

Yourbrook Energy Systems Ltd.

PO Box 73 Queen Charlotte BC Canada V0T 1S0

Phone 250-637-1703 www.yourbrookenergy.com

Clyde.greenough@yourbrookenergy.com



Yourbrook Energy Systems Proposed Boundary Adjustment

Kamdis Conservancy BCParks Research Permit 109679

1. Proponent information and contact details.

Yourbrook Energy Systems Ltd
Box 73
1303 Oceanview Drive
Queen Charlotte BC
V0T 1S0
Clyde Greenough COO
Clyde.greenough@yourbrookenergy.com
250-637-1703

Yourbrook Energy Systems Ltd. (YES) is a privately owned and operated Canadian firm based in Haida Gwaii, British Columbia. YES, has developed and patented a tidal technology that combines pumped-storage hydroelectricity to ensure clean, reliable, and firm power generation.

2. Type and purpose of project (e.g. wind power generation, mining, road, pipeline)

The YES project is a tidal hydro power electrical generation project.

Haida Gwaii, in particular the north grid and Masset Diesel Generating Station, has the highest use of diesel for electrical generation in the province. The north grid generates 24,000,000 Kw annually, this equates to approximately 8 million liters of diesel consumed and 24,000 tonnes of greenhouse gas.

The Kamdis Tidal Power Demonstration Project (KTPDP) power generation plant, developed from the FEED study, will be a 500 KW plant that will reduce diesel consumption by 1,800,000 liters and GHG emissions 6600 tonnes annually. The KTPDP is part of the Haida Gwaii Clean Energy Plan to remove or reduce the use of fossil fuels in electrical generation and fits with the goals of Council of the Haida Nation (CHN), local government, and the community at large.

Yourbrook's patented technology is designed to harness the abundant energy occurring over a large area of a cyclic tidal stream. The power is concentrated by means of pumps and paddles and delivered to an adjacent upland reservoir in the form of highly pressurized water. This pressurized water can then be used to generate power in conventional hydro turbines with direct pumped storage to stabilize output.

This site was chosen in conjunction with the Heritage and Natural Resource Committee (HNRC) of the CHN as an alternative to Juskatla Narrows. The short penstock route [750 meters], the height of land [82 meters elevation], adequate tidal flows on the ebb and flood of the tides, and the close proximity of power lines make this location ideal for our project.

See attached conceptual design

3. Project location.

Masset Inlet, Haida Gwaii see attached maps

The location of the proposed boundary adjustment is at the north end of The Kamdis Conservancy in Masset Inlet, Haida Gwaii.

Coordinates: 53,52,33N 132,05,24W

See attached maps

4. Project footprint (inside and outside the protected area) including all project components such as access routes.

The estimated proposed area to be removed from the conservancy is 2Ha.

The 53 project components include:

- An upper reservoir on crown land outside the conservancy with an overall footprint of 20,000m²
- Penstock transmission corridor of about 750 x 10 meters wide
- Powerhouse of 100 m²
- Lower reservoir of 5,000 m²
- Tidal pump platform and related piping of 1000m²

Please see attached maps

5. Preliminary description of economic, social and environmental impacts and benefits of the project.

The 500 KW plant would reduce the 7.3 million liters per year of diesel used by BC Hydro's Masset Diesel Generating Station by 1,825,000 liters of diesel and 6600 tonnes of GHG per year. The KTPDP would create 30-40 construction jobs during the construction phase and 6-8 permanent jobs for plant operation and maintenance. This would input 3.5 - 4 million dollars into the local economy.

The Cultural Features Identification Report prepared by the CHN identified some cultural features that may be impacted by the upland reservoirs and access roads.

YES is working with the CHN Heritage and Natural Resources committee to mitigate any risk associated with the cultural Features { CMT } within the proposed penstock corridor.

6. Preliminary assessment of alternatives that would avoid the use of protected lands and the reasons those alternatives are not considered feasible.

