

Appendix 19-A
Visual Assessment Technical Report

PROJECT NUJIO'QONIK
Environmental Impact Statement



PROJECT NUJIO'QONIK
Visual Assessment
Technical Report

August 2023

Prepared for:



Prepared by:

Stantec Consulting Ltd.

Sign-off Sheet

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Guariglia, John Digitally signed
by Guariglia,
John
Date: 2023.08.11
16:49:55 -04'00'

Prepared by _____

John Guariglia, RLA – Visual Resources Practice Lead

Johnson, Kaela Digitally signed
by Johnson,
Kaela
Date: 2023.08.11
13:45:49 -07'00'

Technical Review by _____

Kaela Johnson – Environmental Planner

Robert A. Federico Digitally signed
by Robert
Federico
Date: 2023.08.13
09:49:53 -03'00'

Independent Review by _____

Robert Federico – Principal



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1.0 Introduction

1.1 Purpose of the Investigation

Project Nujio'qonik (the Project) involves the development, construction, operation and maintenance, and eventual decommissioning and rehabilitation of one of the first Canadian, commercial-scale, “green hydrogen”¹ and ammonia production plants powered by renewable wind energy. Located on the western coast of the island of Newfoundland, Newfoundland and Labrador (NL) (Appendix A, Figure A1), the Project will have a maximum production of up to approximately 206,000 t of green hydrogen (equivalent to approximately 1.17 megatonnes (Mt) of ammonia) per year. The hydrogen produced by the Project will be converted into ammonia and exported to international markets by ship. The hydrogen / ammonia plant and associated storage and export facilities will be located at the Port of Stephenville (in the Town of Stephenville, NL) on a privately-owned brownfield site and at an adjacent existing marine terminal, both of which are zoned for industrial purposes.

Renewable energy from two approximately 1,000 megawatt (MW) / 1 gigawatt (GW) onshore wind farms on the western coast of Newfoundland will be used to power the hydrogen and ammonia production processes. These wind farms (referred to herein as the “Port au Port Wind Farm” and the “Codroy Wind Farm”) will include up to 328 turbines and collectively produce approximately 2,000 MW / 2 GW of renewable electricity. The Port au Port Wind Farm consists of up to 164 turbines on the Port au Port Peninsula, NL and adjacently on the Newfoundland “mainland” (i.e., northeast of the isthmus at Port au Port, on Table Mountain). The Codroy Wind Farm will also consist of up to 164 wind turbines located on Crown land in the Anguille Mountains of the Codroy Valley, NL. The final total nameplate capacity for each wind farm is expected to be approximately 1,000 MW / 1 GW. The modelling and assessment work is based on preliminary layouts for both wind farm sites (i.e., 171 potential turbine locations at the Port au Port Wind Farm and 143 potential turbine locations at Codroy Wind Farm). Final wind farm layouts will be dependent on results of the wind campaign and more detailed field investigations. Once the layout and number of turbines are finalized, the results of models will be reviewed and updated as required. If additional turbine locations are added to the Codroy Wind Farm in the future, it will be done in consideration of the mitigation measures, compliance with regulations, and such that the conclusions of the effects assessment do not change.

The Project is subject to provincial environmental assessment (EA) requirements under the NL *Environmental Protection Act* and associated *Environmental Assessment Regulations* (EA Regulations).

At the request of WEGH2, Stantec Consulting Services Inc (Stantec) was retained to prepare a Visual Assessment Technical Report (Technical Report) to identify potential visibility of the Project.

¹ “Green hydrogen” is produced via electrolysis using renewable electricity to split water into hydrogen and oxygen. This type of hydrogen, which is referred to by the European Commission (n.d.) as “renewable fuel of non-biological origin”, is often called “green hydrogen” in industry.



1.2 Regulatory Criteria and Methods

There is no regulatory statute within NL that requires a visual assessment be completed for this Project. However, the final Environment Impact Statement Guidelines (EIS) (December 2022), for this Project, state that:

- Section 4.2.4 Land and Resource Use: “The EIS shall describe relevant land and resource use within the study area of the Valued Ecosystem Components (VECs), including, but limited to.... g) Landscape and viewsapes, including extent of developed and undeveloped land.”
- Section 6.2 Predicted Environmental Effects of the Undertaking: “Effects of all phases of the Project on human health and quality of life, including but not limited to...ix. Viewsapes.”

The term “viewsapes” has been interpreted as to what one might see (or view) of the Project from public locations within the landscape. The EIS Guidelines identify the need to understand how this Project will appear within the landscape, although they do not describe how the assessment should be completed. This report was therefore conducted to identify potential Project visibility and objectively determine the difference between the visual characteristics of the landscape setting with, and without, the Project in place. This process will allow decision makers and the public to evaluate its potential visual impact.

To satisfy the intent of the EIS Guidelines, this visual assessment will address the following:

- Description of the proposed Project
- Description of the landscape character/setting
- Identification and discussion of those factors that could affect visibility of the Project
- Viewshed mapping that identifies potential visibility
- Photographic simulations of the Project from select Key Observation Points (observer locations)
- Discussion of the potential visibility associated with the Project

The study area for this analysis will extend 15 kilometres (km) around the proposed turbines and 5 km around the centreline of the proposed 230 kilovolt (kV) transmission line.

1.3 Project Location and Description

Located on the western coast of the island of Newfoundland, Newfoundland and Labrador (NL) (Appendix A, Figure A1), the Project will have a maximum production of up to approximately 206,000 tonnes of green hydrogen (equivalent to approximately 1.17 megatonnes (Mt) of ammonia) per year. The hydrogen produced by the Project will be converted into ammonia and exported to international markets by ship. The hydrogen / ammonia plant and associated storage and export facilities will be located at the Port of Stephenville (in the Town of Stephenville, NL) on a privately-owned brownfield site and at an adjacent existing marine terminal, both of which are zoned for industrial purposes.



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The electricity demand for hydrogen production is anticipated to be 500 megawatts (MW) to 1.2 gigawatts (GW), depending on Project development. Renewable energy from two approximately 1 GW onshore wind farms on the western coast of Newfoundland will be used to power the hydrogen and ammonia production processes.

The route of the transmission line generally follows an existing utility corridor shortly after making landfall from the Port au Port Peninsula before entering the hydrogen plant from the west. The portion of the transmission line which connects the Codroy wind farm to the hydrogen plant also follows an existing utility corridor found to the north or west of the Trans-Canada Highway. Where possible, the proposed transmission line will follow, or run parallel to, an existing line.

1.3.1 Proposed Wind Farms

The proposed wind farms are located more than 75 km apart and will collectively have the capacity to generate up to two GW of power.

Each turbine will consist of a steel monopole tower, a rotor comprised of three blades, and a nacelle that contains a generator, power train and gearbox. A transformer is likely to be located adjacent to the base of the tower or in the rear of each nacelle. Due to aviation safety, navigation lighting will be required, as applicable, and the exterior components of the turbine will be white, or off-white.

WEGH2 is currently evaluating turbine models; therefore, this assessment assumes that the wind farms will be constructed using the tallest turbine being considered. The turbine selected for the purpose of modeling, the Siemens Gamesa CG 6.6-155 turbine, has a hub height of 122.5 metres (m) and a blade length of 76 m (rotor diameter of 155 m; its apex, or tip height, will reach a height of approximately 198.5 m (Figure 1).

In addition to the wind turbines, the Port au Port and Codroy wind farms will include the following infrastructure and facilities:

- Access roads interconnecting the site and wind turbine locations
- Cleared areas at each turbine location for crane pads and temporary laydown
- Pads and foundations for the turbine
- Electrical collector system (i.e., network of 66 and 34.5 kilovolt [kV] transmission lines) and required substations (up to two for the Port au Port wind farm and one for the Codroy wind farm) for interconnection to the local grid



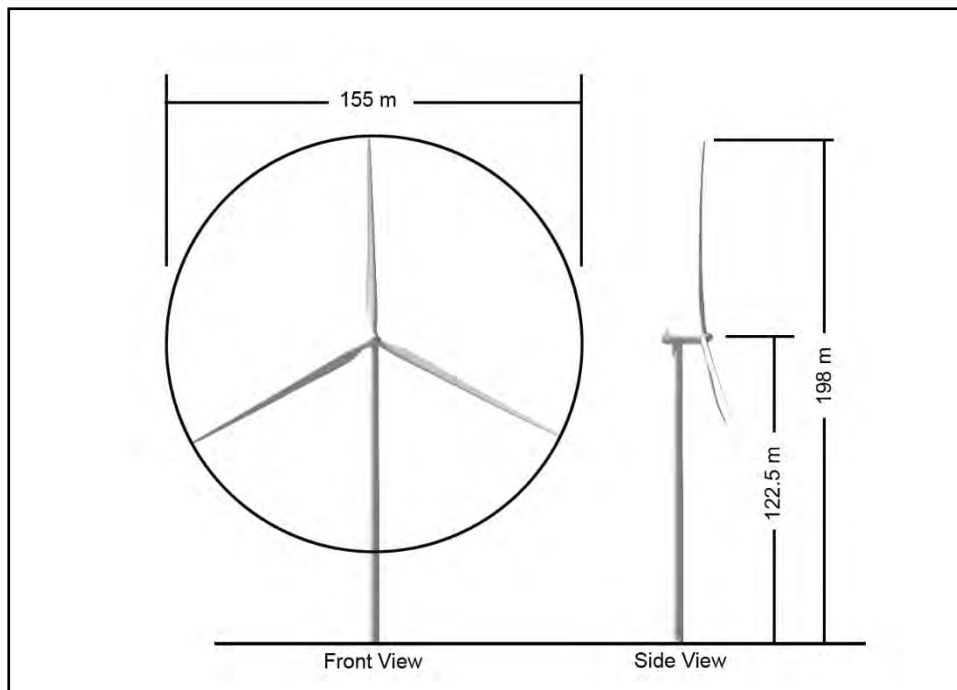


Figure 1 Turbine Dimensions

1.3.2 Proposed 230 kV Transmission Line

The preliminary design for the Project transmission lines is based on single circuit 230 kV construction, with two transmission lines originating from each of the wind farm substations travelling to the hydrogen plant Terminal Station (TS). The total length of these lines will be approximately 145 km. At least two new 230 kV transmission interconnections will be required. The proposed configuration for the two Port au Port wind farm transmission lines includes:

- Approximately 18.7 km of overhead transmission lines from the Project TS to the east transition compound station (located near Port au Port East).
- Approximately 4.6 km of underground transmission line between the east and west transition compound stations.
- Approximately 23.9 km of overhead transmission line between the Port au Port wind farm substation and west transition compound station.

Two single circuit 230 kV transmission lines will connect the Codroy wind farm substation, located in the Anguille Mountains, to the Project TS. This route will include approximately 107 km of overhead transmission lines.



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The 230 kV transmission lines will require their own right-of-way (RoW) (Figure 2). Dependent on the transmission line routing and proximity to adjacent residential areas, the following designs are proposed for the transmission line construction:

- Monopole steel structures with bundled conductors (two per phase): structures will be equipped with overhead shield ground wire or overhead optical ground wire for lightning protection and control, and guy wires for additional support, where required. For the purpose of this study, it is anticipated that each pole will be approximately 34 m tall and likely spaced approximately 128-230 m apart. There would be a mix of monopole and angled structures.
- Underground conductors will be used at the isthmus to the Port au Port Peninsula due to the residential congestion and limited space for new overhead transmission rights-of-way (RoWs). Approximately 4.25 km of buried conductors installed in a concrete duct bank are proposed through the town of Port au Port East, generally following roadways and the existing Newfoundland Power 66 kV transmission line ROW.
- Where feasible/available, the new 230kV transmission lines will follow existing transmission line ROWs. In coordination with Newfoundland Power, NL Hydro or Emera NL infrastructure, there will be an effort to establish a common transmission corridor, with common access points for future maintenance.

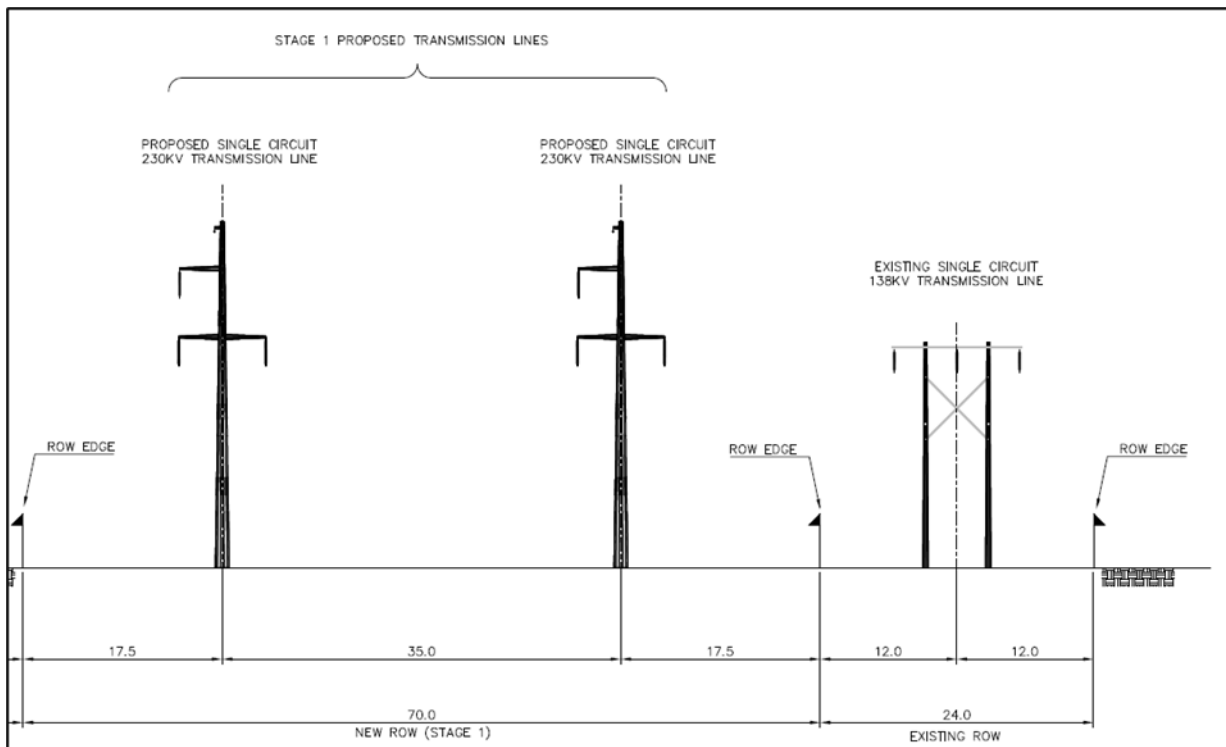


Figure 2 Typical 230 kV Transmission Line Right of Way - Two Circuits



1.4 Study Area and Landscape Character

1.4.1 Visual Study Area

The Visual Study Area (VSA), varies depending on which Project component is being evaluated. The VSA around the wind farms extends 15 km around the outermost turbines, and 5 km around the centreline of the 230 kV transmission line.

Based on the scale of the Project and the character of the regional landscape, it is recognized that the Project, particularly the wind turbines, will, at times, be visible at greater distances. However, at distances beyond the VSA, it is assumed that natural conditions (e.g., atmospheric perspective, distance) will begin to decrease potential visibility.

