NIRB Application for Screening #125769

Chesterfield Inlet Mobile Wind Resource Assessment Project

Application Type:	New
Project Type:	Scientific Research
Application Date:	2/6/2023 2:00:00 PM
Period of operation:	from 0001-01-01 to 0001-01-01
Proposed Authorization:	from 0001-01-01 to 0001-01-01
Project Proponent:	Oliver Pennock Northern Energy Capital Suite 502, 151 West Hastings, Vancouver BC V6B 1H4 Canada Phone Number:: 403-669-2541, Fax Number::

DETAILS

Non-technical project proposal description

English: Northern Energy Capital (NEC), on behalf of Kivalliq Alternative Energy (KAE), will conduct a preliminary renewable energy study in Chesterfield Inlet, Nunavut. The community relies on aging diesel generators to meet local electricity demand. The study will consider using wind energy and battery storage systems to offset the community's reliance on fossil fuels. Unlike diesel energy, wind energy is an unlimited resource that does not cause harmful air pollution and environmental damage. The project's scope is to collect wind data using a sonic detection and ranging (SODAR) device to assess the feasibility of a utility-scale wind energy project. NEC will install the SODAR equipment at the project site approximately 5km from the community of Chesterfield Inlet, where it will measure the wind speed, direction, and frequency for 12 months from Fall 2023-2024. The SODAR wind monitoring equipment will include a SODAR device measuring 0.5m x 0.5m x 3.0m tall, a 5.7m x 6.1m photo-voltaic power supply, a single propane tank, and a 3.0m x 3.0m tent enclosure to protect the equipment controls and wildlife. Overall, the SOAR technology is non-invasive, occupies a small footprint, and does not require extensive land displacement or alteration.

French: (only for the City of Iqaluit)

