,641	0.43
60589	CPV Fairview, LLC	7,396,747	2,769,720	0.48
55464	Deer Park Energy Center	7,385,212	2,645,038	0.50
1378	Paradise	7,365,156	3,316,502	0.40
55481	Mesquite Generating Station	7,276,336	3,128,883	0.42
55131	Kendall Energy Facility	7,271,182	3,354,899	0.39
55297	New Covert Generating Project	7,200,741	3,076,431	0.42
55097	Lamar Power Plant	7,022,063	2,952,070	0.43

Drs. Hakami and Oztaner used the estimate of thermal efficiency to calculate the expected CO₂ emissions of the Project.

The calculation of thermal efficiency is based on an assumption of the CO₂ emissions of natural gas, which is a fairly established quantity between 50 – 55 kg-CO₂/GJ (USEPA, 2024; USEPA, 2026a; IPCC, 2006, with corresponding unit conversions). Using the lower emission factor for a conservative estimate (50 kg-CO₂/GJ), Drs. Hakami and Oztaner back-calculated the energy input to the plants in Table 1, and therefore the thermal efficiency (i.e., energy output / energy input) of the plants.

An example calculation for the Fairless Energy Center is as follows:

Energy Input = 3,227,571 ton-CO₂/yr × GJ/50 kg-CO₂ × 1000 kg/ton = 64,551,420 GJ

Energy Output = 7,847,977 MWh × 3.6 GJ/MWh = 28,252,717 GJ

Thermal efficiency = Energy Out /Energy In = 28,252,717 / 64,551,420 = 0.438

Drs. Hakami and Oztaner used the average thermal efficiency of 0.434 from Table 1 and applied it to an estimate for the proposed Project:

yearly Project energy output = 829 MW × 365 day/yr × 24 hr/day = 7,262,040 MWh

yearly Project energy input = 7,262,040 MWh-out × MWh-in/0.434 MWh-out = 16,732,811 MWh

yearly Project CO₂ emissions = 16,732,811 MWh × 3.6 GJ/MWh × 50 kg-CO₂/GJ × ton/1000kg = 3,011,906 ton-CO₂/yr

Alberta's GHG emissions for 2023 (the most recent year available) were 263 Mton-CO₂-eq (ECCC, 2025).

Keeyik Hills proposed Project emissions (estimated): 3.0 Mton-CO₂-eq

Keeyik Hills existing emissions (reported): 2.7 Mton-CO₂-eq

Keeyik Hills total emissions with the proposed Project: 5.7 Mton-CO₂-eq

Share of the Alberta's emissions (proposed Project) = $3.0/263 \times 100 = 1.1\%$

Share of the Alberta's emissions (proposed Project + existing) = $5.7/263 \times 100 = 2.2\%$

- (b) The references for the calculations in (a) are included below. Alberta's GHG emissions are reported as part of Canada's National Inventory Document (ECCC, 2025) in Tables A11-18 and A11-19 at 263 million tons-CO₂-eq.

AESO (2018) AESO Cost of New Entry Analysis, prepared for Alberta Electricity Systems Operator, online 2021,
<https://www.aeso.ca/assets/Uploads/CONE-Study-2018-09-04.pdf>, accessed June 15, 2026.

Canadian Council of Ministers of Environment (2025) Canadian Ambient Air Quality Standards Handbook, PN 1645 ISBN 978-1-77202-092-2 PDF, also available at <https://ccme.ca/en/res/caaqshandbook.pdf>.

Capital Power (2020) Repowering Genesee 1 and Genesee 2,
<https://www.capitalpower.com/wp-content/uploads/2020/09/Project-Specific-Information-Package-Genesee-Units-1-and-2-Repowering-.pdf>, accessed June 15, 2026.

ECCC (2017) Guidelines for the Reduction of Nitrogen Oxide Emissions from Natural Gas-fuelled Stationary Combustion Turbines, Environment and Climate Change Canada.

ECCC (2025) Greenhouse Gas Sources and Sinks in Canada.,
https://www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions/inventory.html?utm_campaign=not-applicable&utm_medium=vanity-url&utm_source=canada-ca_ghg-inventory

ECCC (2026), National Pollutant Release Inventory, Greenhouse Gas Reporting Program, Keeyik Hills Thermal Electric Power Generating Plant,
<https://climate-change.canada.ca/facility-emissions/GHGRP-G10162-2024.html>, accessed June 15, 2026.