1.4.2 Landscape Character

The landscape character of an area can be defined by the basic pattern of landform (topography), vegetation, water features, land use, and development. This section offers an overview of the visual condition for each of the VSAs being evaluated. The description of the landscape setting for each VSA was deemed appropriate based on the varying settings for each of the three Project components. Ultimately this information will assist in establishing the baseline conditions so that visual changes can be evaluated.

1.4.2.1 Port au Port Wind Farm

Topography and Vegetation

The VSA is within the Western Newfoundland Forest Ecoregion, which includes the Port au Port Subregion. The Port au Port Subregion is dominated by wind-exposed limestone barrens, bedrock, and shallow soils. These conditions have caused the vegetation to adapt in order to survive the shallow soil and limestone barrens. The Peninsula is characterized by hilly lands, reaching an elevation of 355 m, to the south, sloping to elevation of 20 m to the north. Although the interior of the Peninsula has eroded over time and has been influenced by mining, the landscape does exhibit a substantial amount of vegetation. The Peninsula's coastline is relatively even and gently sloping, exhibiting rocky beaches and rugged coastal cliffs along the western and southern extents of the Peninsula; elevations rise 350 m above sea level in the White Hills area. Deposits of limestone and dolostone cover most of the Peninsula and the underlying bedrock is often exposed, with shallow soil cover, resulting in limestone barrens plant communities and limited forest growth.

The VSA extending inland is characterized by hilly to mountainous lands. The landscape exhibits a substantial amount of vegetation, and a series of undulating ridge tops with deeply cut ravines and valleys. Elevations range from roughly 145 m to 355 m above the Gulf of St. Lawrence. The shoreline is characterized by steep, vertical cliffs extending 200 m above the Gulf of St. Lawrence where it then rises 155 m by traversing hilly to mountainous landforms.



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Dominant tree species within the VSA are representative of the Dryopteris-Hylocomium-balsam fir zonal forest found throughout much of the region. Species include balsam fir, yellow birch (found below 200 m), red maple, white spruce, eastern larch, trembling aspen, balsam poplar, white pine, and black ash. Outside the developed communities (e.g., Town of Stephenville) and scattered areas cleared for uses such as residential and commercial, the VSA contains a large number of forested lands. While vegetation located inland or are in a more protective environment may reach mature heights, those found along the coastline may experience a stunted growth due to the conditions they are growing in and as the result of the wind.

Water Features

Water features are an important and scenic component of the visual landscape within the VSA. The VSA is bordered, to the north, south and west, by the Gulf of St. Lawrence, and includes numerous rivers (including tributaries) and ponds throughout the VSA. The shoreline of the Gulf is irregular and is characterized by a series of bays (e.g., Port au Port Bay) of varying sizes, steep dramatic cliffs extending 200 m above the water, and beaches found to be rocky and, in some cases, sandy.

There are a number of waterways within the VSA that drain to the south or west to the Gulf and north and west into the Port au Port Bay. These water courses include Victors Brook, Lourdes Brook, Three Rock Cove Brook, Mainland Brook, Cointres Brook, Red Brook, Big Cove Brook, Falls Brook, Smelt Brook, and Fox Island River. In addition to the river tributaries, small streams, and wetlands, there are dozens of inland ponds within the VSA. These ponds include Gravels Pond, Gulls Pond, Long Gull Pond, Noels Pond, Two Guts Pond, and Port Harmon.

Transportation

The primary roadway within the VSA is the east-west running Route 460, which also connects the Port au Port Peninsula with the mainland. Additional major thoroughfares include Route 490 (which connects the Trans-Canada Highway to Stephenville), and Route 463 (provides access to the north side of the Peninsula and originates/terminates at Route 460).

Routes 460 and 463 located on the Peninsula are two-lane roadways that ring the landform and connect multiple community centres. Both allow for the development of roadside residential/community structures and in select locations commercial enterprises. Development along the south side of the Peninsula (Route 460) appears to be more common. In many cases these roadways were cut into the landscape resulting in areas with steep rocky side banks.

The road network inland and around Stephenville is more extensive and includes numerous local roads lined with a variety of land uses.



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Community Centres

Community centres (also referred to as population centres) within the VSA vary greatly in size and density. The largest centre is the Town of Stephenville, with a number of smaller rural community clusters including Boswarlos, Cape Saint George, Kippens, Lourdes, Port au Port, and Red Brook. The Town of Stephenville is the region's largest community providing a variety of resources as further discussed below:

Town of Stephenville – Stephenville was the host to an American-built Air Force Base for 25 years (1941-1966); this resulted in significant growth for the small community. The Base required the development of needed infrastructure and amenities (e.g., housing, commercial, recreation) to support the Air Force members, their families, and the growing community. When the Base closed in 1966, it was turned over to the provincial government, and the land and appropriate facilities were repurposed to house other industrial or commercial uses. Remnants of the Base and uses are still seen within Stephenville.

The Town (population of approximately 6,600 and service centre of an area that contains approximately 25,000 individuals) is generally located 6.3 km east-southeast of the nearest proposed turbine². Stephenville is located along the shores of the St. Georges Bay where residents and visitors can take advantage of the available water views, recreation, commercial and industrial services, and experience a mix of cultures and traditions. As evident by the street pattern, it appears that the Town was planned at different times, likely based on developmental pressures (e.g., pre/post Base development); street patterns in the downtown area reflect a loose grid-like design, while a curvilinear pattern is seen to the east and south of Blanche Brook. Scattered throughout the community are a number of commercial establishments, including service facilities and offices; a higher concentration of establishments appears to be located along Main Street and just south. The community is also home to the Sir Thomas Roddick Hospital, College of the North Atlantic, and Stephenville International Airport.

The density of housing within the Town appears to be low to moderate and consists of single-family and multi-family dwellings; a higher concentration of housing can be seen toward the centre of the community. These residential dwellings, mostly one to two stories in height, tend to be older and well maintained. Multi-family structures, including apartment complexes, appear to be concentrated near the intersection of West Street and Bolands Drive, and along Montana/Ohio Drives and Carolina Avenue east of the Warm Brook. Commercial and institutional uses are scattered throughout the community, however, most appear to be situated in the southwest portion of the community, namely along West Street, Main Street, Queen Street and Prince Rupert Drive, to name a few. Most of these enterprises occur in one-story buildings, the tallest of which are six stories associated with College of the North Atlantic and Stephenville Manor located along Massachusetts Drive. Extending further inland, the density of built structures tends to drop rather quickly to the north, east, and south as it transitions to forest, mountainous terrain, undevelopable land, or the Gulf of St. Lawrence (includes the St. Georges Bay and Port au Port).

² Measured from the intersection of Route 460 and Queen Street to the southernmost turbine located on the mainland.



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Town of Stephenville Character Images.

Although the Town of Stephenville is the largest, most urban, community within the VSA, it is important to recognize that the total population of the Port au Port Peninsula is somewhat similar to the Town. In 2021 the total population of the Peninsula was 4,734 (Statistics Canada 2022), with residents spread amongst several small communities found along Routes 460 and 463. Overall, smaller communities are found throughout the VSA situated along roadsides (clusters of structures), with some having limited number of dead-end residential roads that originate from a major road (e.g., Port au Port or Lourdes). Outside these communities, houses may be found on individual lots of land scattered along roadways.

Existing Energy Infrastructure

Transmission structures of varying heights, styles, and configurations are visible throughout the VSA. These structures can vary from single wooden poles to steel lattice, carrying up to 230 kV voltage lines.



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Identified transmission structures and associated infrastructure found on the Port au Port Peninsula include, but may not be limited to:

- Wooden monopole transmission structures are located along Routes 460 and 463. These likely serve those residing or working on the Port au Port Peninsula. These poles are generally placed on the inland side of the roadways, except for where poles may be placed on both sides of the roadways within communities.



Examples of Roadside Utility Poles.

- Wooden H frame transmission structures carrying a 69 kV line may be found further inland connecting the Atlantic Minerals Limited (ATL) mining operation to the Berry Head substation located in Port au Port. Along this line is a substation located in Piccadilly.



Examples of an H Frame Transmission Line and Substation on the Port au Port Peninsula.



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On the mainland, there are a number of transmission structures and associated infrastructure to be found, not including the local distribution wooden monopoles found roadside. These include, but may not be limited to:

- Several 69 kV lines found along the route extending from the Port au Port substation, proceeding around the Town of Stephenville, connecting to the 50 megawatt Stephenville Turbine Station or the Bottom Brook Substation (located outside the VSA). The lines are carried on a variety of pole types including wooden monopole and H frame structures, as well as select steel lattice structures. Substations are found on Gallant Street, and at the intersection of Route 460 and Minnesota Drive.
- Wooden H frame structures carrying a 230 kV line can be found exiting the Stephenville Turbine Station extending east to the Bottom Brook Substation.



Examples of Transmission Infrastructure located on the mainland.

Mining Operations

There is a history of mining on the Peninsula; much of its interior has been claimed by mineral exploration and quarrying companies. The high concentrations of dolomitic and limestone deposits found in this area makes this the primary activity on the Peninsula. On-going mining operations near Lower Cove are clearly evident as AML mines chemical-grade high-calcium limestone, dolomite and construction aggregates. The operation consists of the mine, processing facilities, and a marine terminal on the Port au Port Peninsula. These materials are distributed across North America, South America, and Europe. The mine is a recognizable element within the landscape as it has been in production since 1988, operating 24 hours a day, seven days a week for nine months of the year.



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Example of Mining Activities.

Current mining operations span over 2.35 square kilometres, which is 0.64 percent of the Peninsula, however, there are claims of an additional 55.75 square kilometres for future mining. Together, this will make up 15.86 percent of the Peninsula.

Past mining operations may be witnessed near communities such as Aquathuna, Piccadilly Head, and Three Rock Cove.

Port of Stephenville and the Stephenville International Airport

The Port of Stephenville (Port) can be seen as an industrialized hub of activity as it services international and national ships, fishing, aggregate, container, and special freight. It operates year-round and is a sheltered, deep sea, and ice-free port. The Port can accommodate ships up to 385 m in length. Not only is the Port seen as a land-based operation, but it may influence what may be visible on the Gulf of St. Lawrence. Large vessels may be seen entering/exiting the Port, or in some cases queued to enter, forming visible lines of large vessels.

The Stephenville International Airport (Airport) is adjacent to the Port, forming a southern border to Stephenville. The Airport mostly consists of paved areas (i.e., runways, parking areas, etc.), with associated service buildings found on the north side of the facility. This industrial use appears different to the community centre and is similar in nature (and complementary) to the Port. This lightly used Airport connects with other airports on the island and mainland Canada.



1.4.2.2 230 kV Transmission Line

As the transmission line extends between, and within, the VSAs of both proposed wind farms, many of the characteristics described in Sections 1.4.2.1 and 1.4.2.3 will occur within the associated 5 km VSA (compared to the 15 km used for the wind farms) of the proposed transmission line. The following discusses the landscape characteristics along the transmission line, outside the VSA of the Port au Port and Codroy wind farms.

Topography and Vegetation

The VSA is within the Western Newfoundland Forest Ecoregion and spans the Port au Port and Codroy Subregions. The landscape exhibits a substantial amount of vegetation and exhibits hilly to mountainous terrain with ravines and valleys. In general, the land slopes from east to the west and elevations can range from roughly 5 m to 200 m above the Gulf of St. Lawrence water level.

Dominant tree species within the VSA are representative of the Dryopteris-Hylocomium-balsam fir zonal forest found throughout much of the region. Species include balsam fir, yellow birch (found below 200 m), red maple, white spruce, eastern larch, trembling aspen, balsam poplar, white pine, and black ash. The VSA contains mostly forested lands; however, there are scattered cleared areas for uses such as residential and commercial.

Water Features

Water features are an important and scenic component of the visual landscape, particularly within the northern portion of the VSA in the vicinity of Stephenville Crossing. In this area, the VSA is bordered to the west by the Rothesay Bay with a shoreline that is irregular and contains additional bays of varying sizes; the VSA includes numerous rivers (including tributaries) and ponds throughout.

There are several water bodies within the VSA that drain westerly to the Gulf, including the St. Georges River, Southwest Brook, Little Barachois Brook, Dribble Brook, Fischells Dribble, and Robinsons River. In addition to the river tributaries, small streams, and wetlands, there are dozens of inland ponds within the VSA. These ponds include Barachois Pond, Duck Pond, First Pond, Goose Pond, Gulf Pond, and Indian Pond.

Access to water resources is likely limited and those located to the east of the Trans-Canada Highway corridor are likely not evident to the typical observer.

Transportation

The primary roadways within the VSA include the north-south running Trans-Canada Highway and the east-west running Route 460. Of importance, the proposed transmission route generally parallels each of these roads. As noted above, there are a number of roads originating/terminating from the Trans-Canada Highway and Route 460, connecting communities of varying sizes.



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The Trans-Canada Highway located within the VSA, appears to be elevated above the adjacent lands. Where this occurs, it will give those using the Trans-Canada Highway a slightly different perspective to the surrounding landscape.

Community Centres

Community centres within the VSA are limited and appear to be found along Route 461. The centres consist of Stephenville Crossing and St. George's. In between, and just outside, these communities, dwellings are found along the roadside or along connecting roads. While mostly residential in nature, there are scattered commercial and institutional services.

Existing Energy Infrastructure

Not including the wooden monopoles found roadside, or in the more populated areas such as Stephenville Crossing, there are multiple transmission lines found within the VSA, including:

- Steel lattice structures used in carrying a 138 kV transmission line, as well as the Maritime Link, generally follow the Trans-Canada Highway.
- There are several lines exiting the Bottom Brook Substation, including three 230 kV lines, two 138 kV lines, and the Maritime Link. The lines are carried on a variety of pole types including wooden monopole and H frame structures, as well as lattice structures.
- A 69 kV line is found extending from the Stephenville Turbine Station to the Lookout Brook Hydro plant. The line is carried on wooden monopoles. Along this line is the St. George's substation.

1.4.2.3 Codroy Wind Farm

Topography and Vegetation

The VSA is within the Western Newfoundland Forest Ecoregion, which includes the Codroy Subregion. The landscape exhibits a considerable amount of vegetation, and a series of undulating ridge tops with deeply cut ravines and valleys. Elevations range from roughly 30 m to 540 m above the Gulf of St. Lawrence water level.

The shoreline is characterized by steep, vertical cliffs extending 150 m above the Gulf of St. Lawrence where it then rises 390 m by traversing hilly to mountainous landforms before it drops to 30 m to the Codroy Valley. East of the valley, the land again traverses mountainous terrain, climbing 640 m.

Dominant tree species within the VSA are representative of the Dryopteris-Hylocomium-balsam fir zonal forest found throughout much of the region. Species include balsam fir, yellow birch (found below 200 m), red maple, white spruce, eastern larch, trembling aspen, balsam poplar, white pine, and black ash. The VSA contains mostly forested lands; however, there are scattered cleared areas for uses such as residential and commercial. Similar to the Peninsula, while vegetation located inland or are in a more protective environment may reach mature heights, those found along the coastline may experience a stunted growth due to the conditions in which they are growing, and as the result of the wind.