Inuktitut: ᐅᐊᖕᓇᖅᐸᓯᒃᑐᒥᑦ ᐆᒻᒪᖅᑯᑎᓕᕆᔨᒃᑯᑦ (NEC), ᐱᔾᔪᑎᑉᓗᒥᑦ ᑭᕙᓪᓕᕐᒥᑦ ᐊᓯᐊᒍᖕᒫᖅ ᐆᒻᒪᖅᑯᑎᓕᕆᔨᒃᑯᑦ (KAE), ᓯᕗᓂᐊᒍᑦ ᐊᑐᖅᑕᐅᒃᑲᓐᓂᕈᖕᓇᖅᑐᓂᒃ ᐆᒻᒪᖅᑯᑎᒥᒃ ᖃᐅᔨᓴᐃᓂᐊᖅᑐᑦ ᐃᒡᓗᓕᒑᕐᔪᖕᒥᑦ, ᓄᓇᕗᑦ. ᓄᓇᓕᒃ ᐊᑐᖅᑕᑦᑕᖅᑐᖅ ᓄᑕᐅᔭᖅᑖᓕᖅᑐᓂᒃ ᐅᖅᓯᐊᓗᒃᑐᖅᑐᒥᑦ ᐆᒻᒪᖅᑯᑎᓕᐅᕈᑎᓂᒃ ᐃᑯᒪᖅᑯᑎᓕᐅᕆᓂᕐᒧᑦ ᐱᔭᐅᔭᕆᐊᖃᖅᑐᓄᑦ ᓄᓇᓕᖕᒥᑦ. ᖃᐅᔨᓴᐃᓂᖅ ᐃᓱᒪᒋᔭᖃᖅᑐᖅ ᐊᓄᕆᒥᑦ ᑲᐃᕕᑦᑐᓂᒃ ᐆᒻᒪᖅᑯᑎᓕᐅᕆᓂᕐᒥᑦ ᐊᒻᒪ ᐹᑐᑖᓄᑦ ᑐᖅᑯᖅᓯᓯᒪᐃᕕᖕᓂᑦ ᐊᑐᕈᖕᓃᖅᑎᒋᐊᕐᓂᐊᕐᓗᒍ ᓄᓇᓕᒃ ᐅᖅᓯᐊᓗᒃᑐᕐᓂᕐᒥᑦ. ᐅᖅᓯᐊᓗᖕᒥᑦ ᐆᒻᒪᖅᑯᑎᓕᐅᕆᓂᖅᑎᑑᖕᒥᑦᑐᖅ, ᐊᓄᕆᒥᑦ ᑲᐃᕕᑦᑐᓂᒃ ᐆᒻᒪᖅᑯᑎᓕᐅᕆᓂᖅ ᑭᓪᓕᖃᙱᑦᑐᓂᒃ ᐱᕝᕕᐅᖃᑦᑕᕈᖕᓇᖅᑐᖅ ᐊᓂᖅᓴᖅᑐᖅᑕᑉᑎᖕᓄᑦ ᐱᑦᑕᐅᖕᒥᑦᑐᓕᐅᕆᙱᖦᖢᓂ ᐊᒻᒪ ᐊᕙᑎᒧᑦ ᓯᖁᐃᓂᖃᙱᖦᖢᓂ. ᐱᓕᕆᐊᖅ ᑲᑎᑦᑎᓂᐊᖅᑐᖅ ᐊᓄᕆᒥᑦ ᐱᔪᓂᒃ ᓈᓴᐅᑎᓂᒃ/ᑎᑎᖅᑲᓂᒃ ᐊᑐᕐᓗᑎᒃ ᖃᐅᔨᔾᔪᑎᓂᒃ ᐊᒻᒪ ᐅᖓᓯᒃᑎᒋᓂᕐᒧᑦ ᐱᔪᓂᒃ (SODAR) ᖃᐅᔨᓴᕐᓂᐊᕐᓗᑎᒃ ᐊᔪᙱᓐᓂᐊᕐᓂᖓᓄᑦ ᐆᒻᒪᖅᑯᑎᓕᐅᕆᓂᖅ ᐊᓄᕆᒥᑦ ᑲᐃᕕᑦᑐᓂᒃ. NEC-ᑯᑦ ᐃᓕᓯᓂᐊᖅᑐᑦ SODAR-ᒥᑦ ᐱᓕᕆᐊᑉ ᐃᓂᖓᓄᑦ 5 ᑭᓛᒥᑕᓪᓗᐊᓂᒃ ᐅᖓᓯᒃᑎᒋᔪᒧᑦ ᓄᓇᓕᖕᒥᑦ ᐃᒡᓗᓕᒑᕐᔪᖕᒥᑦ, ᐆᒃᑐᕋᐃᓂᐊᕐᓗᓂ ᐊᓄᕆᐅᑉ ᓇᑯᖅᑎᒋᓂᖓᓂᑦ, ᓇᒧᙵᐅᓂᖓᓂᑦ, ᐊᒻᒪ ᖃᑉᓰᖅᑕᖃᑦᑕᕐᓂᖓᓂᑦ 12 ᑕᖅᑭᓄᑦ ᐅᑭᐊᒃᓵᒥᑦ 2023-2024-ᒥᑦ. SODAR ᐊᓄᕆᒥᑦ ᖃᐅᔨᓴᐃᔾᔪᑎᒥᑦ ᐃᓚᐅᓂᐊᖅᑐᖅ SODAR-ᒧᑦ ᐊᑐᖅᑐᖅ ᐊᖏᑎᒋᔪᖅ 0.5m ᒦᑕᐃᑦ x 0.5m ᒦᑕᐃᑦ x 3.0m ᒦᑕᐃᑦ ᑕᑭᓂᖓ, 5.7m ᒦᑕᐃᑦ x 6.1m ᒦᑕᐃᑦ ᐆᒻᒪᖅᑯᑎᓕᐅᕈᑎ, ᐊᑕᐅᓯᖅ ᐳᑉᓚᒃ, ᐊᒻᒪ 3.0m ᒦᑕᐃᑦ x 3.0m ᒦᑕᐃᑦ ᐊᕙᓗᖓ ᒥᐊᓂᕆᓂᐊᕐᓗᒥᑦ ᐊᐅᓚᑦᑎᔾᔫᑦ ᐊᒻᒪ ᓂᕐᔪᑎᓂᑦ. ᑕᒪᐃᓐᓄᑦ, SODAR ᓯᓇᒥᐊᒥᒃ ᐊᒃᑐᖅᓯᓂᖃᙱᑦᑐᖅ, ᒥᑭᔫᔪᒥᑦ ᐃᓂᒥᑦ ᐊᑐᖅᓱᓂ, ᐊᒻᒪ ᓄᓇᒥᑦ ᐊᓯᐊᓄᐊᖅᓯᓂᖃᓗᐊᕋᔭᙱᑦᑐᖅ ᐅᕝᕙᓘᓐᓃᑦ ᐊᓯᐊᙳᖅᓯᓗᓂ.