EIA (2026) Heat Content of Natural Gas Consumed, U.S. Energy Information Authority,
https://www.eia.gov/dnav/ng/ng_cons_heat_a_EPG0_VGTH_btucf_a.htm,

accessed June 15, 2026.

IPCC (2006) 2006 IPCC Guideline for National Greenhouse Gas Inventories, Volume 2, Energy.

USEPA (2024) Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2022. U.S. Environmental Protection Agency, EPA 430-R-24-004, <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2022>.

USEPA (2026a) AP-42, Compilation of Air Pollutant Emissions Factors from Stationary Sources. WebFire interface, <https://cfpub.epa.gov/webfire/SearchEmissionFactor/searchpage.cfm>, accessed June 15, 2026.

USEPA (2026b) Emissions & Generation Resource Integrated Database (eGRID) database (year 2020), <https://www.epa.gov/egrid/detailed-data>, accessed May 26, 2026.

USEPA (2026c) National Emission Inventory, Online 2020 NEI Emission Retrieval Tool, <https://awsedap.epa.gov/public/single/>, accessed May 26, 2026.

LSAMCA-AUC-2026JUNE08-002

Reference:

- (i) **Exhibit 30511-X0060, REDACTED Keephills Proceeding 30511 - LSAMCA Written Evidence, PDF page 6**

Issue: Background on LSAMCA

Quotes: “LSAMCA [Lac Ste. Anne Métis Community Association] has several hundred members who are Métis peoples within the meaning of the *Constitution Act*, 1982.”

Request:

- (a) Please provide the current number of members of LSAMCA. The Commission understands that membership population changes over time. LSAMCA can provide the membership statistic time frame that they feel is most relevant (such as September 2022 when the Government of Alberta formally recognized that LSAMCA had been successful with its credible assertion application).
- (b) How many LSAMCA members exercise their rights as provided in Section 35 of the *Constitution Act*, 1982, in the 10-kilometre study area as defined in the traditional land use study and report by Dermot O’Connor?
- (c) How many LSAMCA members exercise these rights within the project footprint?

Response:

- (a) LSAMCA currently has several hundred members who are Métis peoples within the meaning of section 35 of the *Constitution Act*, 1982. The precise number of LSAMCA members is not static and changes based on births, deaths and the consideration of new membership applications.
- (b) Based on previously mapped Traditional Land Use data, approximately 50 LSAMCA members exercise their rights in the 10-kilometre study area. However, not all LSAMCA members have been interviewed with respect to their Traditional Land Use activities and the existing data should not be viewed as comprehensive. Further, LSAMCA members who exercise harvesting rights are often not only harvesting for themselves but also for family members.
- (c) The Project is located on private land owned by TransAlta within the fence line of the existing Keephills power plant. LSAMCA members are not able to exercise their Métis Aboriginal rights within the existing Keephills power plant fence line without TransAlta’s permission. LSAMCA members’ Métis

Aboriginal rights are not site-specific, and the potential adverse impacts of the Project to air and water quality, including the perception of adverse impacts among LSAMCA members, impact the exercise of rights in the area around the Project.

LSAMCA-AUC-2026JUNE08-003

Reference:

- (i) **Exhibit 30511-X0060, REDACTED Keephills Proceeding 30511 - LSAMCA Written Evidence, PDF page 7;**
- (ii) **Exhibit 30511-X0074-C, Appendix D - Traditional Land Use Report. Public Summary, PDF page 7;**
- (iii) **Exhibit 30511-X0035, LT AUC - TransAlta Submissions on LSAMCA Standing 2026330, PDF page 3**

Issue: **Métis harvesting - current use**

Quotes: Exhibit 30511-X0060, PDF page 7:

“Keephills and the proposed Project are located approximately 5 kilometres from Wabamun Lake and approximately 7 kilometres from the North Saskatchewan River. The Lac Ste. Anne Métis have occupied the shores of Wabamun Lake for generations and exercise Métis Harvesting Rights in this location. Generations of Lac Ste. Anne Métis have relied on Wabamun Lake as a source of water and as habitat for fish. At present, LSAMCA members continue to gather food and medicinal plants around and along the shores of Wabamun Lake. LSAMCA members continue to fish in Wabamun Lake for food, although fishing in Wabamun Lake has been negatively impacted by industrial coal mining, power generating activities, agricultural runoff, recreational boating and water use, domestic and municipal sewage runoff, and industrial accidents. Ensuring that Wabamun Lake and its shoreline remain accessible and viable in its natural state to maintain opportunities for LSAMCA Métis harvesting is one of LSAMCA’s priorities.” (footnotes omitted)