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Examples of the Topography and Vegetation.

Water Features

Water features are an important and scenic component of the visual landscape within the VSA. The VSA is bordered, to the north and west, by the Gulf of St. Lawrence, and includes numerous rivers (including tributaries) and ponds throughout the VSA. The shoreline of the Gulf is irregular and is characterized by a series of bays of varying sizes, and steep dramatic cliffs extending 150 m above the water.

There are a number of water bodies within the VSA that drain westerly to the Gulf, including the Grand Codroy Estuary, Little Codroy River, and Brooms Brook (both of which drain into the Estuary); and a series of waterways entering the Gulf in a northerly fashion including, but limiting to the Robinsons River, Middle Barachois River, Crabbes River, and Highlands River. In addition to the river tributaries, small streams, and wetlands, there are dozens of inland ponds within the VSA. These ponds include Little Codroy Pond, Ocean Pond, Mitchells Pond, Tuckers Pond, Shoal Point Pond, Hynes Ponds, Friars Ponds, and John's Pond. Access to water resources is likely limited and those located to the east of the Trans-Canada Highway corridor are likely not evident to the typical observer³.

Transportation

The primary roadway is the north-south running Trans-Canada Highway, which generally bisects the VSA. There are a number of roads originating/terminating from the Trans-Canada Highway that extend westward toward the Gulf. These connect smaller communities (e.g., Codroy [located just outside the VSA], Jeffrey's, Millville, and Robinsons) and include Routes 404, 405, 406, and 407. While the Trans-Canada Highway has limited access points, the other roadways allow for multiple access points, in part due to roadside residences. While these roadways are two lanes and paved, there is also a vast network of narrow dirt logging roads that extend into the hilly, forested non-developed areas⁴.

The Trans-Canada Highway located within the VSA, appears to be elevated above the adjacent lands. Where this occurs, it will give those using the Highway a slightly different perspective to the surrounding landscape.

³ This does not apply to those water bodies that bisect the Trans-Canada Highway.

⁴ Some of these may be active resource roads being used for logging or other uses.



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Example of the Trans-Canada Highway and Dirt Logging Road.

Community Centres

Residential dwellings and, in some cases, commercial/institutional buildings are clustered within a few small roadside communities (e.g., Millville).

Existing Energy Infrastructure

Not including the wooden monopoles found roadside or in the more populated areas, there are two transmission lines bisecting the VSA, generally following the Trans-Canada Highway corridor, including:

- Steel lattice structures used in carrying a 138 kV transmission line, as well as the Maritime Link.
- Although no substations appear to be associated with these lines within the VSA, it should be noted that the Doyles Substation is located just outside.



Examples of Transmission Infrastructure located along the Trans-Canada Highway.



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Mining

Due to its geological composition and setting, there are a number of mineral claims by mineral exploration and quarrying companies east of the Trans-Canada Highway. Mining operations may not be visible to the typical viewer although they could become more visible in the future if mining development proceeds. It is possible that the only evidence of such operation will be semi-trucks (or similar) using the local roadways and the Trans-Canada Highway.

Timber Harvesting⁵

There is a history of, and plans for, timber harvesting within the VSA. While most of this activity will not be seen, it is possible that views of cleared lands (active or completed) may become available to select observers. This has the potential to change the setting of views and introduce new ones. Logging activities such as transportation (and associated impacts) of the harvested wood, unkept roadways, addition of logging roads, etc., may be recognizable.

⁵ The Project is entirely within what is known as harvesting district 14 ("District 14"). The identification of harvesting as a landscape characteristic can be provided for the Port au Port wind farm and the 230 kV transmission line. However, there is less of a demand on the Port au Port Peninsula and the acknowledgment of this activity should be considered, at least on the southern half of the transmission line. It would appear that the greatest activity potential would be within the Codroy wind farm VSA and is therefore included in this section.



2.0 Landscape Units

Landscape Units are areas of similar character when considering landform, vegetation, water resources, land use, and user activity/intensity. As the greater provincial landscape may possess diverse features and characteristics, a landscape unit may be seen as a sub-element with homogenous visual character. A landscape unit can provide context in evaluating viewer circumstances; for instance, an individual's experience will be different in a forested area when compared to being within a community centre or travelling along a highway.

Community Centre Unit

This Landscape Unit consists of the larger communities within the VSA, namely Saint George's, Stephenville, and Stephenville Crossing as the primary residential and commercial centers. Visibility to the surrounding landscape can be influenced by built structures and streets, resulting in many views of relatively short distance. However, there are opportunities for filtered or framed views through foreground vegetation and buildings along the perimeter of these communities. Open or partially screened views of the surrounding landscape (including the Gulf of St. Lawrence) are available from topographical highpoints (with limited or no obstructions) or as one gets close to the community boundary.

Coastline Community Centre Unit

This Landscape Unit consists of the small community centres found along the mainland or Peninsula coastline, and include, but are not limited to: Cape St. George, Heatherton, Kippens, Mainland, Port au Port, and Red Brook. These communities do not rise to the level of the Community Centre Unit, yet are clusters of residential structures, with limited commercial or service entities in some. They are located at varying distances to the cliff/water's edge and have views of the Gulf of St. Lawrence within, or immediately adjacent to, the community. The communities are characterized by low-to-medium density clusters of residential dwellings and may contain places of worship and community buildings. Buildings are typically one-story tall and found along a main roadway or a road found perpendicular, or adjacent, to the main thoroughfare. Development density drops almost immediately as one travels away from the centre of the community.

Rural Residential Unit

This Landscape Unit consists of low-density residential development found outside the above referenced communities and those found inland from the Coastline Residential Unit. Structures are generally located along the frontage of rural roads, varying in size, age and style, and are often set back from the road. Long distance views are often restricted to open fields and axial views along roadways. Rural residential uses are generally oriented inland not toward the water.



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Coastline Residential Unit

This Landscape Unit is driven by the scenic quality, character, and views of the Gulf of St. Lawrence and adjacent cliffs. Residential structures, whether year-round or seasonal, include traditional single-family residences, cottages, camps, and mobile homes which are mainly sited to benefit from the views of, or access to, the water rather than the landscape found inland. Within this Unit, the density of development is typically low with land found between residential dwellings and the edge of water/bluffs generally void of vegetation, so that open vistas may be enjoyed.

Coastline Bluffs Unit

This Landscape Unit is where a steep, vertical topographic rise in elevation from the water's edge is seen as a distinctive landscape element. These dramatic rocky bluffs occur throughout the VSA and can extend 200 m in height. This Unit is defined by scenic open vistas of the Gulf of St. Lawrence and can also be seen from other distant locations and from water level. There are not many publicly accessible areas (much of the edge is privately or provincially owned) for viewers to visit the top of the bluffs to witness the available expansive vistas over the Gulf and the views along the shoreline. However, the base of these bluffs is accessible from the water level or limited access points.

Highway Unit

This Landscape Unit consists of the Trans-Canada Highway, which is the major thoroughfare connecting Channel-Port aux Basques to Stephenville and points north. Overall, this Highway is a 928 km corridor that finds its way to the city of St John's. It is anticipated that the Highway receives a high number of transient individuals travelling at a higher rate of speed (100 km), exposing vehicle occupants to a variety of temporary views. It is anticipated that the focus of the driver will be on navigating the roadway where the view of the corridor is likely to be dominated by pavement and vehicles (including large trucks), and in some instances lined by roadside vegetation. There will be views of the surrounding landscape; however, it will be fleeting or short in duration, and could contain structures such as the existing transmission line and commercial/residential buildings. Views from these buildings would be of inland features (e.g., mountains, forest, etc.) and not of the Gulf of St. Lawrence.

Forest Unit

This Landscape Unit comprises a substantial amount of land found within the VSA. It includes mature deciduous and coniferous woodlands found in uplands, wetlands, or parcels of land that are undevelopable due to a variety of constraints or is provincially regulated. Although development within this unit is limited, in some cases low density housing (including camps and seasonal dwellings) may be found scattered throughout.

Views to the surrounding landscape may be limited due to the mature vegetation; however, views beyond an observer's immediate foreground could occur in locations where openings in the forest cover permit, or at overlooks. Limited, or filtered type views may also be evident near the edges of the unit, when near the Project, and during leaf-off seasons (e.g., winter).



3.0 Viewer Groups

Viewers that are participating in different activities, while in the same landscape unit, are likely to perceive their surroundings differently. The description of each viewer group is provided below to assist in the understanding of potential sensitivity and reaction from an observer that may experience a visual change to the landscape because of the Project.

Local Constituency: This group includes those individuals that would view the Project from their homes, places of business, or from local roads. Available views would likely be stationary and could be frequent or prolonged, when compared to those moving and shorter temporary views encountered by those involved with local travel. This group may be sensitive to the alteration of specific views that are important to them. However, sensitivity felt by an individual may be minimized, or diminished, because of repeated exposure over time.

Workers within this group split their time indoors or outdoors. When an individual is completing tasks indoors, they will not experience the surrounding landscape and, therefore, not be affected by a change to the surrounding environment. When outdoors, their sensitivity may differ; most workers will be focused on their responsibilities, likely giving minimal thought to the surrounding environment.

Commuter Constituency: This group includes those who travel through the VSA on highways for various reasons (referred to as “travelers” or “commuters”). Views experienced by this group would typically be moving at a higher rate of speed and focused on the road in front of them. Their views of the Project would mostly be peripheral, intermittent and of relatively brief duration. Also, sensitivity to the Project, may be lower due to the lack of familiarity or infrequent exposure to the local or regional landscape.

Recreational and Visitor Constituency: This group (local, regional, national, or of international origin) include those who visit NL to enjoy the cultural, recreational, and open spaces of the island. Activities may be land based or from the open waters. Sensitivity and duration of views to the Project may be contingent on the engaged activity.

*Maritime Constituency*⁶: This group comprises of those who may be found working in the Gulf of St. Lawrence such as commercial fishermen and those working on shipping vessels or cruise lines. These individuals would likely have minimal sensitivity to the presence of the Project. Those who may view the Project would likely be engaged in activities connected with their jobs; the aesthetic character of their surroundings will likely be of less importance. This constituency is likely to be more accustomed to the presence of industrial activities.

⁶ Although this report focuses on land-based views, or visibility, this group of potential viewers has been identified due to the importance that this industry has on NL.



4.0 Distance Zones

Distance can affect the apparent size and degree of contrast between an object and its surroundings. Distance zones are used to divide the landscape into distinct areas around the Project. The zones detailed below have been described, in part, by the assessment procedures published by the United States Forest Service as a guide for identifying distances at which landscape detail can be perceived by a viewer.

The zones presented below are appropriate for this specific Project and can be considered when viewing the Project at varying distances within the VSA:

- **Foreground (0 to 0.8 km):** At this distance, a viewer can perceive details of an object with clarity. Surface textures, small features, and the full intensity and value of colour can be seen on foreground objects. Individual landscape forms (e.g., shrubs, clumps of wildflowers) are typically dominant and details of individual Project components (e.g., transmission structures) would be evident.

Locations within approximately 91 m of the Project could see finer details (e.g., individual leaves and flowers) and textures (e.g., bark texture). Sensory cues are also evident depending on the location of an observer within this zone; small to medium sized animals, and movement of leaves, grasses and treetops may be noticed. It is likely that the opportunity to be within 91.4 m of the Project would be minimal; however, the opportunity may present itself along sections of the proposed transmission line.

The scale of the Project, when compared to the immediately surrounding landscape, would be at its highest, or dominant, within the foreground distance.

- **Middleground (0.8 to 6.5 km):** At this distance, elements in the landscape tend to retain visual distinction (e.g., individual tree forms, large boulders). Form, texture, and colour remain dominant, but become less defined with increased distance as they start to merge; individual hills become a range, individual trees merge into a forest, and buildings appear as shapes.

As the distance increases from the observer, colours are softened and blended and are identified more in terms of the regional context rather than by the immediate surroundings. Contrasts in texture between landscape elements are also decreased. In some areas, atmospheric perspective⁷, or conditions (e.g., haze, rain, fog, etc.), could begin reducing potential visibility to the surrounding landscape.

Scale is perceived in terms of identifiable features. Larger, intact landscapes as well as seamless mosaics of landscape types would appear more as series or patterns instead of as discrete individual landscape components. The scale of the Project would be seen as it relates to the surrounding landscape; with increased distance, its perceived scale begins to lessen within this zone.

⁷ Even on the clearest day, the sky may not be entirely transparent as atmospheric particulates may be present, resulting in a light scattering effect. This condition results in a decrease of colour intensity. Depending on the position of the sun and reflectivity of the object being viewed, the object is increasingly seen as being "washed out" over greater distances.



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- **Background (6.5 km to the horizon):** Within this distance zone, the landscape is simplified; little detail and texture is visible, and colours are flattened. The background encompasses the general regional landscape within the viewshed.

Vegetation and non-vegetated areas are seen as blocks of colour that are muted by atmospheric haze. Prominent land masses or other regional features (e.g., mountains and vast tracts of open lands) and/or ridgelines and horizon lines are often the overriding, or dominant, visual characteristics in the background. Atmospheric perspective becomes increasingly noticeable as colours change to blue-grays.

The background acts as the backdrop for foreground and middleground features, creating the basis of the regional scenic quality. With increased distance, the perceived scale of the Project continues to lessen as the Project becomes a minor element within a larger regional landscape setting.

The description of each distance zone is being supplied so that the progression of visual acuity over an expanded distance may be considered when reviewing the completed viewshed mapping and photographic simulations. Although an observation point may be located in a particular distance zone (e.g., middleground), Project components may also be visible in another zone as well.



5.0 Viewshed Map Methodology and Discussion

5.1 Viewshed Map Methodology

A viewshed analysis was conducted to assess the visibility of the proposed turbines and 230 kV transmission structures. Because of height differences of the structures and the 75 km, or more, separating the two wind farms, each were analyzed separately.

To calculate potential visibility the following was used:

- One control point for each of the proposed 14 turbines. This point was set at a height of 198.5 m (represents a blade-tip in an upright position) and is based on a hub height of 122.5 m and a blade length of 76 m.
- One control point for each set of proposed transmission poles. This point was set at a height of 34.1 m and is located between each set of the 646 side-by-side transmission structures. Each control point is roughly spaced 230 m apart.

All structure locations and heights were provided by the WEGH2. Using these points, a series of composite viewshed maps within the identified VSAs were created to identify the geographic area where some portion of the above referenced structures may be visible.

One viewshed map of each Project element (Appendix B, Figures B1, B3, and B5) was prepared defining the area within which there would be no visibility of the proposed structures because of the screening effect caused by intervening topography (also referred to as the “Topographic” or “Bare-Earth” viewshed). A second map (Appendix B, Figures B2, B4, and B6) was then prepared to illustrate the likely screening effect of existing vegetation and structures (this is considered as a more realistic scenario and is referred to as a Screened Viewshed). The Screened Viewshed is used in reviewing this Project.

The potential visibility illustrated in the completed viewshed maps is further refined by illustrating how many structures are visible based on the following groupings:

Port au Port / Codroy Wind Farms

- 1-10 turbines visible,
- 11-20 turbines visible,
- 21-30 turbines visible,
- 31-40 turbines visible,
- 41-50 turbines visible, or
- 51-60 (Port au Port only).