Personnel

Personnel on site: 4

Days on site: 4

Total Person days: 16

Operations Phase: from 2023-08-22 to 2023-08-26

Operations Phase: from 2023-08-26 to 2024-08-26

Post-Closure Phase: from to

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
Project Site (SoDAR Location)	Equipment installation	Commissioners	The Project will operate on untitled municipal land in Chesterfield Inlet that is administered by the Commissioner.	non-applicable	Project site is approximately 5km from Chesterfield Inlet and 4km from the airport.

Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Chesterfield Inlet	Casey Malliki, Brian Zawadski	Aulajuq Limited	2023-01-29

Authorizations

Indicate the areas in which the project is located:

Kivalliq

Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Nunavut Research Institute	The proponent acknowledges the Nunavut Research Institute should they need to validate the Wind Resource Assessment.	Not Yet Applied		
Government of Nunavut, Community Government & Services	The proponent submitted a Land Use Permit application and is awaiting approval from the Hamlet of Chesterfield Inlet and a determination from NIRB.	Applied, Decision Pending		
Government of Nunavut, Community Government & Services	The proponent in the process of submitting a Development Permit application and is awaiting a determination from NIRB.	Not Yet Applied		

Project transportation types

Transportation Type	Proposed Use	Length of Use
Air	A single flight for up to three staff to install the SoDAR device in Fall 2023	
Land	Transport from airport to site by means of pick-up truck or snowmobile.	

Project accomodation types

Other,

Material Use

Equipment to be used (including drills, pumps, aircraft, vehicles, etc)

Equipment Type	Quantity	Size - Dimensions	Proposed Use
Sonic Detection and Ranging (SODAR)	1	0.5m x 0.5m x 3.0m	Using sound waves, this equipment will monitor wind activity including wind speed, wind direction, and wind frequency.

Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Propane	fuel	6	100	600	Lbs	The propane is used to regulate the SODAR's temperature for the prevention of ice formation. Additionally, the propane is also used to power a generator to supplement the SODAR's 15W power requirement. Necessary steps are being made to reduce the quantity of fuel containers stored on site.

Water Consumption

Daily amount (m3)	Proposed water retrieval methods	Proposed water retrieval location
0	No water is required for this study.	No water is required for this study.

Waste

Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional treatment procedures
Equipment installation	Non-Combustible wastes	0 lbs	Landfill, recycled, reused, repurposed	Proponent does not anticipate any waste during installation of SODAR equipment. The crating the equipment arrives in will be reused to move the equipment after the 12-month study. The emptied propane tanks after use will be stored at Aulajuq Limited and refilled and reused. Should there be any waste, NEC will come prepared with a plan in place to dispose of the waste in an effective and appropriate matter that complies with local regulatory guidelines.