Exhibit 30511-X0035, PDF page 3:

“TransAlta [TransAlta Corporation] is already authorized to withdraw and divert additional quantities of water up to its licence limits for industrial cooling purposes. These limits have been in place since 1979, and do not expire. TransAlta is not seeking any relief from the Commission [Alberta Utilities Commission] or the Crown in respect of water diversion, and no decision of the Commission is necessary for TransAlta to make use of its existing water licence volumes.”

Preamble: The LSAMCA’s Current Use of Land & Resources report (also called the Traditional Land Use Report) identified a number of points that intersect with the study area, which is a 10-kilometre buffer of the Keephills Power Plant and boundary extending to include the shores of Wabamun Lake.

If the response includes confidential information, LSAMCA may provide a confidential response under the Commission's confidentiality process.

Request:

- (a) Please provide more information about the point overlapping with the project footprint on the map (Exhibit 30511-X0074-C, PDF page 7).
- (b) ~~(d)~~ LSAMCA provided evidence about their member use of Wabamun Lake and expressed concern that the project will impact water quantity and quality. TransAlta has indicated that it is already authorized to withdraw and divert water, and that these limits have been in place since 1979. Please elaborate on how this project will result in a new or additional impact on LSAMCA traditional land use in and around Wabamun Lake.

Response:

- (a) The yellow dot that overlaps with the Project footprint was mapped as a socioeconomic interest during a past interview with a Lac Ste. Anne Métis community member harvester who had worked at Keephills 1 in the past.
- (b) The Project will extend and continue the impacts of the previous development and operation of Keephills Unit 1 on the environment, which may include impacts to water bodies. If the Keephills plant were to be reclaimed to its pre-development state, it could reasonably be anticipated that LSAMCA community members would be able to return to the Project site for the exercise of their Métis harvesting rights. However, with the Project, the site would remain in brownfield conditions for the foreseeable future.

LSAMCA community members are also increasingly concerned about toxins and pollutants from upstream industrial development and the cumulative effects of such development on Wabamun Lake. The continued operation of Keephills Unit 1, including water diversion and air emissions, would contribute to the cumulative effects on Wabamun Lake and the surrounding environment. Project-related emissions could result in the deposition of chemicals such as polycyclic aromatic hydrocarbons in Wabamun Lake, contributing to conditions that would delay the recovery of the lake and reduce opportunities for LSAMCA community members to exercise their fishing rights.

LSAMCA-AUC-2026JUNE08-004

Reference:

- (i) **Exhibit 30511-X0060, REDACTED Keephills Proceeding 30511 - LSAMCA Written Evidence, PDF pages 8, 9, and 17;**
- (ii) **Exhibit 30511-X0006, Appendix E - Environmental Protection Plan, PDF page 4**

Issue: Métis harvesting - future use

Quotes: Exhibit 30511-X0060, PDF pages 8 and 9:

“If the Plant were to be reclaimed to its pre-development state, it could be reasonably anticipated that LSAMCA members would be able to return to the Project site for the exercise of their Métis Harvesting Rights. However, the Project site will remain in ”brownfield“ conditions for the foreseeable future.”

Exhibit 30511-X0060, PDF page 17:

“Project construction would reduce the possibility of local reclamation and restoration of native plant species in the footprint which are used by LSAMCA members for food and medicinal purposes;”

Exhibit 30511-X0006, PDF page 4:

“The Project will be constructed on private land owned by TransAlta within the fence line of the existing Keephills Power Plant.”

Preamble: The Commission would like to better understand LSAMCA member harvesting in the project footprint and adjacent lands.

Request:

- (a) Does LSAMCA currently have permission of the landowner, TransAlta, to use the project footprint for Métis harvesting? If so, please describe the harvesting that is conducted on the project footprint.
- (b) Has TransAlta committed to LSAMCA that the Keephills plant site will be reclaimed with native plant species that will be used by LSAMCA members for food and medicinal purposes?