230 kV Transmission Line

- 1-10 structure pairs visible,
- 11-20 structure pairs visible,
- 21-30 structure pairs visible,
- 31-40 structure pairs visible,
- 41-50 structure pairs visible,
- 51-60 structure pairs visible, or
- 61-70 structure pairs visible.



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The viewshed maps and resulting analysis were produced using a 2019 digital elevation model (DEM) with a 5-metre resolution from the Government of Newfoundland Department of Fisheries, Forestry and Agriculture, and enhanced with Esri ArcGIS® software. A digital surface model (DSM) was then created by incorporating the DEM with canopy data consisting of vegetation heights 6 m or greater that was derived from the Newfoundland and Labrador Forest Inventory Typemaps (most useful information publicly available for a project of this magnitude). This data is provided by Newfoundland and Labrador Forestry Services and was originally created for general uses; every attempt was made to exclude or identify errors to provide the most accurate information available.

Following the completion of the viewshed analysis, adjustments were made in ArcGIS® to address the instances where vegetation or structures⁸ exceeded the viewer height of 1.8 m above ground level.

Although the viewshed analysis provides a useful representation of the potential visibility of the Project, certain conditions are not incorporated into the DSM (e.g., colour, distance from viewer, and atmospheric/weather conditions), and it is important to recognize that it is based on publicly available information. As a result, some areas of visibility may not always have actual views of the Project, and on the contrary the number of visible structures could also vary.

Viewshed Verification

While reviewing the viewshed map against aerial imagery and based on the completed site visit (Section 7.1), the geographic areas showing visibility is generally accurate. However, because of the available data to complete the viewshed analysis, inconsistencies were noted. Some items that were identified, include:

- The elevation (above surrounding grade) of the Trans-Canada Highway appears to not be represented accurately in the available terrain data. When conducting the site visit, it appeared that in some instances, the elevation of the Highway was 3 to 5 m higher when compared to the adjacent ground. This elevated position allows for the observer to have a different view to the surrounding landscape when compared to that from the ground (e.g., one may see over portions of roadside vegetation). This anomaly was not corrected as there is a lack of available information to make an appropriate judgement.
- In many instances, the height of the vegetation along the Highway and coastline appeared to be stunted, which did not seem to be accounted for in the obtained canopy data. This was not corrected as there is a lack of available information to make an appropriate judgement.
- Sections of select existing transmission line RoWs appeared to be fully vegetated in the obtained canopy data. Where found, this anomaly was corrected by digitizing the appropriate RoW boundary and removing the vegetated cells within the canopy data found within the designated limits.

⁸ Structures were identified through aerial imagery. Most buildings were considered to be one story tall, however based on the utilization of Google Streetview, approximately 217 structures were found to be two stories and two structures were found to be six stories.



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- Community centres were found to be void of vegetation within the obtained canopy data. As needed, this was corrected for those communities within the Port au Port wind farm VSA by digitizing major tree stands found within aerial photographs and assigning an appropriate height (that which may be found on adjacent or nearby vegetation). The Codroy wind farm did not appear to be affected based on the completed viewshed maps so no changes were undertaken for those communities found within this VSA.
- Recently cleared lands, due to mining or forestry activities were not included. This may show as cleared land or showing a degree of pioneer species growth; however, these lands are not available to the general public.
- Edges of forested land may have visibility due to limited obstruction between the Project and observer. It is assumed that when completing the screened viewshed, if an observer is located in a forest, it cannot see the Project.

While discrepancies were noted, the terrain data and vast majority of forested areas visible on aerial images were consistent with the obtained topographical and canopy data.

5.2 Viewshed Discussion

The following discussions relate to the review of the completed screened viewshed maps and associated analysis. The use of these maps is deemed appropriate as it is considered to be a more realistic scenario illustrating potential visibility. In analyzing the viewshed, it is important to remember that visibility does not equate to the entire turbine or transmission structure being visible. For instance, if the last few inches of the blade could be seen at 15 km away, it would trigger visibility. This will be further illustrated in the completed photographic simulations.

High visibility may be realized within areas adjacent to the turbines/transmission structures, and in remote areas not publicly accessible or only accessible to few or a low number of observers. The discussion focuses on visibility found within inland areas.

5.2.1 Port au Port Wind Farm

When considering the completed screened viewshed data (Table 1 and Appendix B, Figure B2), one or more of the proposed turbines will hypothetically be visible from roughly 72.3 percent of the 15 km VSA. When considering only land-based observation points (excluding visibility on the Gulf of St. Lawrence), this number reduces significantly to 25.9 percent.

The viewshed map illustrates that even though the Project consists of up to 164 turbines (assessed for 171), visibility from publicly available land-based observation points will be relatively low. Along the southern coastline of the Peninsula, in particular, the Route 460 corridor, visibility of the turbines will vary, though it appears that most visibility will range from 1 to 60 turbines; the highest number of visible turbines will be found between Sheaves Cove and Lower Cove. However, there are areas where there will be an increased number of turbines visible, including within the Ship Cove and Sheaves Cove communities, and the area of Lower Cove and the AML mine.



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The north coastline of the Peninsula may experience an increase in visibility along the Route 463 corridor. This is evident in the communities of Mainland, Three Rock Cove, Lourdes, West Bay, and Piccadilly Slant. These communities have areas where it is possible to see some portion of up to 60 turbines; the highest number of visible turbines will be found in the Three Rock Cove area. There is also a possibility to see a high number of turbines along the Long Point and Boswarlos Peninsulas. In these instances, turbines from the Port au Port Peninsula and the mainland island could be visible.

The community of Port au Port (both on the mainland and Peninsula) appear to have varying visibility which is likely due to topographical changes. Visibility along Route 462 is generally low between Port au Port East and Port au Mal.

Kippens Road east of Port au Port will experience spotty visibility of up to 20 turbines, with even more limited locations having the potential visibility of up to 30 turbines. The area, albeit small, with the potential for the greatest visibility occurs near the intersection of Ocean View Drive and Juniper Avenue.

Visibility within the Stephenville community will be dependent on the exact location of the observer and, for the most part, will be of a limited number of turbines seen amongst the existing structures and vegetation. The turbines most likely to be seen within the community are those located on Table Mountain. The greatest opportunity to have open views of the mainland or Peninsula turbines will be in the vicinity of the Port and Airport. This is likely the result of land devoid of vegetation and structures.

Although general areas of visibility are identified above, limited or no views will occur on forested lands, on the backside of hilly to mountainous terrain, or within ravines that are found within the VSA. Distant views may also be screened when dense vegetation is found between an observer and turbines.

Table 1 Land Based Topography and Screened Viewshed Coverage Summary for the Port au Port Wind Farm

Turbine Groupings	Topography Only Viewshed – Square (Sq) km of Visibility	Topography Only Viewshed – Percentage of Visibility	Screened Viewshed Sq km of Visibility	Screened Viewshed Percentage of Visibility
No Turbines Visible	206.5	22.1%	691.0	74.1%
1-10 Turbines Visible	77.1	8.3%	61.3	6.6%
11-20 Turbines Visible	77.1	8.3%	75.8	8.1%
21-30 Turbines Visible	79.7	8.6%	50.1	5.4%
31-40 Turbines Visible	39.5	4.2%	13.2	1.4%
41-50 Turbines Visible	33.0	3.5%	9.9	1.1%
51-60 Turbines Visible	36.8	4.0%	10.3	1.1%
60+ Turbines	382.5	41.0%	20.6	2.2%
Total	932.2	100%	932.2	100%



5.2.2 230 kV Transmission Line

When considering the completed screened viewshed data (Table 2 and Appendix B, Figure B4), one or more of the proposed transmission structures will hypothetically be visible from roughly 26 percent of the 5 km VSA. When evaluating land-based observation points (excluding visibility on the Gulf of St. Lawrence), this number reduces significantly to 16.3 percent. Many factors, including distance, topography and vegetation will limit the number of visible structures. Also, access to private or inaccessible land will dictate areas of visibility.

With a few exceptions, visibility is generally found within the proposed corridor RoW or adjacent existing corridor, around the Stephenville area, along segments of the Trans-Canada Highway corridor (and adjacent lands). Visibility will be most evident from locations where there are unobstructed views towards the line, along cleared roadsides and across open lands, and when the viewer is in close proximity.

The largest geographic area of visibility is in and around the Stephenville and Stephenville Crossing communities. Visibility appears to be caused by an increased amount of open land (e.g., Stephenville International Airport), and includes areas generally considered inaccessible (e.g., wetland/marsh areas located between Route 461 and Seal Cove Road). Visibility will vary from a limited number of transmission structures to up to 60 by the Airport.

Table 2 Land Based Topography and Screened Viewshed Coverage Summary for the 230 kV Transmission Line

Transmission Structure Groupings	Topography Only Viewshed – Sq km of Visibility	Topography Only Viewshed – Percentage of Visibility	Screened Viewshed Sq km of Visibility	Screened Viewshed Percentage of Visibility
No Structure Pairs Visible	171.1	12.9%	1,110.8	83.7
1-10 Structure Pairs Visible	124.9	9.4%	96.0	7.2
11-20 Structure Pairs Visible	112.6	8.4%	54.8	4.1
21-30 Structure Pairs Visible	84.0	6.3%	34.2	2.6
31-40 Structure Pairs Visible	63.1	4.8%	19.8	1.5
41-50 Structure Pairs Visible	60.9	4.6%	6.3	0.5
51-60 Structure Pairs Visible	47.1	3.6%	3.5	0.3
61-70 Structure Pairs Visible	42.0	3.2%	1.8	0.1
71+ Structure Pairs Visible	621.5	46.8%	-	-
Total	1,327.2	100.0%	1,327.2	100%



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The Project will bisect numerous roadways and parallel the Trans-Canada Highway; however, existing corridor(s) will also be in view where the proposed transmission line may be seen. Generally, visibility along roadways will be limited due to vegetation and the orientation of the roadway. Visibility will also be reduced as a result of the structures' slim profile, the potential rate of speed of the viewer travelling along roadways, and in some cases the distance from the viewer.

When views are available on properties that do not provide a visual barrier to the Project, it is anticipated that the number of visible transmission structures will not be significant. However, along the Trans-Canada Highway, there may be areas where the tree clearing and structures within the RoW may be seen at a further distance, or cresting landforms.

Project visibility from residential dwellings and other structures, found within the Stephenville and Stephenville Crossing areas will be dependent on their proximity to the Project, the amount of vegetation surrounding the structures, and screening from other buildings. However, if there should be views of the Project, it is anticipated that the number of visible transmission structures would be low.

5.2.3 Codroy Wind Farm

When considering the completed screened viewshed data (Table 3 and Appendix B, Figure B6), one or more of the proposed turbines will hypothetically be visible from roughly 28.2 percent of the 15 km VSA. When considering only land-based observation points (excluding visibility on the Gulf of St. Lawrence), this number reduces to 16.6 percent.

The viewshed map illustrates that even though the Project consists of up to 164 (assessed for 143) turbines, visibility from publicly available land-based observation points will be relatively low. Visibility is likely to be low along most stretches of the Highway. While the viewshed map illustrates that this is likely for the corridor, there are small pockets of potential high visibility (60+ turbines) in the area north of Coal Brook and in the vicinity of Codroy Pond.

Outside the Highway corridor, along the western coastline, there are areas of light to high visibility in the communities of Maidstone (up to 40 turbines) and Highlands (up to 50 turbines). To the south, along Route 406 in the vicinity of Upper Ferry, there are larger areas showing light visibility (up to 10 turbines), much of which may not be accessible, but visibility does include areas seen to be populated with residential structures.



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Table 3 Land Based Topography and Screened Viewshed Coverage Summary for the Codroy Wind Farm

Turbine Groupings	Topography Only Viewshed – Sq km of Visibility	Topography Only Viewshed – Percentage of Visibility	Screened Viewshed Sq km of Visibility	Screened Viewshed Percentage of Visibility
No Turbines Visible	432.7	25.6%	1,413.0	83.4%
1-10 Turbines Visible	174.8	10.3%	78.8	4.7%
11-20 Turbines Visible	136.3	8.0%	47.3	2.8%
21-30 Turbines Visible	140.0	8.3%	37.0	2.2%
31-40 Turbines Visible	124.1	7.3%	24.7	1.5%
41-50 Turbines Visible	120.0	7.1%	21.0	1.2%
51-60 Turbines Visible	100.0	5.9%	20.2	1.2%
61+ Turbines Visible	465.1	27.5%	51.0	3.0%
Total	1,693.0	100.0%	1,693.0	100%



6.0 Inventory of Visually Sensitive Resources

A visual resource inventory was undertaken to assist in determining potential visibility at locations that may be deemed of interest. As there are no practical guidelines within NL to determine what could be considered of aesthetic interest, Stantec undertook a review of the individual VSAs and identified publicly accessible locations that may be of Provincial or local interest (Table 4).

The following categories were used:

- Major recreation areas (local or Provincial) including playgrounds, athletic fields, and other recreational facilities/attractions.
- A designated trail (not part of a park).
- A property designated as historic.
- Provincial natural landmarks.
- Highways of high volume (relative to local conditions) or known designated scenic overlooks and vistas.
- Communities.

In addition to those categories listed above, this assessment also identified locations that can be considered “representative” and might not fall under the above identified categories; these locations may only be of interest to the local community (e.g., cemeteries, community buildings, schools). These locations may not be considered of aesthetic value but are believed to be accessible and important to the public. These locations were identified based on available mapping and documentation, viewshed mapping, and the field survey.

These locations are identified on the completed viewshed maps found in Appendix B.



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Table 4 Visually Sensitive Resources

Map ID	Resource Name	Distance to Nearest Structure within the Applicable VSA (km) and Distance Zone (F, M, B)			Number of Structures Visible Based on Topography Only Viewshed			Number of Structures Visible Based on Screened Viewshed		
		PaP	T-Line	Codroy	PaP	T-Line ⁹	Codroy	PaP	T-Line	Codroy
	Project									
1	Codroy Valley Provincial Park	N/A	N/A	15.0 (B)	N/A	N/A	15	N/A	N/A	1
2	Grand Codroy Provincial Park / RV Tent Camping	N/A	N/A	11.8 (B)	N/A	N/A	52	N/A	N/A	1
3	Codroy Valley Wetland Centre	N/A	N/A	10.5 (B)	N/A	N/A	28	N/A	N/A	0
4	St Ann Roman Catholic Church	N/A	N/A	10.1 (B)	N/A	N/A	9	N/A	N/A	0
5	Belanger Memorial School	N/A	N/A	9.9 (B)	N/A	N/A	25	N/A	N/A	2
6	Newfoundland T'Railway	N/A	N/A	7.1 (B)	N/A	N/A	42	N/A	N/A	0
7	Sgt. Craig Gillam Mark Rock Trail (Trailhead)	N/A	N/A	8.3 (B)	N/A	N/A	77	N/A	N/A	4
8	Wishingwell Campground	N/A	0.3 (F)	3.3 (M)	N/A	50	37	N/A	27	10
9	Cemetery (Highlands)	N/A	N/A	6.0 (M)	N/A	N/A	44	N/A	N/A	44
10	Crabbes River Park	N/A	0.5 (F)	7.7 (M)	N/A	5	6	N/A	3	0
11	Saint Columcille Church	N/A	N/A	6.5 (M)	N/A	N/A	62	N/A	N/A	18
12	Wharf (St. David's)	N/A	N/A	10.8 (M)	N/A	N/A	17	N/A	N/A	6
13	E.A. Butler All Grade School	N/A	N/A	?	N/A	N/A	83	N/A	N/A	6
17	Steel Mountain Trail (Trailhead)	N/A	4.1 (M)	N/A	N/A	8	N/A	N/A	0	N/A
22	St. Joseph's Roman Catholic Cemetery	N/A	3.7 (M)	N/A	N/A	249	N/A	N/A	0	N/A
23	St. Joseph's Cemetery (2)	N/A	3.5 (M)	N/A	N/A	238	N/A	N/A	0	N/A
24	Roman Catholic Cemetery (St. George's)	N/A	2.0 (M)	N/A	N/A	235	N/A	N/A	0	N/A
25	St Joseph Roman Catholic Church and Bayview Academy	N/A	2.5 (M)	N/A	N/A	232	N/A	N/A	0	N/A

⁹ Although a high number of visible Transmission Line poles may be identified in Table 4, it is likely that an observer may not be able to see structures beyond 5 kms due to factors outlined in this Technical Report.