Environmental Impacts:

Waste, impact mitigation, and environmental impacts from SODAR feasibility projects are typically very low and limited to land use displacement and construction if necessary. Nevertheless, the project team has endeavoured to identify and prevent any unacceptable environmental impacts or impacts on traditional land use. Potential risks identified that could be caused by the project are listed below, and due to character limits, the planned mitigation strategies will be stored in the documents section. Risks include disturbance of land resulting in habitat destruction, impact to caribou migratory corridors and habitat range, leak or spillage of fuel resulting in ground contamination, interference with traditional land use, presence of archaeological sites or artifacts, and unforeseen generation of construction waste. A comprehensive outline for mitigation measures is attached in Project Documents.

Additional Information

SECTION A1: Project Info

SECTION A2: Allweather Road

SECTION A3: Winter Road

SECTION B1: Project Info

SECTION B2: Exploration Activity

SECTION B3: Geosciences

SECTION B4: Drilling

SECTION B5: Stripping

SECTION B6: Underground Activity

SECTION B7: Waste Rock

SECTION B8: Stockpiles

SECTION B9: Mine Development

SECTION B10: Geology

SECTION B11: Mine

SECTION B12: Mill

SECTION C1: Pits

SECTION D1: Facility

SECTION D2: Facility Construction

SECTION D3: Facility Operation

SECTION D4: Vessel Use

SECTION E1: Offshore Survey

SECTION E2: Nearshore Survey

SECTION E3: Vessel Use

SECTION F1: Site Cleanup

SECTION G1: Well Authorization

SECTION G2: Onland Exploration

SECTION G3: Offshore Exploration

SECTION G4: Rig

SECTION H1: Vessel Use

SECTION H2: Disposal At Sea

SECTION I1: Municipal Development

Description of Existing Environment: Physical Environment

The ground surface is compromised mostly of jagged rock. We intend to place the SODAR device on the most level surface within the permitted zone. The proponent consulted CGS Land Administration for site history and proximity to sensitive habitats, proponent reviewed animal migration and rutting paths as part of a desktop study and devised a plan of action in case of emergency. This is outlined in the Predicted Environmental impacts document found in Project Documents.

Description of Existing Environment: Biological Environment

Please review Predicted environmental impacts of undertaking and proposed mitigation measures located in Project Documents.

Description of Existing Environment: Socio-economic Environment

The proposed site is in the outer boundary of the municipality. The equipment has a small footprint and isn't expected to disrupt activity in the area. NEC has contracted Aulajuq Limited to perform routine check-ups on the equipment to check for interference. The equipment is also fitted with surveillance equipment to identify human and animal activity in proximity to equipment.

Miscellaneous Project Information

Identification of Impacts and Proposed Mitigation Measures

Please review Predicted environmental impacts of undertaking and proposed mitigation measures located in Project Documents.

Cumulative Effects

Please review Predicted environmental impacts of undertaking and proposed mitigation measures located in Project Documents.

