

NAIKUN

Naikun Wind Development Incorporated

Investigative Plan

12 April 2019

1. Project Overview

The NaiKun Offshore Wind Energy Project (the Project) is located in the shallow waters off the northeast coast of Haida Gwaii in British Columbia's Hecate Strait. The Project size is estimated to be in 400 to 600 MW capacity to produce clean, renewable energy to serve more than 130,000 BC homes. Today the larger turbine on an expanded row and column layout will use approximately 40 to 60-10 MW WTG with rotor diameters of 200 m.

The NaiKun Offshore Wind Energy Project (the Project) will:

- provide British Columbians with a safe, secure, and environmentally sound domestic source of electricity
- establish British Columbia and Canada as leaders in renewable energy development
- provide training and employment opportunities to communities on the North Coast
- serve as a model for collaborative partnerships with First Nations

Historically, BC has enjoyed energy self-sufficiency and even significant surpluses, made possible by large-scale hydroelectric projects on the Columbia and Peace Rivers. At the time, these projects were some of the most ambitious in the world and the dams established a heritage of renewable and reliable power in the province.

BC is now facing a growing electricity gap, consuming more electricity than can be generated due to population increases as well as an increase in average per capita electricity use.

The under construction hydro project called Site C will not be enough to accommodate the demand of electricity on the long term. New sources will be needed and wind power will help the province to fulfill the ambitious electrification plans.

NaiKun Wind Project met the requirements of the Canadian Environmental Assessment Act (CEAA) and successfully concluded the harmonized environmental assessment review process.

Currently Naikun holds the Environmental Assessment Certificate #E09-04 for this Offshore Wind Energy Project, granted on December 10, 2009. The valid certificate can be found on <https://www.projects.eao.gov.bc.ca/p/naikun-offshore-wind-energy>

In preparation for the development of this project, Naikun has deployed an offshore structure to study and understand the wind resource of this proposed location. This station continues to measure the meteorological parameters needed for the preliminary phases of the project and will provide important wind data information for the larger more efficient WTG currently being evaluated.

This comprehensive meteorological system is active and collecting Wind Data, which has been used to create mesoscale and micromodels to perform energy calculations to determine the real potential of the project.

The collected data is also crucial to determine the feasibility of the project and helps to decrease the wind resource uncertainties.

Preliminary studies pointed that an offshore project of this magnitude will be able to generate 400 to 600 MW of renewable energy. It's important to mention, that the technology of Wind Turbines is constantly improving. With the rapid improvement in the turbine technology it is important to evaluate the newer larger turbines in the most efficient layout. Because there are far fewer turbines (40 vs 110) to produce the same energy, it is even more important to optimize the layout. The turbines are higher which provided more wind energy, but the wake effect can be greater and can be minimized through careful layout analysis. Various layouts and hub heights will be studied to determine the optimum power output for the larger turbines with the least environmental impact

For illustration purposes, only, of the existing technologies available in wind energy market, a picture is placed in the next page to show the concept of the traditional three blade wind energy converters and how an offshore wind farm in the proposed area will look like.



Featuring a traditional 3 blade 12 MW Offshore Wind Energy Generator (turbine) – Credit: GE Renewable Energy

2. Project Description

The proposed NaiKun Offshore Wind Energy Project, as described in the project overview section, is located in the shallow waters off the northeast coast of Haida Gwaii in British Columbia's Hecate Strait.

The Project size is estimated to be in 400 to 600 MW capacity, and the final selection of the turbine technology (class and size of the wind energy converter) is not finalized yet.

Studies and analysis are underway and once an Energy Power Agreement is achieved, the feasibility and technical studies will determine the right type of turbine for the project.

The main wind farm will consist of wind energy converters (turbines) and Inter-array cables, which will connect each turbine to a substation and subsequently to a BC Hydro substation, for the energy transmission and distributions. The estimated distances and length of these cables will depend of the final layout.

Initial preliminaries studies are showing that the network of submarine cables could be in the 100-130 km range. This type of aquatic cables are typically buried using jetting methods to a minimum depth of 1 m, though the depth may vary depending on local conditions and environmental considerations.

This figure below is an overview of the potential Area of Interest of this investigative phase.

As the investigative studies progresses, the layout will be accommodated to the newest wind energy converters available in the market, although the wind farm concept will remain very close to the presented picture.