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		PaP	T-Line	Codroy	PaP	T-Line ⁹	Codroy	PaP	T-Line	Codroy
26	K'Taqmkuk Mi'Kmaq Historical Museum	N/A	2.4 (M)	N/A	N/A	144	N/A	N/A	0	N/A
27	Siki Bennett Memorial Stadium	N/A	1.9 (M)	N/A	N/A	227	N/A	N/A	8	N/A
28	Turf Point (Indian Cove)	N/A	2.6 (M)	N/A	N/A	181	N/A	N/A	2	N/A
29	French Bread Oven	4.3 (M)	N/A	N/A	2	N/A	N/A	0	N/A	N/A
30	Boutte du Cap Park	4.3 (M)	N/A	N/A	1	N/A	N/A	0	N/A	N/A
31	Black Banks Beach	N/A	2.9 (M)	N/A	N/A	133	N/A	N/A	5	N/A
32	The Boot	4.6 (M)	N/A	N/A	1	N/A	N/A	0	N/A	N/A
33	St. Benedicts Cemetery - Sape'wit Penwa' Wutqutaqne'Katim	1.9 (M)	N/A	N/A	76	N/A	N/A	17	N/A	N/A
34	Cape Saint George Marina	1.6 (M)	N/A	N/A	92	N/A	N/A	33	N/A	N/A
35	Our Lady of the Cape De Grau Cemetery	1.9 (M)	N/A	N/A	70	N/A	N/A	19	N/A	N/A
36	Ballfield	1.9 (M)	N/A	N/A	65	N/A	N/A	16	N/A	N/A
37	Our Lady of the Cape School	1.8 (M)	N/A	N/A	60	N/A	N/A	13	N/A	N/A
38	École Notre-Dame-Du-Cap	1.8 (M)	N/A	N/A	56	N/A	N/A	13	N/A	N/A
39	Park	1.7 (M)	N/A	N/A	54	N/A	N/A	12	N/A	N/A
40	Mawio'mi Cultural Grounds	1.8 (M)	N/A	N/A	66	N/A	N/A	10	N/A	N/A
41	Our Lady of the Cape Parish Rectory	1.7 (M)	N/A	N/A	53	N/A	N/A	10	N/A	N/A
42	Cape St. George Recreation Centre	1.6 (M)	N/A	N/A	49	N/A	N/A	8	N/A	N/A
43	Loon Park and Forest	1.6 (M)	N/A	N/A	62	N/A	N/A	0	N/A	N/A
44	Barachois Pond Provincial Park (Entrance)	N/A	0.9 (M)	N/A	N/A	130	N/A	N/A	0	N/A



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		PaP	T-Line	Codroy	PaP	T-Line ⁹	Codroy	PaP	T-Line	Codroy
45	Benoit First Nation Penwaaq L'nu'k	1.5 (M)	N/A	N/A	52	N/A	N/A	7	N/A	N/A
46	Stephenville Crossin Trestle	N/A	3.7 (M)	N/A	N/A	198	N/A	N/A	29	N/A
47	Benoit First Nation M'gmaw Heritage Park and Farm	1.1 (M)	N/A	N/A	24	N/A	N/A	4	N/A	N/A
48	Joe-Mic's Trail	1.1 (M)	N/A	N/A	75	N/A	N/A	36	N/A	N/A
49	Cape St. George Community Pasture	0.3 (F)	N/A	N/A	70	N/A	N/A	40	N/A	N/A
50	Community Ballfield	N/A	3.3 (M)	N/A	N/A	191	N/A	N/A	21	N/A
51	Marches Point RC Cemetery	1.8	N/A	N/A	64	N/A	N/A	22	N/A	N/A
52	Memorial Garden	N/A	2.3 (M)	N/A	N/A	197	N/A	N/A	22	N/A
53	Saint Michaels Elementary School	N/A	1.9 (M)	N/A	N/A	190	N/A	N/A	1	N/A
54	Hidden Falls	1.8 (M)	N/A	N/A	11	N/A	N/A	11	N/A	N/A
55	Roman Catholic Cemetery (Ship Cove)	1.7 (M)	1.9 (M)	N/A	73	91	N/A	48	10	N/A
56	Fishing Shacks	1.6 (M)	1.4 (M)	N/A	5	178	N/A	4	4	N/A
57	Port Harmon Beach	11.3(B)	2.9 (M)	N/A	147	207	N/A	11	0	N/A
58	Joey's Lookout	13.0 (B)	1.0	N/A	167	374	N/A	10	0	N/A
59	Saint Joseph Catholic Church	1.5 (M)	6.8 (B)	N/A	28	219	N/A	20	0	N/A
60	Our Lady of Fatima Parish Community Centre	1.3 (M)	0.9 (M)	N/A	42	165	N/A	12	8	N/A
61	Cemetery (Brook St)	N/A	0.2 (F)	N/A	N/A	179	N/A	N/A	45	N/A
62	Our Lady of Fatima Catholic Parish	1.2 (M)	0.8 (M)	N/A	71	194	N/A	10	9	N/A
63	Harmon Seaside Links	9.9 (B)	3.4 (M)	N/A	150	240	N/A	16	49	N/A



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		PaP	T-Line	Codroy	PaP	T-Line ⁹	Codroy	PaP	T-Line	Codroy
64	Our Lady of Mercy Heritage Church	2.8 (M)	2.0 (M)	N/A	5	322	N/A	0	0	N/A
65	St Stephen Roman Catholic Church	7.5 (B)	2.1 (M)	N/A	114	263	N/A	14	22	N/A
66	Stephenville Elementary	7.4 (B)	2.0 (M)	N/A	83	239	N/A	14	15	N/A
67	Stephenville Middle School	7.8 (B)	2.2 (M)	N/A	92	241	N/A	8	18	N/A
68	Stephenville Harmon Ball Diamond	8.1 (B)	2.2 (M)	N/A	92	195	N/A	8	5	N/A
69	Piccadilly Central High	1.1 (M)	1.7 (M)	N/A	56	17	N/A	27	2	N/A
70	United Pentecoastal Church	6.6 (B)	1.2 (M)	N/A	89	231	N/A	9	1	N/A
71	Piccadilly Roman Catholic Cemetery	1.1 (M)	2.0 (M)	N/A	58	16	N/A	28	12	N/A
72	United Church of Canada	7.0 (B)	1.5 (M)	N/A	17	198	N/A	0	0	N/A
73	Legion Memorial	7.7 (B)	2.0 (M)	N/A	84	202	N/A	8	6	N/A
74	Kippens Recreation Complex	5.3 (M)	1.2 (M)	N/A	129	317	N/A	24	10	N/A
75	Zenzille RV Campground	4.8 (M)	1.4 (M)	N/A	57	307	N/A	0	4	N/A
76	College of the North Atlantic	8.1 (B)	1.7 (M)	N/A	92	177	N/A	7	1	N/A
77	Blanche Brook Park	7.4 (B)	1.9 (M)	N/A	42	185	N/A	9	2	N/A
78	Stephenville High School	6.2 (M)	0.8 (F)	N/A	18	213	N/A	5	0	N/A
79	Anglican Church (Stephenville)	6.8 (B)	1.3 (M)	N/A	70	218	N/A	0	0	N/A
80	Walk-A-Ways Nature Trail	8.1 (B)	1.4 (M)	N/A	95	248	N/A	6	7	N/A
81	Dan McIssac Baseball Field and Walking Track	6.4 (M)	3.1 (M)	N/A	120	193	N/A	35	11	N/A
82	Our Lady of Mercy Church Complex and Museum	4.3 (M)	2.1 (M)	N/A	113	50	N/A	18	3	N/A



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		PaP	T-Line	Codroy	PaP	T-Line ⁹	Codroy	PaP	T-Line	Codroy
83	St Thomas Aquinas Elementary School	6.3 (M)	2.9 (M)	N/A	125	216	N/A	23	8	N/A
84	Saint James Anglican Cemetery	6.2 (M)	3.1 (M)	N/A	132	216	N/A	43	11	N/A
85	Saint James Anglican Church	6.1 (M)	3.1 (M)	N/A	133	213	N/A	44	11	N/A
86	Maria Regina Catholic Church	6.1 (M)	2.8 (M)	N/A	130	223	N/A	0	0	N/A
87	Mayfield Soccer Pitch	7.8 (B)	1.1 (M)	N/A	0	27	N/A	0	4	N/A
88	The Gravels/Danny Walking Trail (trailhead parking and overlook)	5.4 (M)	3.1 (M)	N/A	27	153	N/A	20	6	N/A
89	Pine Tree Trail	5.6 (M)	2.4 (M)	N/A	119	209	N/A	0	0	N/A
90	Danny's Walking Trail	5.2 (M)	3.0 (M)	N/A	25	115	N/A	20	6	N/A
91	Stephenville Dome	8.0 (B)	0.9 (M)	N/A	0	168	N/A	0	8	N/A
92	Hatcher Field	7.9 (B)	0.8 (F)	N/A	0	171	N/A	0	18	N/A
93	Lewis Hills International Appalachian Trail	6.6 (M)	0.7 (F)	N/A	9	65	N/A	2	1	N/A
94	Scott Pollard Memorial Trail	14.2 (B)	4.0 (M)	N/A	0	36	N/A	0	0	N/A
95	École Sainte-Anne	1.2 (M)	N/A	N/A	72	N/A	N/A	36	N/A	N/A
96	Saint Anne Roman Catholic Church	1.3 (M)	N/A	N/A	73	N/A	N/A	53	N/A	N/A
97	Gallants/Hillside Interfaith Cemetery	8.8 (B)	0.5 (F)	N/A	88	228	N/A	12	27	N/A
98	Piccadilly Small Craft Harbour	3.0 (M)	4.7 (M)	N/A	59	48	N/A	33	4	N/A
99	Whaleback Nordic Ski Club	8.0 (B)	0.9 (F)	N/A	38	94	N/A	0	0	N/A
100	Piccadilly Park	3.3 (M)	N/A	N/A	107	N/A	N/A	45	N/A	N/A
102	Three Rock Cove Community Center	1.4 (M)	8.2 (B)	N/A	82	228	N/A	81	27	N/A
103	Saint Philomena's Chapel	1.3 (M)	N/A	N/A	83	N/A	N/A	14	N/A	N/A



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		PaP	T-Line	Codroy	PaP	T-Line ⁹	Codroy	PaP	T-Line	Codroy
	Project									
104	Three Rock Cove Roman Catholic Cemetery	1.8 (M)	N/A	N/A	0	N/A	N/A	0	N/A	N/A
105	RC Cemetery (Lourdes)	3.5 (M)	N/A	N/A	143	N/A	N/A	46	N/A	N/A
106	Our Lady of Lourdes Parish Auditorium	3.0 (M)	N/A	N/A	114	N/A	N/A	43	N/A	N/A
107	Lourdes Elementary School	2.8 (M)	N/A	N/A	108	N/A	N/A	55	N/A	N/A
108	Our Lady of Lourdes Parish Grotto	2.9 (M)	N/A	N/A	113	N/A	N/A	54	N/A	N/A
109	Fox Island and Point as Mal Community Center	5.4 (M)	N/A	N/A	167	N/A	N/A	26	N/A	N/A
110	Trans-Canada Highway	N/A	0.0 (F)	0.6 (F)	N/A	365	92	N/A	41	67

Notes:

** PaP = Port au Port wind farm; T-Line = 230 kV Transmission Line; Codroy = Codroy wind farm; F = foreground; M = middleground; B = background; N/A = Not Applicable. Notes: 1.) The total number of structures identified above for each resource has been calculated based on the highest total within a 50 m radius of each, 2) Resources 14-16, 18-21 and 101 have been removed from the Table as they ultimately fell outside the finalized VSA, 3) Number of actually visible structures may vary based on the available data in completing the viewsheds, and 4) due to the linear nature of the Trans-Canada Highway, structure counts may not be at the identified resource location.



7.0 Visual Simulation Methodology and Analysis

7.1 Site Reconnaissance

Stantec conducted a field survey to collect photographs of views toward the Project from select public accessible locations (also referred to as Key Observation Points [KOPs]) during May 2023. Locations were identified using the screened viewshed maps, identified resources, WEGH2 input, and judgements based on the actual site conditions found during the visit (Appendix D). Only locations available to the general public were photographed.

All photographs were taken using a digital camera with a lens setting of 50 millimetre (mm)¹⁰ to simulate normal human eyesight relative to scale. Once the photograph was taken, its precise coordinates were recorded in the field using a handheld global positioning system (GPS) unit or with ESRI Field Maps (an application that uses GPS technology to identify one's position). In addition to the collection of photographs, the completed field survey offered an opportunity to review the viewshed from public locations and verify or identify resources.

7.2 Selection of Key Observation Points

The photos from the visited KOPs were then reviewed and a subset was then selected by WEGH2 for further analysis by completing photographic simulations. Stantec completed simulations from 21 KOPs to demonstrate how the Project will appear from the locations identified in Table 5. The simulated KOPs may be found in Appendix C.

¹⁰ High resolution cameras with a lens setting of 50+/- mm were used in capturing Project photography. The use of a 50 mm lens setting is an industry-accepted standard for illustrating the representation of what the human eye sees in focus (the "field of vision") within a still or static view.