Response:

- (a) Generally, LSAMCA does not have TransAlta’s permission to conduct Métis harvesting activities within the Keephills power plant footprint. LSAMCA

cannot confirm whether individual LSAMCA members have asked for and been granted permission to harvest within the Keephills power plant footprint in the past. LSAMCA members continue to exercise their Métis harvesting rights in the area surrounding the Project, but access to the specific project footprint has been restricted by TransAlta's private land ownership and the industrial development on the Keephills power plant footprint.

- (b) To LSAMCA's knowledge, TransAlta has not committed to reclaiming the Keephills Power Plant site with native plant species. LSAMCA is open to collaborating with TransAlta to identify native plant species for reclamation.

LSAMCA-AUC-2026JUNE08-005

Reference:

- (i) **Exhibit 30511-X0058, Appendix F REDACTED [Report of Integral Ecology Group], PDF pages 55 to 65**

Issue: Community survey results

Quotes: N/A

Preamble: The Commission would like to better understand LSAMCA traditional land use and the community survey results.

If the response includes confidential information, LSAMCA may provide a confidential response under the Commission's confidentiality process.

Request:

- (a) Was the LSAMCA community survey conducted specifically for Proceeding 30511?
- (b) Please indicate whether the 17 survey respondents are representative of LSAMCA membership (in terms of demographic factors such as age and gender) and whether they are LSAMCA harvesters.
- (c) Please provide summary results for questions 5, 6 and 7 asked in the LSAMCA community survey.
 - (i) How many survey respondents indicated that they are not able to find and harvest enough animals in a year to meet their own and/or their family's needs?
 - (ii) How many survey respondents indicated that they are not able to find and gather enough other food (e.g., berries and medicinal plants) in a year to meet their own and/or their family's needs?
 - (iii) How many survey respondents indicated that they are harvesting in the project area?
 - (iv) How many survey respondents indicated that they are not willing to hunt, trap and harvest plants or medicine within two kilometres of industrial facilities?

Response:

- (a) The LSAMCA community survey did not reference any specific proceeding. It gathered information regarding community members' use in relation to different types of developments.
- (b) The 17 survey respondents are representative of LSAMCA membership and

they are LSAMCA harvesters.

- (c) A summary of the requested survey results follows:
 - (i) Seven respondents indicated “no” to question 5. One respondent indicated “yes” with respect to fish and “no” with respect to animals. One respondent did not respond to question 5.
 - (ii) Eight respondents indicated “no” to question 6.
 - (iii) It is not clear what project area this information request refers to. In response to question 7, ten respondents indicated they practiced harvesting activities in Parkland County, which is where the Keephills power plant is located.
 - (iv) Three respondents indicated they are not willing to hunt, trap or harvest plants or medicine within two kilometres of industrial facilities. Please note that this response is based solely on the responses to row “g. Industrial facilities” in questions 12, 13, and 14 of the survey, and does not include responses with respect to other types of development that may be characterized as industrial.

LSAMCA-AUC-2026JUNE08-006

Reference:

- (i) **Exhibit 30511-X0060, REDACTED Keephills Proceeding 30511 - LSAMCA Written Evidence, PDF page 11;**
- (ii) **Exhibit 30511-X0006, Appendix E - Environmental Protection Plan, PDF pages 10, 11 and 13**

Issue: **Environmental monitoring**

Quotes: Exhibit 30511-X0060, PDF page 11:

“LSAMCA proposes the following mitigation measures that should be included, at minimum, as part of any approval of the Project in order to minimize impacts to LSAMCA members’ Métis Aboriginal rights:

...

(d) TransAlta should be required to provide resources to have a LSAMCA **environmental monitor** on site for all construction activities in relation to the Project construction;

(e) TransAlta should be required to provide resources for LSAMCA community monitoring of the potential impacts of the Project on **Wabamun Lake**;

(f) TransAlta should be required to provide the results of all ongoing **monitoring** for the Project to LSAMCA, including air quality monitoring results” [bold font added for emphasis]

Exhibit 30511-X0006, PDF pages 10, 11 and 13:

“As construction of the Project will occur on existing Keephills brownfield disturbance, there is limited potential for adverse environmental effects. TransAlta will continue to follow the existing Keephills environmental management plans and monitoring programs (as amended), as detailed in the sections below.

...

- ABT.04.0153 Groundwater Monitoring Compliance

...