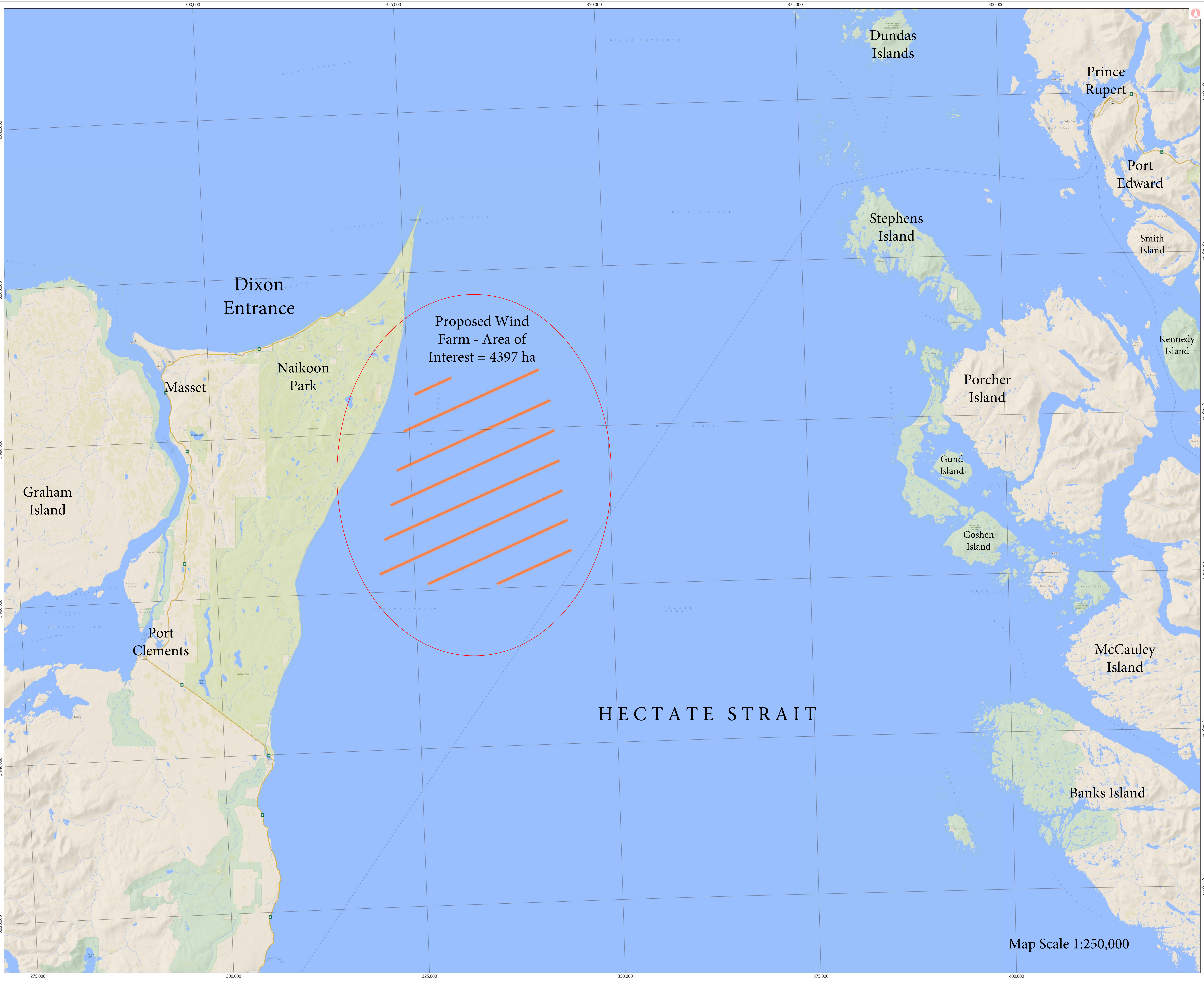
During the initial preliminaries studies, Naikun has selected a high-voltage Cable to transmit power from the wind farm and Haida Gwaii on the mainland. The HV system will provide ample capacity for the permitted wind generation project and a grid connection to Haida Gwaii to allow the Islands to get off diesel power and undertake the on-island renewable energy projects. The grid connection will tie into the Prince Rupert sub-station for delivery to BC Hydro Systems.

