NAIKUN OFFSHORE WIND PROJECT
Wind Energy is going offshore

Horns Rev – 80 turbines

Arklow Bank – 7 turbines

Nysted – 72 turbines
Clean Energy Options

- Wind
  - Onshore
  - Offshore
- Hydro
  - Large Dams
  - Run of river
- Biomass
- Solar etc.
North Coast Wind Complements Hydro System

The graph shows the monthly average production (MW) of a hydro system and the Nechako reservoir level (typical) from January to December. The average production peaks in July and August, with a significant drop from September to November. The Nechako reservoir level follows a similar trend, with a peak in July and a decline from August onwards.
HECATE STRAIT

- Extensive wind measurement & modeling
- Annual average windspeed ~35 kmh
- Other essentials
  - Access to Grid
  - Flat Seabed
  - Shallow Waters
- Potential very large scale resource

Source: Environment Canada
What is NaiKun?

- NaiKun Wind Energy Group is a publicly traded clean energy company
- Based in Vancouver
- Focused on single project
- Significant energy and construction experience
FIRST NATIONS PARTNERS

- Recognition of traditional territory

- Commercial partnership agreements with the Haida Nation, Metlakatla and Lax Kw’alaams
PROJECT SITE
# Timeline

## Commercial
- BC Hydro Clean Power Call issued Jun 2008
- Submit bid in Nov 2008
- Contract awarded Spring 2009
- Construction Apr-Oct 2012 & 2013

## Environmental
- TOR approved Dec 2007
- Studies summer 2008
- Application to be submitted early 2009
- Anticipate Decision on EA Certificate - Fall 2009
TURBINES

- 5 offshore turbine manufacturers, Germany and Denmark
- 3MW to 5MW
- 90 – 120m rotor diameter
- 80 - 90 metre hub height
- Blade tip >20m above high tide
TRANSMISSION SYSTEM

- Will use Voltage Source Converter (VSC) HVDC technology
- Bipole HVDC cable – lowest EMF
- Cables buried approximately 2 meters below seabed
- Mainland cable landfall at Port Edward
- HaidaLink cable landfall near Tlell
$2.5 million custom-built marine meteorological station

Installed in September ‘07

Equipped with LiDAR – a laser-based anemometer

Designed, fabricated and installed by BC firms
ENVIRONMENTAL ASSESSMENT

- Application is for Phase 1 only
- ToR approved December 2007
- Numerous local scientists, consultants and suppliers
Environmental Studies

- Initial key concerns for communities and stakeholders
  - Commercial crab fishery
  - Marine birds
  - Electro Magnetic Fields (EMF)
  - Employment opportunities
  - Seabed mobility
Learning from European Research

- Offshore Wind: Key Environmental Issues
  - Danish Report, November 2007
  - 8 years of data gathered before, during & after construction at 2 of world’s largest offshore wind farms

- “…very little impact on the environment neither during their construction, nor during their operational phases.”

- NaiKun is required to monitor the environment beyond construction.
TECHNICAL STUDIES

- Meteorology
- Geophysical Studies
- Marine Aquatic Ecology
- Marine Birds
- Marine Mammals
- Acoustics and EMF
- Archaeology: Land and Underwater
- Traditional Use
- Terrestrial Ecology
- Socio-economic Issues