



# DÉTAILS

## Description non technique de la proposition de projet

Anglais: Overview: Polar Knowledge Canada, in collaboration with Canmet Energy Ottawa/Natural Resources Canada, is proposing to install a solar resource monitoring station along Waterlake Rd, in northern Cambridge Bay, NU. Purpose: The purpose of the station is to track and compile meteorological and solar resource data. Very few solar resource ground station datasets exist for Canada's Arctic, so the data from this station can provide valuable insights on solar radiation variability, and can be used to improve large weather models over polar regions. The lessons learned from this station can be used to improve best practices for Arctic solar resource monitoring, and to support the integration of renewable energy in Arctic communities. Activities: A sun tracker and various meteorological sensors will be deployed along Waterlake Rd, measuring solar radiation, albedo, wind speed and direction, temperature, humidity, air pressure, snow depth, and precipitation. The system will consist of two enclosures on tripods, and a sun tracker and precipitation gauge mounted on two platforms. The equipment will be grid-powered, with Starlink connectivity. There will be two staff onsite for 2 days in July 2026 to install the equipment, and the site will be visited weekly by POLAR staff for maintenance. Timeline: The monitoring station will be deployed in July 2026, and will continue collecting data indefinitely. Results: The data and results will be published in various formats, including on a Natural Resources Canada website, conference papers, and peer reviewed articles. Impacts: The monitoring equipment is all minimally invasive. The site is within hamlet boundaries in a pre-disturbed area, so there is unlikely to be any impacts to the environment, wildlife, or people. If the project ends, the site will be fully restored to its previous condition.

Français: N/A

Inuktitut: N/A

Inuinnaqtun: Havakhautinik: Hiqinirmit Atuqtakhanik MunaqhijutikhaqIlittuqhinit: Ukiuqtaqtumi Qauhimayatuqat Kanatami, havaqatigiplugit Canmet Energy Ottawa/Nunamiittutuqat Piquitit Kanatami, iliurayumayut hiqinirmit atuqtakhanik munaqhivikhamik talvani Waterlake Rd, tunun'ngani Iqaluktuuttiami, Nunavut. Pityuta: Pidjutikhaa nayurvinga naunaiyariami katitirlugulu hilaup hiqinirmilu ikayuutikkut illituriqkaidjutit. Ikitpiaqtun hiqinirmin hanaqidjutikharnik nunami nayugaingit naunairutikhangit aulayut talvani Kanatami Ukiuqtaqtuniitunik, taimaa naunairutikhangit talvannga nayugaani tunigiaqaqtun akhuurnaqtunik tautuktuuyaarutikharnik hiqinirmin aulavikhangit aallatqiinguyut, atuqtaugiaqaqtunlu ihuaqhaidjutikharnik angiyunik hilaup qanurinmangaangit ukiuqtaqtuniitunik. Ayuiqtatik haffumanga nayugaanin atuqtauyaaqtut ihuaqhiyuumigianganinakuutqiyat atuqtauyut haffumunga Ukiuqtaqtumi hiqinikkut ikayuutikkut munaridjutit, uvvalu ikayuutikhat ilauqatigiingnikkut atuffaaqtaaqut auladjutit Ukiuqtaqtumi nunallaat. Hulidjuhiit: Hiqinirmit naunaiyaidjut uvvalu aallatqiit hilap naunaiyautait iliuraqtauniaqtut uvani Waterlake Apqutaani, aktilaarlugit hiqinirmin uunarnia, albedo, anurip kayumiktilaanga humullu, uunarnia, atipkarnia, hilap aulania, aput itiniqhaa, uvvalu nipalungnia. Taamna auladjutikhaq piqarniaqtuq malrungnik avatingnik nappaqtirutingnik, hiqinirmilu naunairutikharnik nipalungnik ihivriudjutikharnik iliyauhmayut malrungnik qiyungnik tunngavikharnik. Tamayat aulapkaqtauniaqtut alruyaqtuutikkut, Starlink atadjutiqlutik. Malruk havaktiik tahamaniiniaqtuk malrungni ubluni Taaqhivalirvia 2026 iliurailutik ingilrutinik, nayugaalu pulaqtauniaqtuq havainirmi POLAR-kut havaktiinnit ihuaqhaqtauyanginni. Naunaipkutit Pivikhaqarningit: Munaridjutikkut nayugaa atuliqtauniaqtuq uvani Taaqhivalirvia 2026, aulahimaqtumik katitirilutik naunaiyautinik tavungaraaluk. Kiuviniit: Naunaiyautit uvvalu qanurinningit titiraqtauniaqtut aallatqiinik atugakhanik, ilauyut uvani Nunamiittutuqat Piquitit Kanatami qaritauyaliviani, katimarjuagutini titiqqat, uvvalu havaqatimin-ihivriuqtauyut titiraqhimayut. Hulaqutit: Amirinikkut hanalrutit tamaita mikiyumik ihuirutivaktut. Inigiyauyuq haamatkut kikliqiyaini hivuani aktuqtauhimayumi nunani, taimainingani ihuilidjutiqalimangittuq avatauyumut, uumayunut, inungnulluuniit. Havaakhaq nungutpat, nayugaa ihuaqhaqtauniaqtuq kinguani idjuhanun.