At this phase, Naikun is seeking to secure the area of interest for the main purposes of investigation, under a Investigative License (IL) format.

3. Project Location

The map showed in the next page, illustrates the proposed location for the project. A series of 8 rows is illustrated as a possible location of the turbines. The area of these rows is 4397 hectares in total.

The footprint of these rows is in an optimal placement to accommodate our Area of Interest and Study. Our TRIPOD, which houses the active meteorological Stations it's deployed within this area of interest as well, covering the measurements of the proposed location for the wind farm.



Proposed Wind Farm - Area of Interest = 4397 ha

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The NaiKun project can be differentiated from other renewable energy projects in the region by the fact that it has completed its preliminary engineering and both the Federal and provincial environmental assessment projects. The project is therefore ready to proceed once it has obtained a contract to sell its power to BC Hydro.

The company was unsuccessful in the most recent Call for Power which began in 2008 and concluded in 2010. The timing of the formal next opportunity to bid to BC Hydro remains uncertain, dependent on a decision by the utility and the Government of British Columbia. However, the significant electrical demand in the province (especially in the NW and NE) make the first permitted phase likely in the near future. In the meantime, NaiKun continues to seek opportunities to move a procurement process forward

The exact time of construction commencement is obviously dependent on a contract award. Only then the final construction schedule, including both the date and the time of year will be generated. This given that construction will begin in April of any given year due to the seasonal construction window, dictated by ocean weather conditions.

The next page, contains a Gantt Chart Style Preliminary Schedule showing how the construction of this proposed wind farm will look like, when passed the investigative phase of this Investigative License.

4. Ongoing Diligent Use

For the area of interest, Naikun Wind Development Incorporated spent over 5 million dollars in studies to obtain the federal and provincial environmental certificates.

Documents and studies that were prepared to comply with all requirements of the Environmental Assessment Act are in the public domain and can be found under this link for consultation: <https://projects.eao.gov.bc.ca/p/naikun-offshore-wind-energy/docs>

Naikun Wind Development Inc., successfully passed all phases of the Environmental Assessment process, all the way to the certificate grant.

Since Naikun did not received or won a contract of Energy Supply with BC Hydro, our team is diligently working on alternatives to move forward with the project.

Pre-construction Studies are currently planned for the coming years, and this is the main reason to pursue for another Investigative License. Sea bed survey for the foundations and submarine cables is planned for this summer, if the land tenure is granted on time.

5. Wild Life Management Plan

At the duration of this Investigative License, no wildlife will be disturbed and if any investigative activity is deemed to cause disturbance, mitigation measures will be implemented and shall be fully coordinated with provincial and federal authorities as required by legislation..

Maintenance of our meteorological measurement equipment, already deployed on site is treated separately in a different permit, and it is the only ongoing activity that is physically taking place at the area of interest.

If any wildlife is disturbed or noticed for any reason during site visits, Naikun's contractor or crew will immediately report to the DFO, following the proper procedures.

6. First Nations

It's foreseen that, if the permit to continue to investigate is granted, Naikun will not stop to engage with the First Nations, which also share interest in the proposed wind farm area.

Naikun has committed to provide all information collected in these investigated use studies to the Haida Nation.

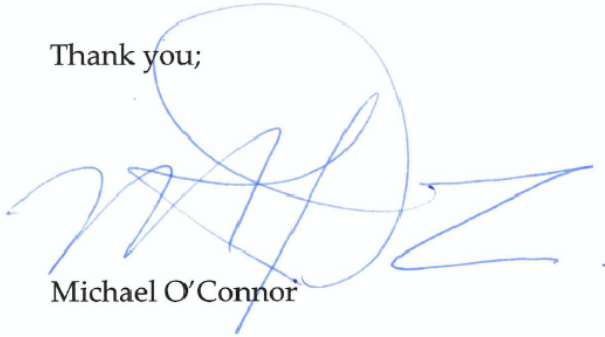
Meetings will intensify as the project progresses in to a construction phase. The implementation of this project will provide remote First Nations with clean power, giving them access to a stable network of renewable electricity.

It's well known that today, many of these communities are off grid and getting electricity from fossil fuel based sources of energy.

Contact

To ensure best internal practices, please, direct all correspondences to Michael O'Connor at moconnor@naikun.ca

Thank you;



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