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Table 5 Photographic Simulation KOP Location

KOP / Figure Number	Location	Resource Number (as applicable)	Orientation of View	Project Illustrated
9 / C2	Hidden Falls	54	Northwest	Port au Port Wind Farm
11a / C3	Route 460 (Sheaves Cove)	–	East	Port au Port Wind Farm and 230 kV Transmission
30 / C4	Route 463	–	South	Port au Port Wind Farm
32 / C5	Clam Bank Cove Road (Lourdes)	–	Southwest	Port au Port Wind Farm
36 / C6	Piccadilly Park Beach	100	West	Port au Port Wind Farm
49 / C7	Route 460 (Felix Cove)	–	Northwest	Port au Port Wind Farm and 230 kV Transmission
55 / C8	Danny's Walking Trail	90	Northeast	Port au Port Wind Farm and 230 kV Transmission
61 / C9	Boswarlos Peninsula	–	Southwest	Port au Port Wind Farm and 230 kV Transmission
75 / C10	Islands Pond Drive (Kippens)	–	North	Port au Port Wind Farm and 230 kV Transmission
84 / C11	Massachusetts Drive (Stephenville)	57/63	Northwest	Port au Port Wind Farm and 230 kV Transmission
85 / C12	Joey's Lookout (Stephenville)	58	Northeast	Port au Port Wind Farm and 230 kV Transmission
T2 / C14	Stephenville Dome (Stephenville)	91	Northeast	230 kV Transmission
T4 / C15	Stephenville (Route 490)	–	East	230 kV Transmission
T9 / C16	Trans-Canada Highway	110	West	230 kV Transmission
T21 / C17	Trans-Canada Highway	110	East	230 kV Transmission
C8 / C19	Trans-Canada Highway	110	West	Codroy Wind Farm
C15 / C20	Codroy Pond	–	Southeast	Codroy Wind Farm
C16 / C21	Trans-Canada Highway	110	North	Codroy Wind Farm and 230 kV Transmission
C23 / C22	Trans-Canada Highway	110	Northeast	Codroy Wind Farm and 230 kV Transmission
C25 / C23	Route 405 (St. Fintan's)	–	Southwest	Codroy Wind Farm
C26 / C24	Route 405 (Highlands)	–	South	Codroy Wind Farm



7.3 Simulation Methodology

The photographs from the selected KOPs were used to generate a simulation of the Project as proposed (based on available information). Each completed simulation provides a representation of the location, scale, and visual appearance of the features associated with either the Port au Port wind farm, Codroy wind farm, and/or the 230 kV Transmission Line. The simulations were developed through an objective analytical and computer-modeling process and are accurate within the constraints of the available site and alternative data (a 3-dimensional [3D] computer model was created using a combination of AutoCAD files and GIS layers and exported to Autodesk's 3Ds Max for production). Design related information—consisting of preliminary site layout data (includes pole placement, access roads, limits of vegetation clearing, etc.), structure specifications, DEM/DSM data—were used as a platform from which digital models were created.

For each simulated KOP, the following set of images are provided in Appendix C:

- The existing view.
- Proposed Conditions.

7.4 Discussion of Visual Simulations

To illustrate how the Project will be viewed from within the landscape, a series of simulations were completed to represent both proposed wind farms and the 230 kV line. Representative locations were selected (Table 5) and summarized below.

7.4.1 Port au Port Wind Farm

The completed photographic simulations illustrate that some portion of the proposed turbines of the Port au Port wind farm will be visible throughout the VSA. These locations correspond with areas showing visibility on the viewshed mapping. Access to foreground locations is limited and would not be a typical representation of the wind farm. The locations selected for simulation include middleground and background views where viewer position, angle of view, and topography play a role in potential visibility. From middleground views, a substantial portion of individual turbines, those found to be closer to the observer, may be seen above intervening landform and vegetation. As the turbines recede into the back, less of the turbines (e.g., turbine blade) will be visible and its overall appearance will be perceived as being a smaller element within the landscape (e.g., Appendix C, Figure C4). At greater distances, or within background views, the turbines would appear small and occupy a smaller portion of the overall view (e.g., Appendix C, Figures C3, C11 and C13). They may also appear silhouetted against the sky.

Screening caused by vegetation and landforms can provide screening of both near and distant turbines. Intervening landform and vegetation would prevent many long-distance views (background views) or may result in seeing a small portion of the proposed turbines (e.g., Appendix C, Figure C2).

Based on the simulations, it is anticipated that many residents, or those visiting the Peninsula, will mostly encounter views of the turbines within the middleground and background distance zones. Typical views for the general public will generally occur along Routes 460 and 463. Simulated locations presented in



Appendix C, Figures C3, C4, C5, and C7 are representative of such views. Those located on the eastern coastline of the Peninsula may also view those turbines along Table Mountain (Appendix C, Figure C8). However, it will be contingent on the direction of view and location of the observer.

Within the community of Stephenville, Project visibility will vary greatly depending on where it is observed. For instance, if one is located within the downtown area, it is likely that only discreet, or views of limited turbines will be available. However, if an observer is toward the edge of the community with an open view, it is possible to view the turbines located on the Table Mountain (Appendix C, Figure C10). If one is located near the Airport, it is possible to have open views of the Table Mountain turbines (Appendix C, Figure C11), and possibly to those on the Peninsula should it be a clear day and a direct line-of-sight is available. However, as illustrated in the simulations, the turbines will a) appear small, b) be seen only as a part of a larger landscape setting, and c) can be affected by atmospheric conditions.

7.4.2 230 kV Transmission Line

The completed photographic simulations illustrate that the proposed transmission line will often be visible from locations where structures from existing lines are already visible. At vantage points, where there is an unobstructed view of the proposed transmission structure(s) all or most of the structure will be visible, this will likely occur when the Project is in the foreground. Even with exposed foreground views, visibility of structures is further reduced by a number of factors including, but not limited to, vegetation (e.g., Appendix C, Figures C10, C14 and C16), distance (e.g., Appendix C, Figures C7, C8, C11, and C22), and terrain (e.g., Appendix C, Figures C7 and C9). Many of these same factors will also reduce potential visibility from middleground views.

Typical views for a greater number of the public will generally occur along the Trans-Canada Highway, and within Stephenville. It is also possible to view both the proposed transmission line and the Port au Port wind farm (Appendix C, Figures C7, C8, C9, and C10) and the Codroy wind farm (Appendix C, Figure C22). Where the transmission line and turbines are visible, the visibility of the transmission structures are seen as a subordinate element when compared to the size of the turbines. Visibility of the transmission structures is also impacted by their slender appearance, topography, vegetation, distance, and other factors.

7.4.3 Codroy Wind Farm

The completed photographic simulations illustrate that some portion of the proposed Codroy wind farm turbines will be visible along the VSA bisecting the Trans-Canada Highway corridor and coastline communities located to the north. These locations correspond with areas showing visibility on the viewshed mapping. Access to foreground locations is limited and would not be a typical representation of the wind farm. The locations selected for simulation include middleground and background views where viewer position, angle of view, and topography play a role in potential visibility. From middleground views, it may be possible to view a small portion or a substantial portion of individual turbines. Those turbines found to be closer to the observer may appear larger than those receding into the back. At greater distances, or within background views, the turbines would appear as smaller elements within the landscape and occupy a smaller portion of the overall view. They may also appear silhouetted against the sky.



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Vegetation and landforms can screen near and distant turbines. The intervening landforms and vegetation would prevent many long-distance views (background views) or may result in seeing a small portion of the proposed turbines (e.g., Appendix C, Figure C20).

As illustrated in Appendix C, Figure C22, it will be possible for those travelling along the Trans-Canada Highway to view both the proposed turbines and 230 kV transmission line. While the turbines are in an elevated position, the transmission structures run adjacent to the existing and except where they may be cresting a landform, from this position they are seen against the vegetated mountain ridge.

Based on the simulations, it is anticipated that many tourists and residents will likely encounter views of the turbines within the middleground and background distance zones. Typical views for a greater number of the public will generally occur along the Trans-Canada Highway, and communities such as the Highlands and Maidstone. The simulated views for this wind farm are representative of such views. Individuals living in these communities may view most of the turbines located along the Anguille Mountain ridge, with portions of additional turbines visible further in the distance (Appendix C, Figures C23 and C24).



8.0 Considerations that Can Affect Potential Visual Impact

When considering the potential visual impact of the Project, many factors beyond what has been identified above could affect visibility, or perceived visibility. These factors include but may not be limited to the following.

8.1 Duration or Frequency of the View

The circumstances and length of time where a view is encountered can dictate the importance of a specific view. For instance, a view may be encountered while either stationary or moving.

A stationary view is one from a fixed location such as a residential structure or a recreational facility (e.g., being at a playground, watching a baseball game). These settings would result in a view of an extended time.

A moving view is one that may be experienced in passing, such as when an observer is in a vehicle travelling to a destination. This may result in a more transient view of short duration where the available time for an observer to cognitively comprehend or even experience a particular view will be restricted. The view(s) experienced will also likely be varied as the occupant may be exposed to different landscape settings and stimulus.

8.2 Atmosphere Conditions and Viewer Activities

Atmospheric conditions can play a role in Project visibility and activities of potential observers. Conditions such as haze, fog, and precipitation (e.g., rain, snow) can affect visibility and should be considered when evaluating the overall impact of the Project. Also, light conditions should be contemplated as the Project's intensity, reflection, and shadows can vary based on the time of day and/or year.

Example Cloud Cover and Visibility:

While summer months may be sunny and experience clear visibility, the fall, winter, and spring months could be overcast or cloudy. Cloudy conditions could result in decreasing visibility, particularly if they are low lying and covering higher elevations. The graph in Figure 3 below illustrates the amount of cloud cover experienced at the Airport over the last year (from weatherspork.com). This representative graph demonstrates that the surrounding area would experience increasing cloud cover during the spring/fall/winter months. During the winter, the greatest chance of overcast or mostly cloudy conditions is seen on January 29th where it is 84 percent. On the contrary, the clearest day of the winter is on December 2nd, where clear, mostly clear, or partly cloudy conditions exist 30 percent of the day.



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 August 2023

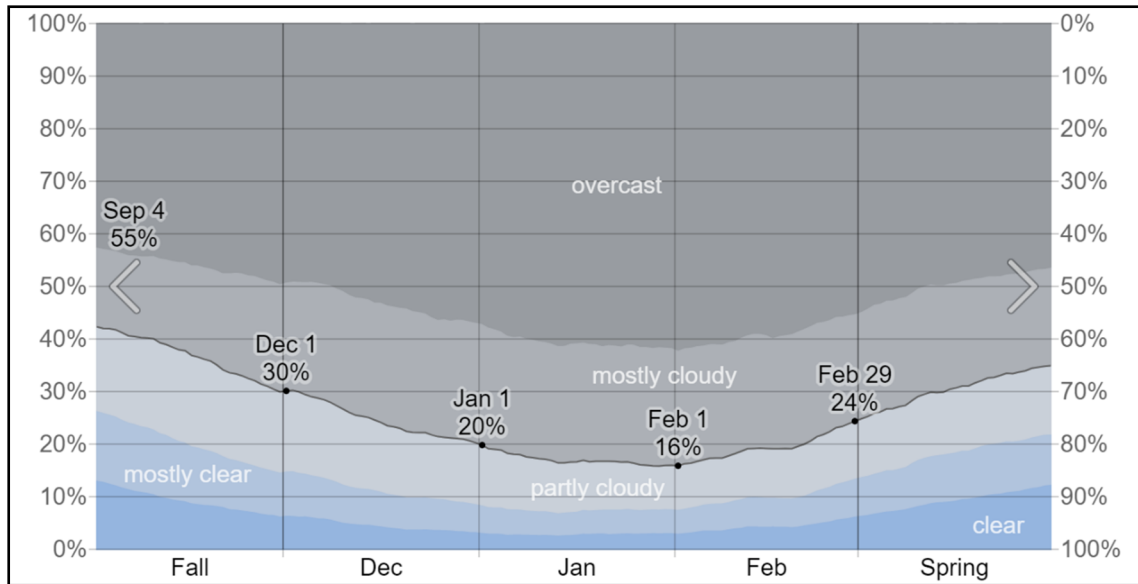


Figure 3 Winter Cloud Cover, Stephenville International Airport

When considering that these months experience cloud cover and precipitation, one’s ability to view the distant landscape will be limited to varying degrees.

The representative graph in Figure 4 below (from worldweatheronline.com) illustrates average visibility in Stephenville over the last year. The graph shows that visibility decreases outside the summer months and was, on average, only 6.5 km during November 2022 and 6.6 km during January 2023.

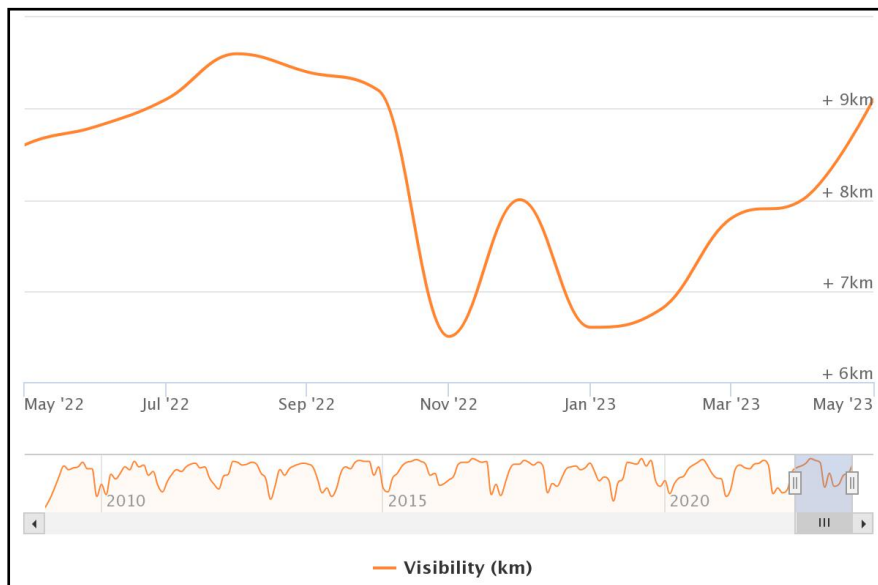


Figure 4 Stephenville Visibility



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The activities being undertaken by an individual may also affect the visibility of a Project. Atmospheric conditions may limit outdoor activities, so the potential for Project observation could be limited during such events. For instance, if it is raining or snowing, this may keep individuals indoors therefore reducing the opportunity to view the surrounding landscape. Activities can also encourage or discourage a viewer to observe the surrounding landscape. If one is at a scenic overlook, the individual may consider the quality of the view, while someone watching or participating in a sporting activity may not consider the surrounding landscape to be part of one's experience.



9.0 Conclusion and Discussion

This Technical Report reviews the visibility of up to 314 Siemens Gamesa CG 6.6-155 turbines, at 198.5 m in height (blade-tip in upright position) which is considered to be worst case (i.e., highest potential visibility). Should less turbines, or a smaller turbine, be used, the potential visibility and/or perceived impact discussed in this report would be reduced. Further reducing potential visibility is the existing condition that a substantial portion of the VSA is not accessible to the general public.

9.1 Viewshed Summary

The screened viewshed maps clearly indicate that one or more of the proposed turbines or transmission structures will theoretically be visible throughout the VSA.

- Port au Port wind farm: As identified in Table 1, visibility of the wind farm will only be available from 25.9 percent of the lands found on the Peninsula and mainland. This percentage does not account for those lands that are not available to the general public (private or Provincial owned). In consideration of this, the opportunity to be in areas where the turbines are visible, is reduced even further.
- 230 kV Transmission Line: As identified in Table 2, visibility of the wind farm will only be available from 16.3 percent of the lands found on the Peninsula and mainland. This percentage does not account for those lands that are not available to the general public (private or Provincial owned). In consideration of this, the opportunity to be in areas where the structures are visible, is reduced even further. There are instances where the proposed transmission line will be seen in conjunction with the turbines. These occurrences can be seen when the components are in close proximity.
- Codroy wind farm: As identified in Table 3, visibility of the wind farm will only be available from 16.6 percent of the lands found on the mainland. This percentage does not account for those lands that are not available to the general public (private or Provincial owned). In consideration of this, the opportunity to be in areas where the turbines are visible, is reduced even further.