## Personnel

Personnel on site: 2

Days on site: 2

Total Person days: 4

Operations Phase: from 2026-06-23 to 2036-06-23

## Activités

Emplacement	Type d'activité	Statut des terres	Historique du site	Site à valeur archéologique ou paléontologique	Proximité des collectivités les plus proches et de toute zone protégée
Solar Resource Monitoring Station	Researching	Municipal	Within municipal boundary of Cambridge Bay	N/A	Within municipal boundary of Cambridge Bay

### Engagement de la collectivité et avantages pour la région

Collectivité	Nom	Organisme	Date de la prise de contact
Cambridge Bay	Jason Maas	Polar Knowledge Canada	2025-02-01

# Autorisations

Indiquez les zones dans lesquelles le projet est situé:

Kitikmeot

## Autorisations

Organisme de régulation	Description des autorisations	État actuel	Date de l'émission/de la demande	Date d'échéance
Institut de recherche du Nunavut	NRI Research permit	Not Yet Applied		
Nunavut Planning Commission	NPC File NO. 151050	Active		

## Project transportation types

Transportation Type	Utilisation proposée	Length of Use
Land	Site is accessible by road. Will travel by truck to install and maintain equipment.	

## Project accomodation types

Autre,

## Utilisation de matériel

Équipement à utiliser (y compris les perceuses, les pompes, les aéronefs, les véhicules, etc.)

Type d'équipement	Quantité	Taille – Dimensions	Utilisation proposée
Truck	1	19 ft L x 7 ft W x 7ft H	Site will be accessed by truck
Solys Gear Drive Suntracker	1	50x34x38 cm	Will track the sun and provide a mounting surface for two pyranometers, a pyrgeometer, and a pyrhelimeter.
CGR4 Pyrgeometer	1	110x110x70 mm	Will detect infrared radiation
CMP22 Pyranometer	3	110x110x70 mm	Will detect global horizontal irradiance, diffuse horizontal irradiance, and albedo
CHP1 Pyrheliometer	1	31.6x4x4 cm	Will detect direct normal irradiance
Tripod	2	Base: 1.5m diameter, height: 2.5m	To serve as mounting sites for two electronics enclosures, a SR50A snow depth sensor, an CMP22 pyranometer, a BaroVUE10 barometric pressure sensor, an HMP155A humidity and temperature sensor, and an RM Young wind sensor
Geonor T-200B precipitation gauge	1	1x1x1m	To measure precipitation
SR50A Snow depth sensor	1	Diameter: 7.5cm, Length: 10.1 cm	To measure snow depth
BaroVUE10 Barometric pressure sensor	1	2.2 x 9.0 x 10.2 cm	To measure barometric pressure
HMP155A Temperature and relative humidity sensor	1	35.56 x 27.31 x 13.97 cm	To measure temperature and relative humidity
RM Young alpine wind monitor	1	38x65x20cm	To measure wind speed and direction
Electrical enclosures	2	0.5x0.45x0.3m	Will house the electrical distribution equipment (CH150 charging regulator, BP42 12V battery, CR1000X-XT datalogger).
Starlink standard kit	1	Dish: 594mm x 383mm x 39.7 mm. Router: 43.4 x 298.6 x 120.4 mm	To provide internet connectivity in order to access the sensor data remotely

**Décrivez l'utilisation du carburant et des marchandises dangereuses**

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<b>Décrivez l'utilisation de carburant :</b>	<b>Type de carburant</b>	<b>Nombre de conteneurs</b>	<b>Capacité du conteneur</b>	<b>Quantité totale</b>	<b>Unités</b>	<b>Utilisation proposée</b>
none	hazardous	0	0	0	Kg	none
Gasoline	fuel	1	20	20	Gallons	The only fuel onsite will be in the gas tank of the truck used to access the site

#### **Consommation d'eau**

<b>Quantité quotidienne (m3)</b>	<b>Méthodes de récupération de l'eau proposées</b>	<b>Emplacement de récupération de l'eau proposé</b>
0		

# Déchets

## Gestion des déchets

Activités du projet	Type des déchets	Quantité prévue	Méthode d'élimination	Procédures de traitement supplémentaires
Researching	Other, Miscellaneous cardboard/plastic	1 box	Will take any cardboard/plastic waste to the landfill	n/a

### Répercussions environnementales :

The monitoring equipment is all minimally invasive. There is unlikely to be any impacts to the environment, wildlife, or people, since the site is on pre-disturbed land within municipal boundaries. The platforms will be designed to minimize contact with the ground. If the project ends, the site will be fully restored to its previous condition.

# **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 de l'environnement existant : Environnement physique**

Pre-disturbed area within boundary of Cambridge Bay

### **Description de l'environnement existant : Environnement biologique**

Rocky, pre-disturbed area. Moss, lichen, small herbaceous plants.