Yourbrook's original choice of project site was at Juskatla Narrows in Masset Inlet. The Hereditary Chiefs Council of the Haida Nation brought up cultural concerns and we were asked to move. Yourbrook worked with the chiefs and the CHN Heritage and Natural Resources Committee to come up with an alternative site. The Kamdis site was chosen after looking at 4 other possible sites, all of which had inconsistent tidal flows and inadequate topography.

The reasons for the chosen site are:

Our information shows that Tidal hydro power generation is an acceptable use in the Kamdis conservancy

Kamdis Management plan 2011 pages 16 and 22

Haida Gwaii Marine Plan Section 7.5

Conversation with Stewardship director of the Council of the Haida Nation- the necessary height of land is available for the upland reservoir (outside of the conservancy boundary)

- there is sufficient tidal flow inshore on both ebb and flow
- it is in close proximity to BC hydro infrastructure
- there were minimal cultural features identified

7. First Nations and local governments potentially affected by the project, and status of any discussions with these governments.

The area is within the North Coast Regional District but outside local government village councils, however, we do have letters of support from both Port Clements and Masset Village Councils. The Council of the Haida Nation, Old Masset Band Council, and Skidegate Band Council have also supplied letters of support. We have also completed a Cultural Features Identification study for the CHN HNRC.

Please see attached letters of support and Cultural Features Identification Study.

8. Known community groups with an interest in the protected area, and the status of any discussions with these groups.

No community organizations have come forward.

9. Any known environmental issues (e.g. species at risk impacts, fish habitat).

We have completed an underwater camera survey which was submitted to CHN Fisheries and no concerns were identified. Ongoing studies will be done as the work progresses to meet licensing and permit obligations. The upcoming FEED study will define the future processes.

It has been noted in the CFI study that portions of the proposed development area are contained within a Marbled Murrelet habitat reserve. No significant wildlife observations were made during field dates.

10. Anticipated project schedule

Clean Energy Production in B.C. An Inter-Agency Guidebook for Project Development This provides the guidelines for provincial permitting for Ocean Energy projects . Federally we will need a navigable Waters Permit and DFO approvals . Haida Gwaii is unique in that all approvals for Land and water use must go to the Solutions Table a joint body including representatives of the province and the CHN.

