

CASE STUDY

Community Solar Project, Alert Bay BC



“HAKAI proved that they have the experience and fortitude to deliver top-quality installation services in a geographically remote location that poses many challenges.”

JUSTIN BEADLE, CAO, VILLAGE OF ALERT BAY



OVERVIEW

The Village of Alert Bay is situated on Cormorant Island at the northern terminus of Johnstone Strait. Like other remote villages located in Coastal BC they have contributed deeply to BC's resource-based economy, and share their heritage with the First Nation People.

For decades, the village generated electricity using diesel fuelled gensets. In 1946 the Village was incorporated and an underwater cable was installed to supply power from Vancouver Island. Today, as a municipality it has one of the highest concentrations of solar photovoltaic energy per capita in the province.

With funding provided by the Union of BC Municipalities, the village selected five municipal buildings for the installation of solar arrays. Working HAKAI Energy Solutions, these buildings were assessed for viability and detailed designs were finalized. In November of 2016, the installation progressed throughout one of the most prolonged storm patterns on record.

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HAKAI Energy Solutions is dedicated to working with communities to develop energy systems that are sustainable and cost effective while providing reliable power year-round.

SYSTEM SPECIFICATIONS

Location	5 municipal buildings throughout Alert Bay, Cormorant Island, BC
Total Peak Capacity	79kW
System Type	Grid-tied solar PV
Building Types	Curved steel Quonset Flat roof Sloped metal roof Sloped asphalt roof
Photovoltaics	98 – 260W polycrystalline 174 – 310W polycrystalline
Inverters	2 – SE9KUS 3 – SE11400A-US 1 – SE14.4KUS

SYSTEM PERFORMANCE HIGHLIGHTS

Annual photovoltaic energy generation	72,511kWh
Average annual energy yield (kWh/kWp)	913
Commissioning Date	November 2016

Single and three phase grid-Interactive PV systems were constructed on the exterior of the Public Works facility, Recycle Depot, Village Office, Government Wharf Net Loft, and the Fire Hall. Unique racking considerations were made to ensure the robustness of the arrays which were to be mounted on highly exposed and/or curved roof surfaces.

Once the installations were complete, a screen displaying live feeds from the solar systems was installed in the Village Office. This monitor produces real time and historical production data as well as environmental benefit information. A renewable energy system becomes more tangible and engaging when local residents are able to track actual yields. The statistics can also be used for education in the local schools, connecting young people to the resources that support their village.

The solar systems will generate the majority of the electrical energy required to operate these five municipal buildings. Funds that were previously used for energy consumption can be redirected to maintaining core services, like water, sewers, and roads. This will help increase the communities profile, attracting investment and contributing to economic development.

This photovoltaic project has reduced the costs of municipal operations while bringing an awareness to local residents, government, and tourists as to the potential of solar energy that exists in the coastal region of British Columbia.