### **Description de l'environnement existant : Environnement socio-économique**

Within municipal limits of Cambridge Bay

### **Miscellaneous Project Information**

The intent of the project is to collect solar resource data, which will be published to a public portal. There are very few solar resource ground stations in the Arctic, so this data will provide valuable insights on solar radiation variability, and can be used to improve large weather models over polar regions. The data can also be used to support renewable energy integration in Arctic communities.

### **Identification des répercussions et mesures d'atténuation proposées**

Potential environmental impacts are very low. The monitoring equipment is non-invasive, and will be placed on the ground (no groundwork or digging required). The sensors will be collecting data on solar radiation, temperature, wind, humidity, snow depth, air pressure, and precipitation. The site will be restored to its present condition at the end of the project.

### **Répercussions cumulatives**

N/A

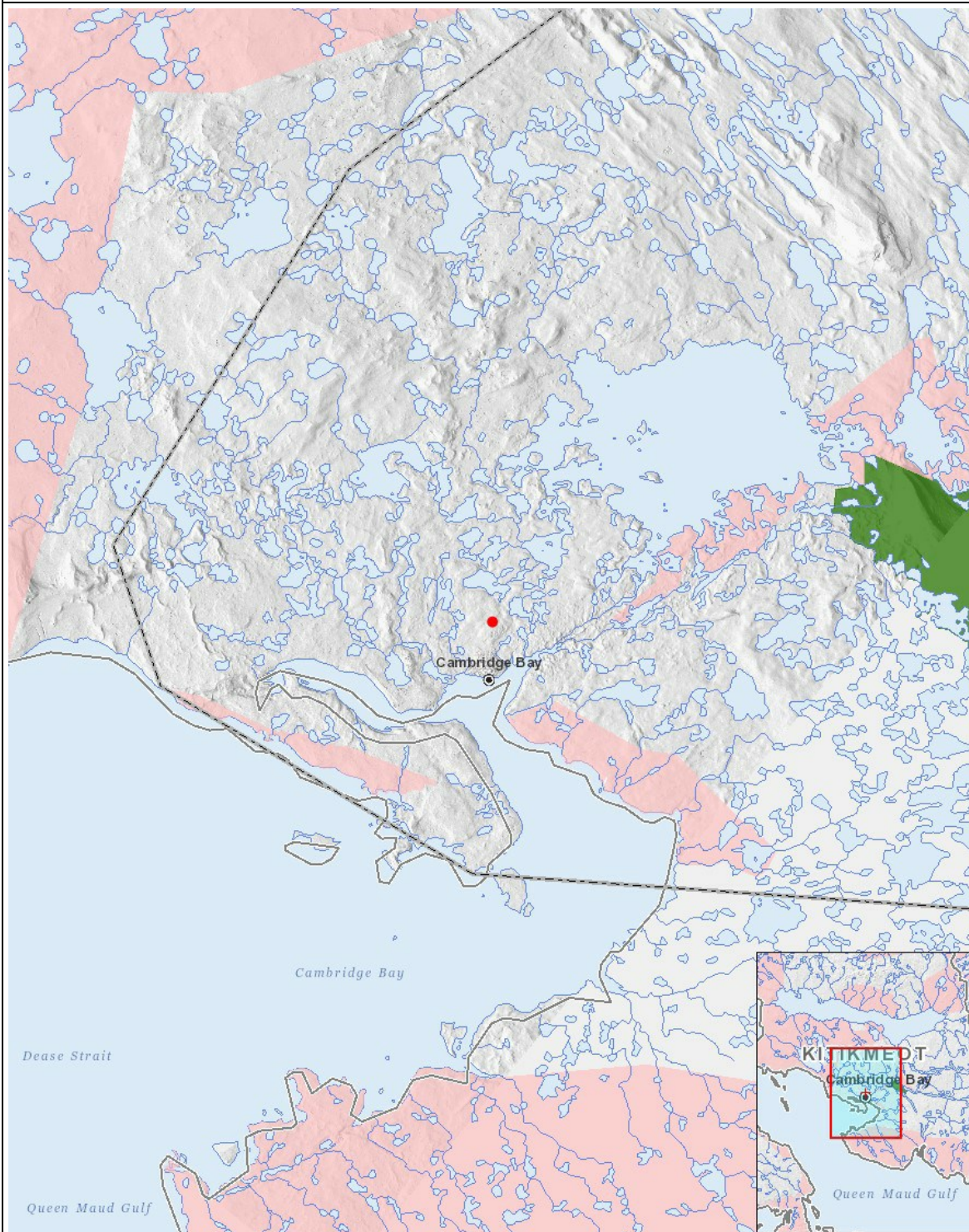
# Impacts

## Identification des répercussions environnementales

	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
<b>Construction</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Exploitation</b>																									
Researching		-	-	-	-	-	-	-	-	-	-	-	-	M	-	-	-	-	-	-	-	-	-	-	-
<b>Désaffectation</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(P = Positive, N = Négative et non gérable, M = Négative et gérable, U = Inconnue)

## Site du projet



## Liste des géométries de projet

1	point	Solar Resource Monitoring Station
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