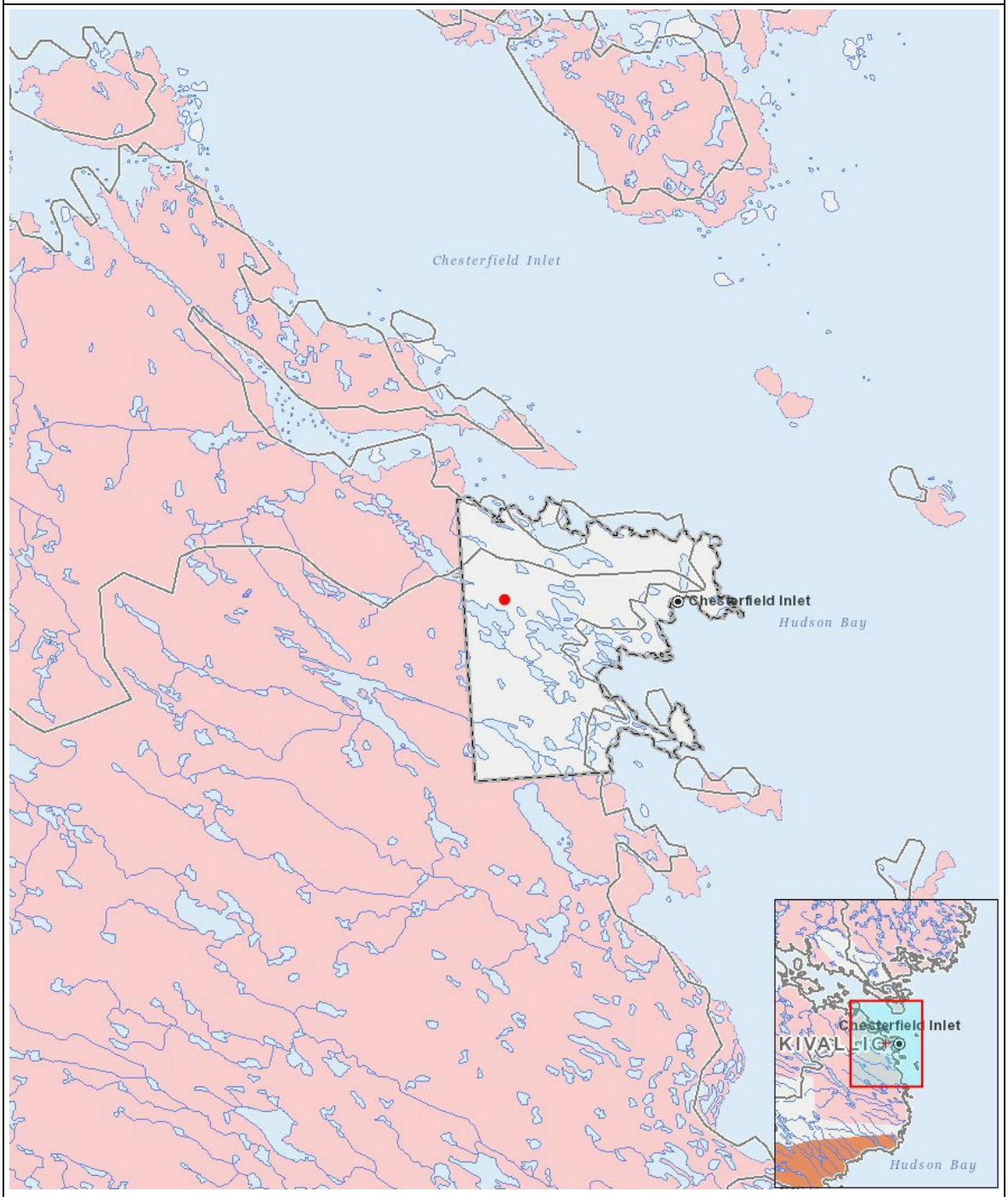
Impacts

Identification of Environmental Impacts

	PHYSICAL	Designated environmental areas	Ground stability	Permafrost	Hydrology / Limnology	Water quality	Climate conditions	Eskers and other unique or fragile landscapes	Surface and bedrock geology	Sediment and soil quality	Tidal processes and bathymetry	Air quality	Noise levels	BIOLOGICAL	Vegetation	Wildlife, including habitat and migration patterns	Birds, including habitat and migration patterns	Aquatic species, incl. habitat and migration/spawning	Wildlife protected areas	SOCIO-ECONOMIC	Archaeological and cultural historic sites	Employment	Community wellness	Community infrastructure	Human health
Construction																									
Equipment installation		-	-	-	-	-	P	-	U	U	-	P	M		U	M	U	-	U		U	P	P	P	P
Operation																									
Equipment installation		-	-	-	-	-	P	-	U	U	-	P	M		U	M	U	-	U		U	P	P	P	P
Decommissioning																									
-		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

(P = Positive, N = Negative and non-mitigatable, M = Negative and mitigatable, U = Unknown)

Project Location



List of Project Geometries

1	polygon	Project Boundaries
2	point	Project Site (SoDAR Location)