- ABT.05.0060 Keephills Cooling Pond and Ash Lagoon Dyke

Monitoring Procedure

- ABT.04.0251 LCAP - KPH Procedures Manual - Cooling Pond Monitoring

...

- COA.04.0022 Fish Monitoring Management and Reporting”

Preamble: The Commission is aware that there are regional airshed and watershed groups, such as the Wabamun Watershed Management Council and West Central Airshed Society. The Commission would like to understand the environmental monitoring that LSAMCA is requesting relative to existing regional monitoring.

Request:

- (a) Please elaborate on the monitoring LSAMCA is requesting, and how it is different from what TransAlta is proposing and what is already being undertaken in the region.
- (b) Is LSAMCA aware of current regional airshed and watershed monitoring, especially as it relates to Wabamun Lake and the North Saskatchewan River?
- (c) Is LSAMCA a member of any regional group that is working on regional airshed and watershed monitoring and concerns?

Response:

- (a) LSAMCA is requesting that the Project be monitored from an Indigenous Knowledge perspective, which is not being proposed by TransAlta or regional monitoring groups, to LSAMCA’s knowledge. LSAMCA is requesting that LSAMCA environmental monitors be involved in monitoring construction activities in relation to the Project construction and that resources are provided for LSAMCA community monitoring of the impacts of the Project on Wabamun Lake. This is different from TransAlta’s proposed monitoring because TransAlta’s Environmental Protection Plan relies on TransAlta’s own internal procedures, its Project Manager, Construction Manager and an Environmental Consultant retained by TransAlta. LSAMCA environmental monitors would ensure independent Indigenous oversight of construction activities that may impact LSAMCA members’ Métis Aboriginal rights. LSAMCA environmental monitors would work alongside TransAlta staff and contractors to verify that TransAlta is protecting the environment and mitigating impacts to LSAMCA’s Métis Aboriginal rights.

LSAMCA community monitoring of the potential impacts of the Project on Wabamun Lake would also be distinct from TransAlta’s monitoring programs, which do not appear to include any focus on impacts to LSAMCA’s traditional use of Wabamun Lake.

LSAMCA is also requesting that TransAlta provide the results of all ongoing monitoring reports for the Project to LSAMCA, including air quality monitoring results, as these reports would not otherwise be shared with LSAMCA.

- (b) LSAMCA is aware of regional airshed and watershed monitoring groups, such as the Heartland Air Monitoring Partnership, the Alberta Biodiversity Monitoring Institute, and the Wabamun Watershed Management Council. However, LSAMCA's monitoring requests are specific to the Project's potential impacts on LSAMCA members' Métis Harvesting Rights, which are not necessarily addressed by regional monitoring alone.
- (c) LSAMCA is not a member of any regional group that is working on regional airshed and watershed monitoring and concerns.

LSAMCA-AUC-2026JUNE08-007

Reference:

- (i) Exhibit 30511-X0076-C, Redacted, Keephills Proceeding 30511 - LSAMCA Written Evidence, PDF page 20;
- (ii) Exhibit 30511-X0075-C, Appendix F, Redacted - Report of Integral Ecology Group

Issue: Individual contributions of the project to cumulative effects

Quotes: Exhibit 30511-X0076, PDF page 20:

“The IEG [Integral Ecology Group] Report identifies that existing development footprints combined with the proposed Project cover 67% of the study area. The IEG Panel estimates that land accessibility for Lac Ste. Anne Métis hunting has declined from a fully accessible landscape during the precolonial period to 23% of the study area at present. This is due to the cumulative effects of development and avoidance of development features due to diminished safety and quality. The IEG Panel estimates that accessibility for trapping and gathering is currently 28% and 24% of the study area, respectively.”

Request:

- (a) Please quantify the project’s individual contributions to the total cumulative development impacts in the study area. For example, *‘the project accounts for [percentage] of existing development footprints, out of the total 67 per cent.’*
 - (i) Provide a brief description of the methods used to determine the above response.

Response:

- (a) Since the Project is located within the existing Keephills power plant fence line, which is already identified as development footprint, the Project will not create additional development footprint in the study area. This does not mean the addition of the Project will have no cumulative impacts. By repowering the Keephills Unit 1 facility, the Project continues the development footprint in an ecologically diminished state rather than being available for reclamation or restoration. The ongoing presence of this industrial infrastructure adds to the cumulative impacts related to the loss of accessibility, habitat, and harvesting opportunities for LSAMCA members.