When looking holistically at the VSA's, approximately 81.3 percent of the land area will likely not have visibility of the Project. Although possible in locations, it is likely to view a smaller grouping of turbines or transmission structures versus a large, expansive number.

The intent of the maps contained in Appendix B is to highlight geographic areas of visibility, however as described above, many factors could minimize visibility or potential impact.

Port au Port and Codroy Wind Farms

Views of turbines will be available from many roadways (e.g., Routes 405, 460, 452, 463, and the Trans-Canada Highway) found within the VSA. This will occur where roadside vegetation is lacking or when viewed travelling along the coastline with direct axis views to the distant landscape. Views of turbines will be of the long distant variety (middleground to background zones) and will likely be fleeting as the observers pass in vehicles, or for a relatively short duration. When visible, the Project may frequently appear and disappear behind intervening foreground landforms, vegetation, and structures as viewers move about the area.



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There are few instances where turbines will be located on both sides of the road, namely Route 463 (Piccadilly) and the Trans-Canada Highway (area of Codroy Pond). It is possible that one may experience a view that exceeds 180 degrees, when this does occur it is expected to be relatively short in duration for those travelling these corridors.

In many of the communities that are found along the roads (e.g., DeGrau, Highlands, Mainland, and Sheaves Cove), visibility has been identified on the maps; however, it is important to recognize that most dwellings have been sited to have primary views of the Gulf of St. Lawrence, rather than inland.

The screened viewshed mapping highlights the possibility that some portion of the Port au Port wind farm will be visible within the Town of Stephenville. It is likely that most views will be filtered or framed as visibility will likely be seen through foreground vegetation and buildings (residential, commercial, industrial, etc.). Direct views are more likely to be available on the edge, or outskirts, of the Town as localized structures and trees are less likely to provide a visual barrier. While typical views found within the Town may be of a limited number of turbines, there are long distant open views of the turbines available from the Airport and Port (Appendix C, Figures C11 and C12).

Observers driving within the VSAs will notice that structures will appear and disappear behind intervening landforms and vegetation as they travel.

230 kV Transmission Line

Views of the 230 kV transmission line will be available from many roadways, mainly along the Trans-Canada Highway, but there are opportunities for others to have visibility, including where the transmission line crosses roadways (e.g., Routes 403, 460, 461, 462, 463, 490, Mand Road, Seal Cove Road, Steel Mountain Road, and the Trans-Canada Highway). When the transmission line bisects a road, it is likely that open roadside and foreground views will be available; middleground open, filtered or framed views will likely make up most views along the Trans-Canada Highway.

It is likely a relatively small portion of the proposed line would be visible for a short duration as viewers pass in vehicles. While most views will likely consist of less than 10 structures, there may be select locations along the Trans-Canada Highway where a view will contain a lengthy portion of the transmission corridor (structure and RoW clearing). When reviewing the maps, it is important to remember that they do not consider atmospheric conditions and other factors that could affect visibility, such as:

- Observers in close proximity will notice that structures frequently appear and disappear behind intervening foreground landforms and vegetation as they travel.
- The slender monopole structure, and as distance increases between a structure and observer, visibility may be minimized.

The screened viewshed map shows that there may also be a possibility that the transmission line will be visible within the Town of Stephenville, roadway communities (e.g., Barachois Brook, Kippens, Piccadilly, Port au Port, St George's, and Stephenville Crossing), and roadside dwellings (where found). It is likely that most views will be filtered or framed views as visibility will be seen through foreground vegetation and buildings (residential, commercial, industrial, etc.). These may be the typical type of view(s) within communities with visibility; however, open views may be available from locations found along the edge of



select communities such as the Town and Kippens, where structures and vegetation may be lacking (e.g., dwelling abuts the transmission corridor). This will likely be available to few individuals.

It is important to recognize when reviewing the viewshed mapping that when visibility of the transmission line is potentially available, it is likely that an existing transmission line is also visible; this is particularly evident in the Port area and along the Trans-Canada Highway.

9.2 Character of View and affected viewers

Character of View

The character setting of the VSA varies - dramatic coastline, urban and rural communities, industrial, mining, forested/mountainous, transportation, etc. Although the VSA is varied, it is decidedly rural and undeveloped.

When visible, the vertical form of the proposed turbines will introduce a new element into the landscape; sometimes the concentration of the elements may be evident. Meanwhile, the proposed 230 kV transmission line will be seen, in many instances, along with the existing lines which are already visible. In this case, the transmission line may be seen as an incremental increase of visibility. The Project will create the need for clear-cutting of trees and will most likely be visible along the Trans-Canada Highway where the line will run adjacent to the existing, or in certain instances where it may diverge from the existing corridor.

The topography with the addition of the forested areas, and siting of the Project, should be effective in reducing the potential visibility of the Project. This should be true in terms of how much each structure is visible from any given point in the VSAs and how many structures can be viewed from any one point in the study area. However, the proposed Project, namely the turbines, would result in the tallest visible elements within view and may appear disproportionate to other elements in the immediate landscape.

Affected Viewers

With the largest community in the VSA being the Town of Stephenville (population of 6,600), The VSAs have a relatively small overall population and can be considered rural.

The reaction, or sensitivity, by individual observers to the visual quality of the surrounding landscape will be variable (e.g., a view to the St. Lawrence Gulf may be held to a higher standard when compared to that of a highway). While local individuals may become accustomed to specific views of the Project, visitors will likely have some level of sensitivity to the local landscape and perceived visual quality; this will likely occur regardless of the duration or frequency of the exposure to the proposed Project.

While the transmission structures may be seen as a more accepted and familiar use, the introduction of the wind turbines will result in a new use that could lessen one's experience to the visual quality of the surrounding landscape. On the contrary, some may find the turbines visually interesting; it wouldn't be rare for tourists to visit an area to see the turbines within the landscape setting.



Reactions to Project views will likely be variable as perceptions of the visual impacts associated with wind energy development will vary to be positive or negative. These perceptions can change over time, in some cases possibly trending toward more positive perceptions after the installation of wind energy facilities (BOEM 2007).

9.3 Simulation Summary

Port au Port and Codroy Wind Farms

Photo simulations provided in Appendix C show that the turbines will be visible to varying degrees. Where there is an unobstructed view, most of the proposed structure(s) will be visible (e.g., Appendix C, Figures C4, C6, and C9). Even with exposed views, visibility of the structures can be further reduced by a number of factors including, but not limited to, vegetation, distance (e.g., Appendix C, Figures C3, C8, C11, and C12), and terrain (Appendix C, Figures C2, C10, and C20). Vegetation and landforms will provide screening of both near and distant views. Intervening landforms and vegetation will prevent many long distant views (background views).

230 kV Transmission Line

Photo simulations provided in Appendix C show that the transmission structures will be visible to varying degrees. Where there is an unobstructed view, most of the proposed structure(s) will be visible (e.g., Appendix C, Figure C15). Even with exposed views, visibility of the structures can be further reduced by a number of factors including, but not limited to, vegetation (e.g., Appendix C, Figures C10, C14, and C16), distance (e.g., Appendix C, Figures C7, C8, C11, and C22), and terrain (e.g., Appendix C, Figures C7 and C9). Foreground and middleground vegetation, and landforms will provide screening of views, both near and far, thus decreasing the number of long-distance views (background views). However, there may be limited opportunities to view a higher number of structures or observe the RoW or structures cresting landforms.



10.0 Conclusion

Modern wind turbines are large, manufactured, and highly visible structures. The siting of these turbines within a rural area (including coastal settings) provides the potential for incompatible views both near and far. Where a view of the turbines is available, they will at first be seen in contrast with the landscape, but over time will become an integral part of the recognized landscape. The level of impact will depend on the viewers' sensitivity to visual change among other influencing factors discussed in this report.

The 230 kV transmission line will likely not affect the overall aesthetic characteristics of the VSA as it is similar to the existing transmission lines that run adjacent to, or near, the Project. While the proposed monopole structures may appear different to those already visible, they will not be seen as out of place.

It is reasonable to expect that simple visibility of the Port au Port and Codroy wind farms, and 230 kV transmission line does not automatically translate to a visual impact nor imply a negative effect on the perceived beauty or enjoyment of visiting the VSAs. The level of perceived visual impact would ultimately be determined based on a viewers' sensitivity to the visual change discussed and illustrated in this Technical Report.



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PROJECT NUJIO'QONIK
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August 2023



Appendix A

Project Location

PROJECT NUJIO'QONIK
Visual Assessment Technical Report

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Proposed Project Features

- ★ Hydrogen / Ammonia Plant Location
- Transmission Line 230 kV
- ▭ Project Area

Other Features

- Transmission Line, Existing
- Trans-Canada Highway
- Road
- Contour (100 m)
- Watercourse
- Waterbody
- Wetland
- Forested Area



0 10 Kilometres
(At original document size of 8.5x11)
1:550,000

Notes

1. Coordinate System: NAD 1983 CSRS UTM Zone 21N
2. Data Sources: World Energy GH2, NRCan CanVec, OpenStreetMap
3. Background: NRCan CanVec



Project Location: Stephenville, NL
Prepared by NW on 2023-06-23
QR by AW on 2023-07-28

Client/Project: World Energy GH2
Project Nujio'qonik

Figure No.

A1

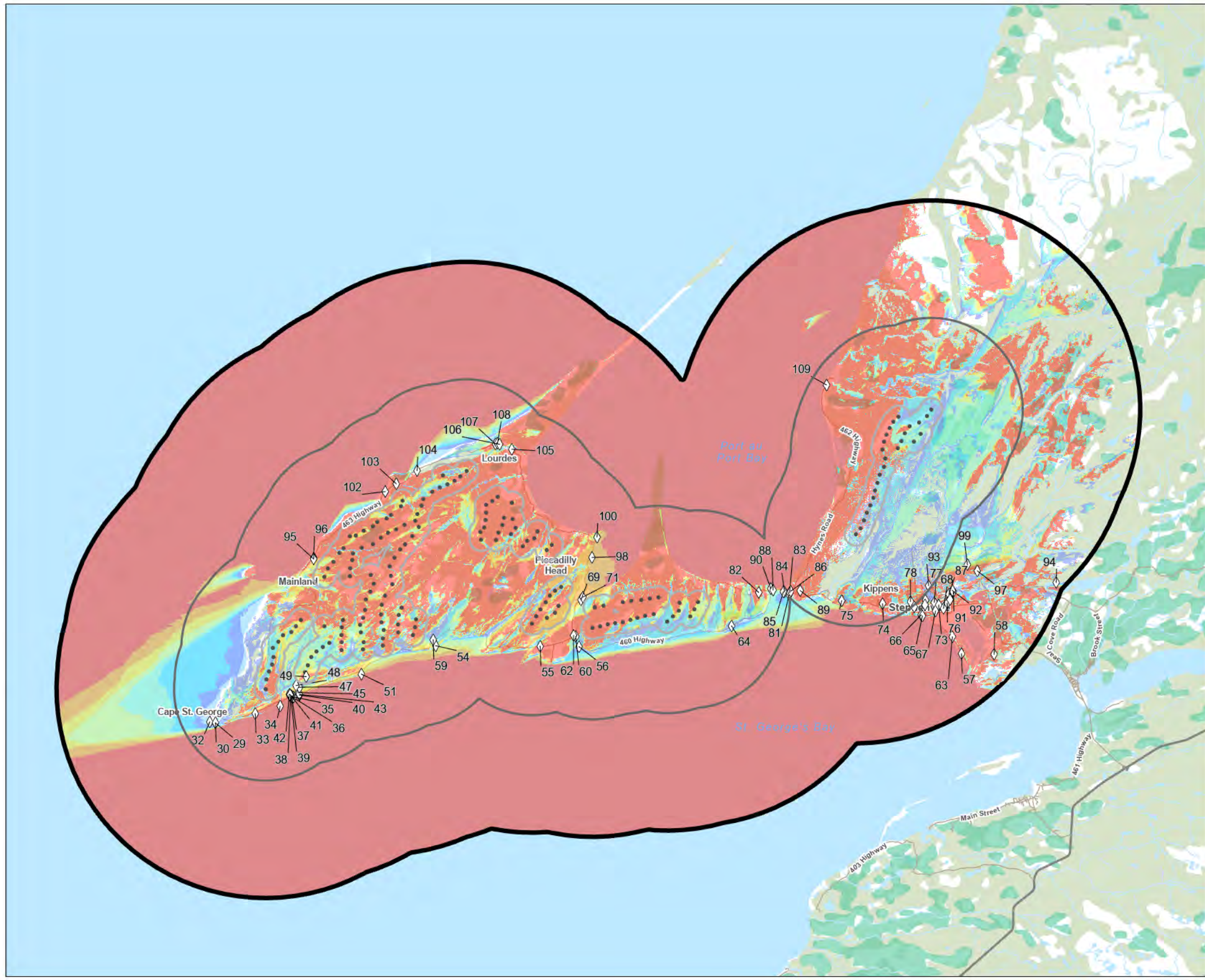
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Appendix B

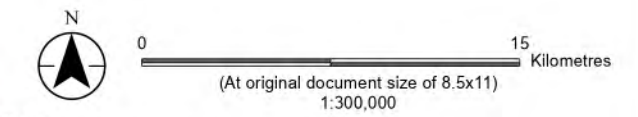
Viewshed Mapping

PROJECT NUJIO'QONIK
Visual Assessment Technical Report

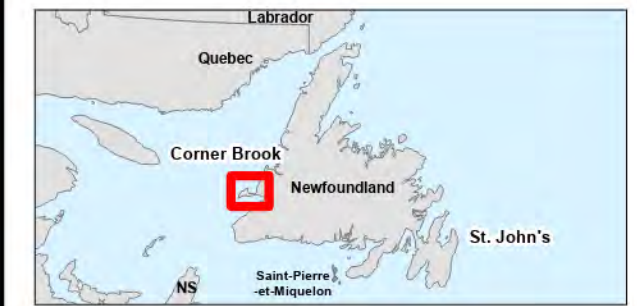
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- Turbine Location
 - ◇ Visually Sensitive Resource
 - Number of Visible Turbines**
 - None
 - 1 - 10
 - 11 - 20
 - 21 - 30
 - 31 - 40
 - 41 - 50
 - 51 - 60
 - > 60
- 0.8 km (Foreground Distance Zone)
 - 6.5 km (Middleground Distance Zone)
 - 15 km (Background Distance Zone)
- Other Features**
 - Trans-Canada Highway
 - Road
 - Watercourse
 - Waterbody
 - Wetland
 - Forested Area



- Notes**
1. Coordinate System: NAD 1983 CSRS UTM Zone 21N
 2. Data Sources: World Energy GH2, NRCan CanVec, OpenStreetMap
 3. Background: NRCan CanVec