Phase 1- FEED study completion date March 31 2024

Phase 2 = Construction June 30-2024 to March 31 -2026

Phase 3-Commissioning March 31 2026-june 30-2026

11. Maps and illustrations as appropriate.

Attached with this document

General location map

Kamdis site map

Cultural features identification map

Letters of Support

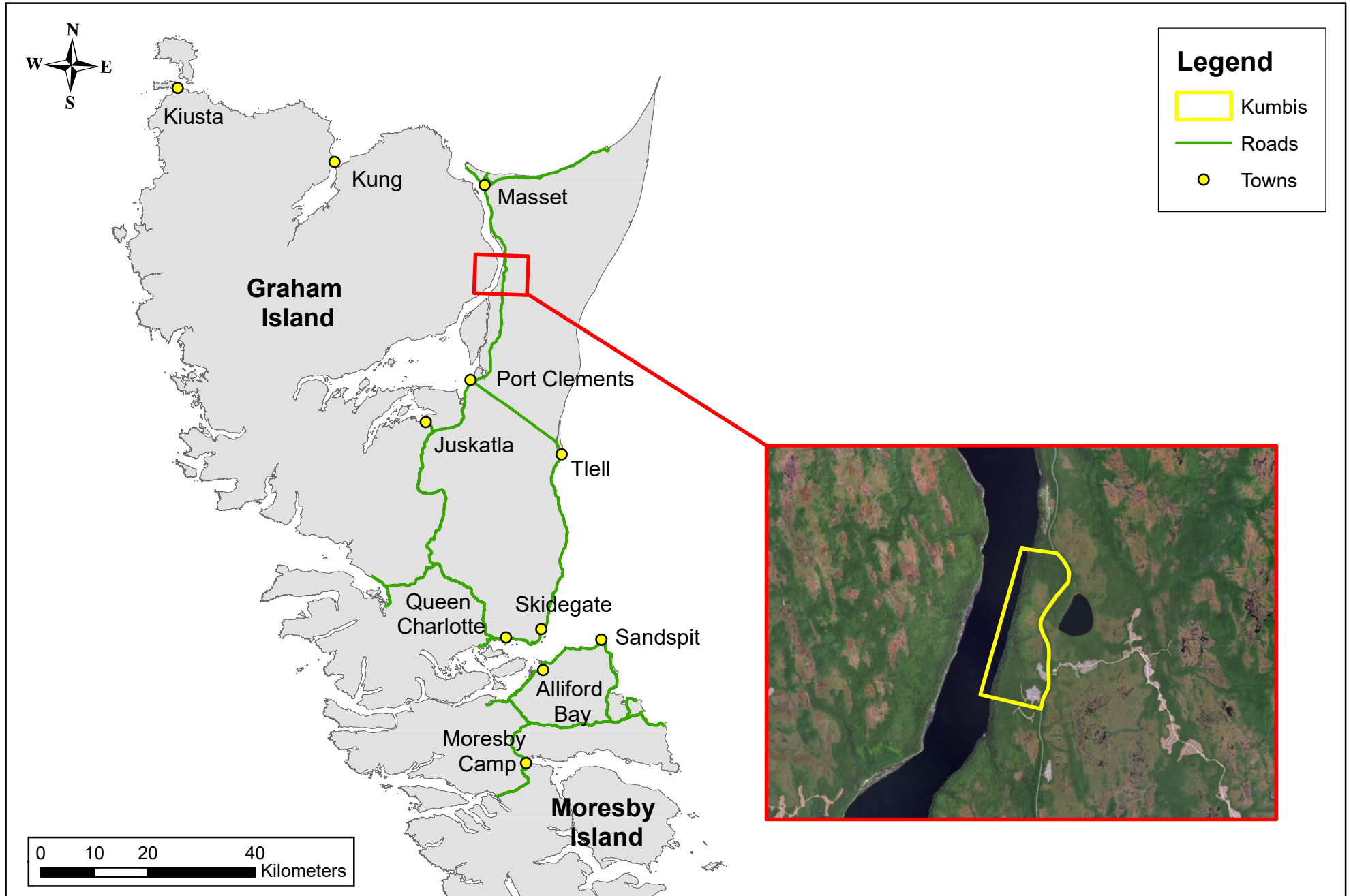
CFI report

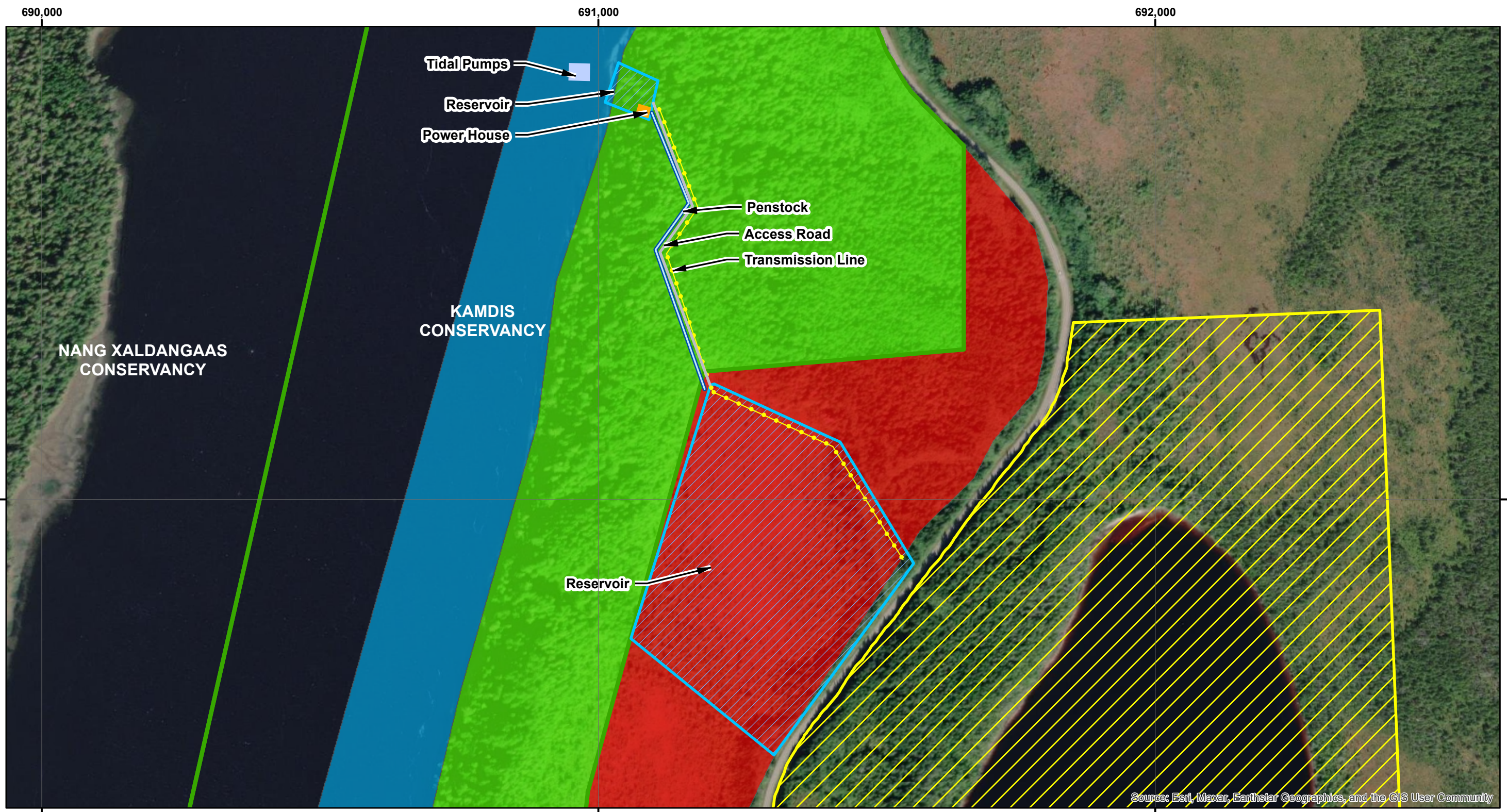
Conceptual system design

Thank you

Clyde Greenough

Kumdis Investigative License General Location Map

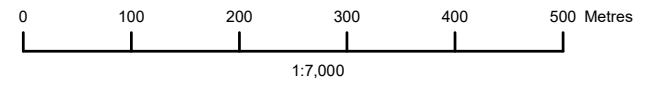




Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Map Key

Name	Power House	Conservancy
Access Road	Reservoir Area	Zone
Penstock Route	Tidal Pumps	Kamdis 1
Transmission Lines	Parks and Ecoreserves	Kamdis 2
		Kamdis 3



Document Path: D:\Projects\YourBrook_Energy\02_GIS_Data\MXD\Kumdis_Conservancies.mxd

Map Notes:
 1: Datum: North American 1983
 2: Projection: NAD 1983 UTM Zone 8N

Date: December 1, 2022
 Drawn By:

Project:
Kamdis

Client:
YourBrook Energy Systems Ltd.

Figure: #
 Subdivisions of the
 Proposed Kamdis
 Investigative License
 Boundary

CONCEPT OF TIDAL HYDRO SYSTEM