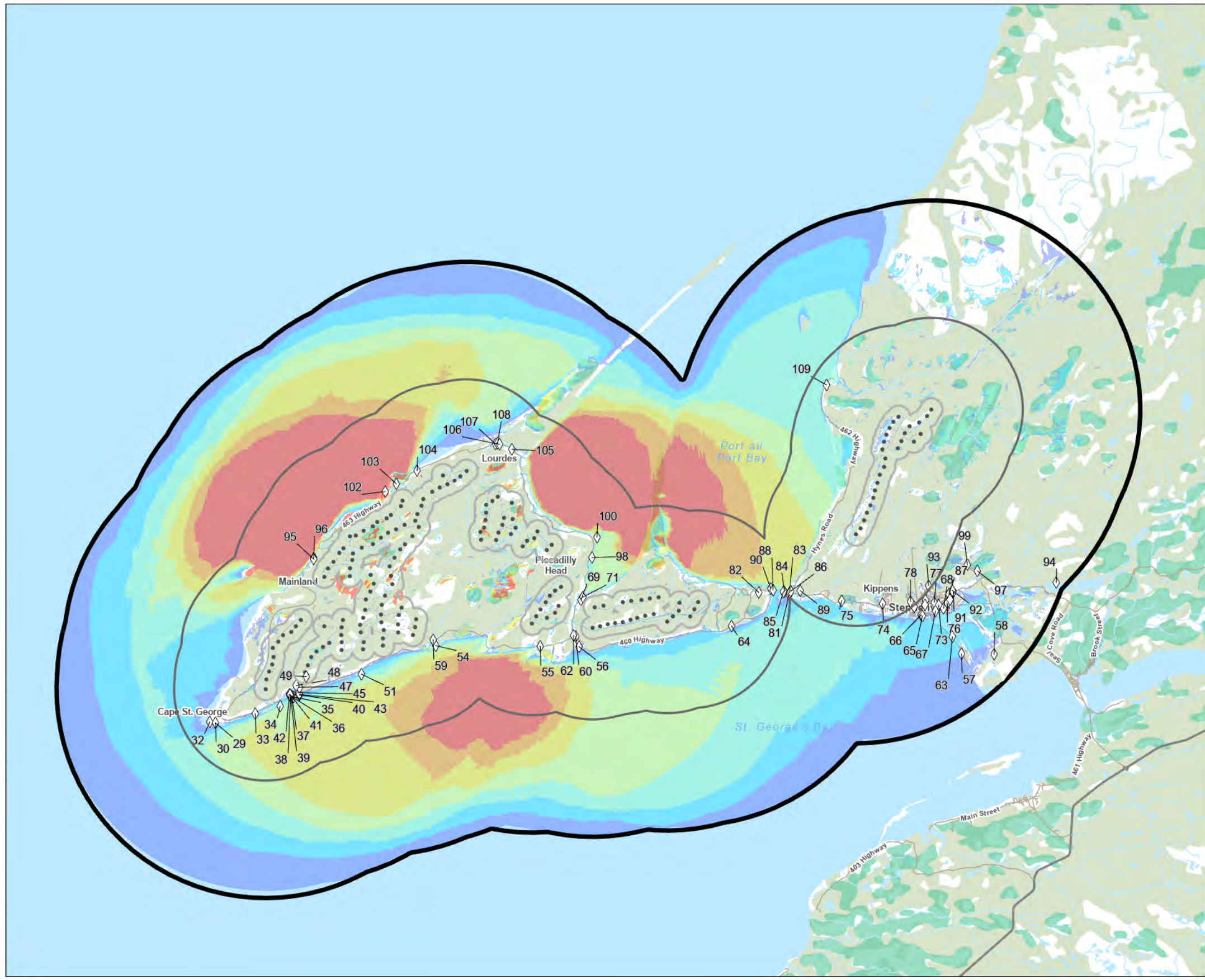
Project Location: Newfoundland, Canada
 Prepared by JBB on 7/28/2023
 QR by AW on 7/28/2023

Client/Project: Project Nujjo'qonik World Energy GH2
 121417233

Figure No.: **B1**
 Page 1 of 1

**Viewshed Analysis
 Bare Earth
 Port au Port Wind Farm**

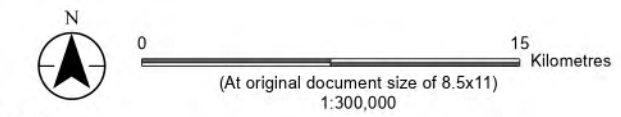
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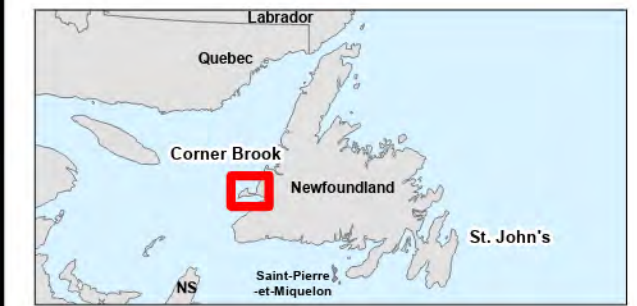
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- ◇ Visually Sensitive Resource
- Number of Visible Turbines**
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- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 60
- > 60

- 0.8 km (Foreground Distance Zone)
- 6.5 km (Middleground Distance Zone)
- 15 km (Background Distance Zone)

- Other Features**
- Trans-Canada Highway
 - Road
 - Watercourse
 - Waterbody
 - Wetland
 - Forested Area



- Notes**
1. Coordinate System: NAD 1983 CSRS UTM Zone 21N
 2. Data Sources: World Energy GH2, NRCan CanVec, OpenStreetMap
 3. Background: NRCan CanVec



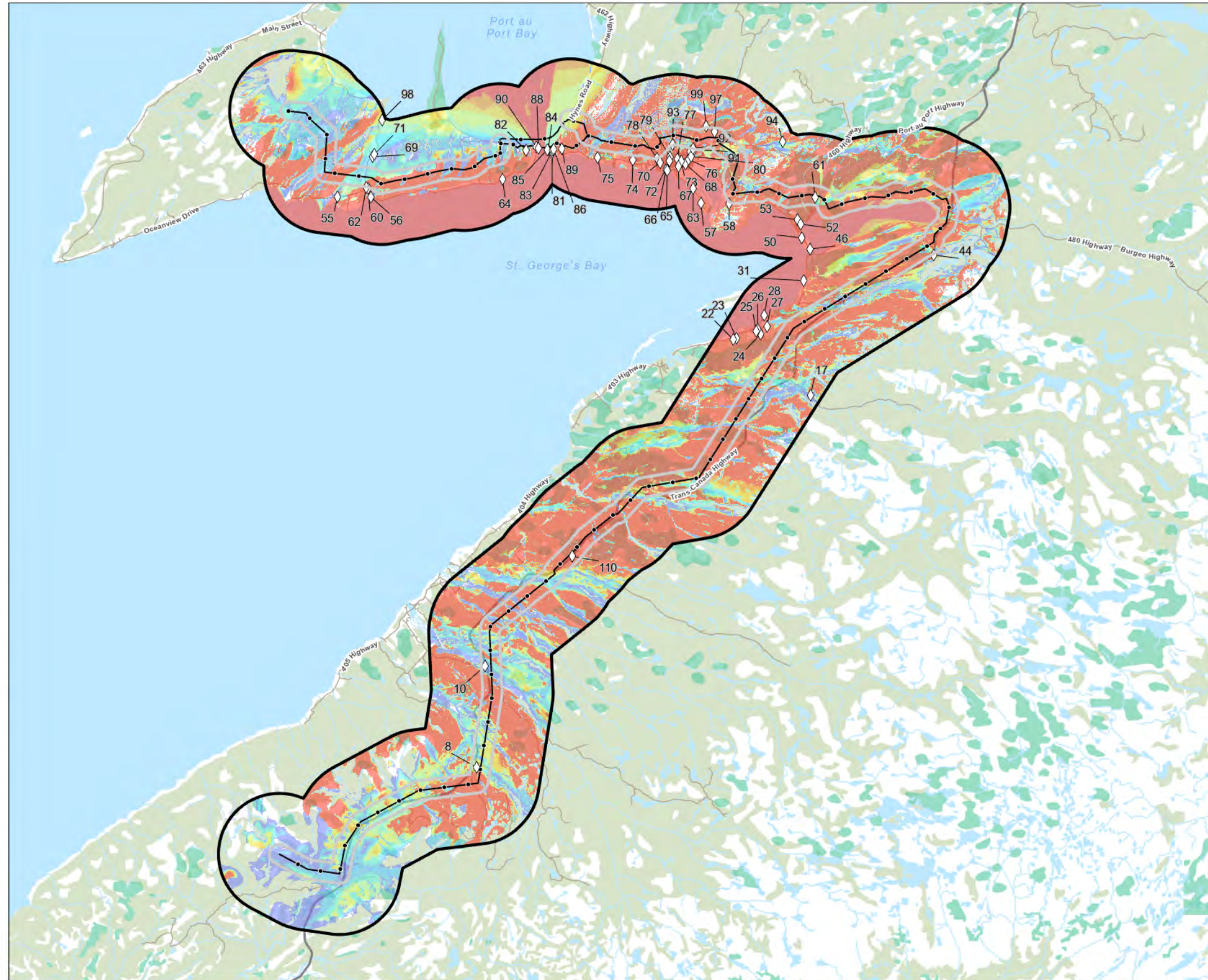
Project Location: Newfoundland, Canada
Prepared by JBB on 7/28/2023
QR by AW on 7/28/2023

Client/Project: Project Nujjo'qonik World Energy GH2
121417233

Figure No.: **B2**
Page 1 of 1

**Viewshed Analysis
Screened
Port au Port Wind Farm**

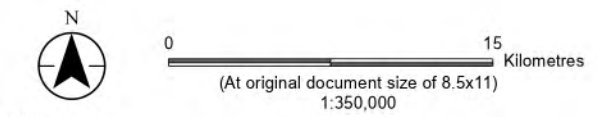
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- Transmission Line 230 kV
- ◇ Visually Sensitive Resources
- Number of Visible Transmission Line Poles**
- None
- 1 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 60
- 61 - 70
- > 70

- 0.8 km (Foreground Distance Zone)
- 5 km (Background Distance Zone)

- Other Features**
- Trans-Canada Highway
 - Road
 - Watercourse
 - Waterbody
 - Wetland
 - Forested Area



- Notes**
1. Coordinate System: NAD 1983 CSRS UTM Zone 21N
 2. Data Sources: World Energy GH2, NRCan CanVec, OpenStreetMap
 3. Background: NRCan CanVec



Project Location
Newfoundland, Canada

Prepared by JBB on 7/28/2023
QR by AW on 7/28/2023

Client/Project
Project Nujo'qonik
World Energy GH2

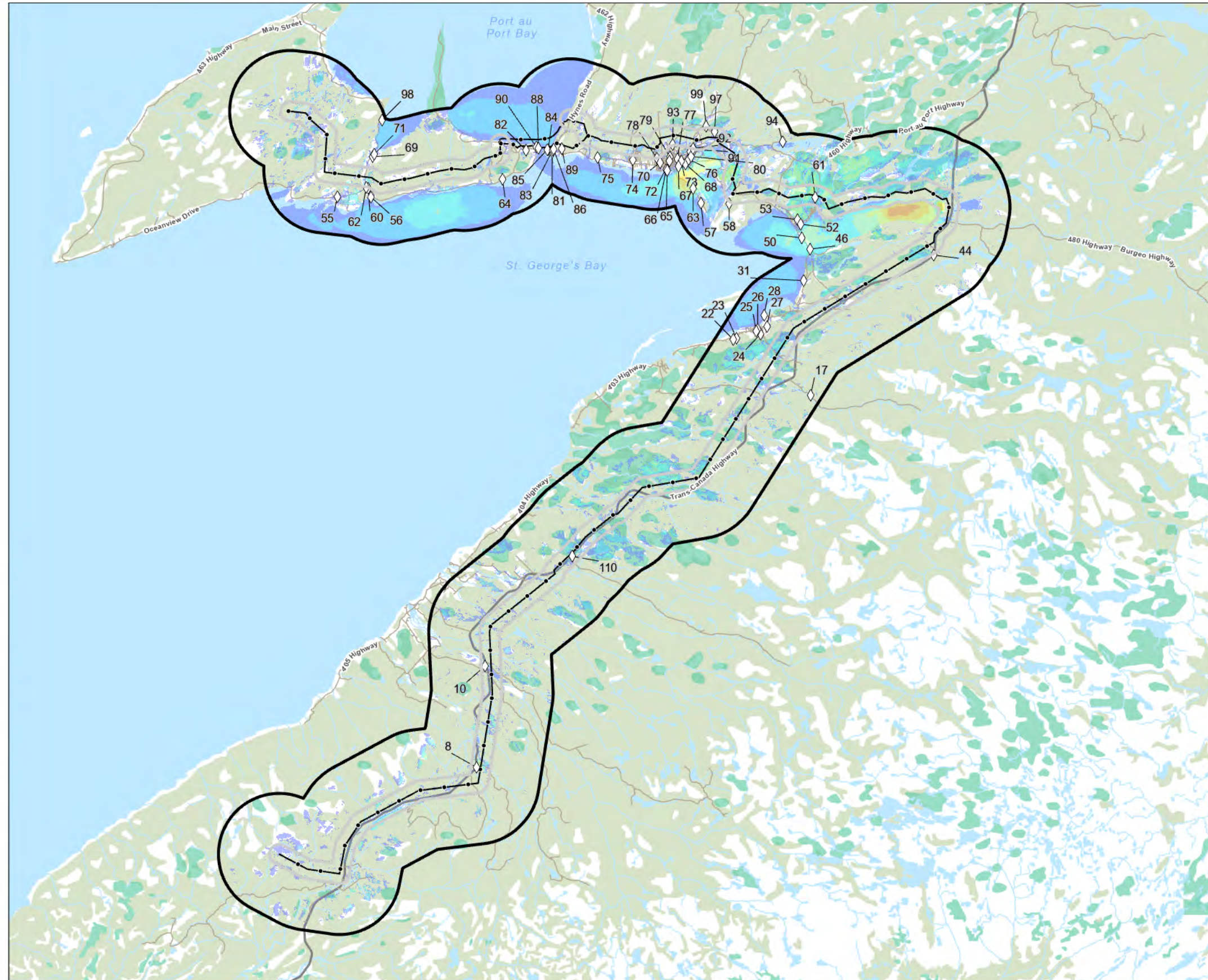
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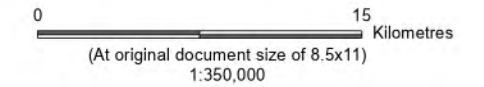
Page 1 of 1

Title
Viewshed Analysis
Bare Earth
230 kV Transmission Line

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- Transmission Line 230 kV
 - ◇ Visually Sensitive Resources
 - Number of Visible Transmission Line Poles**
 - None
 - 1 - 10
 - 11 - 20
 - 21 - 30
 - 31 - 40
 - 41 - 50
 - 51 - 60
 - 61 - 70
 - > 70
- 0.8 km (Foreground Distance Zone)
 - 5 km (Background Distance Zone)
- Other Features**
 - Trans-Canada Highway
 - Road
 - Watercourse
 - Waterbody
 - Wetland
 - Forested Area



Notes

1. Coordinate System: NAD 1983 CSRS UTM Zone 21N
2. Data Sources: World Energy GH2, NRCan CanVec, OpenStreetMap
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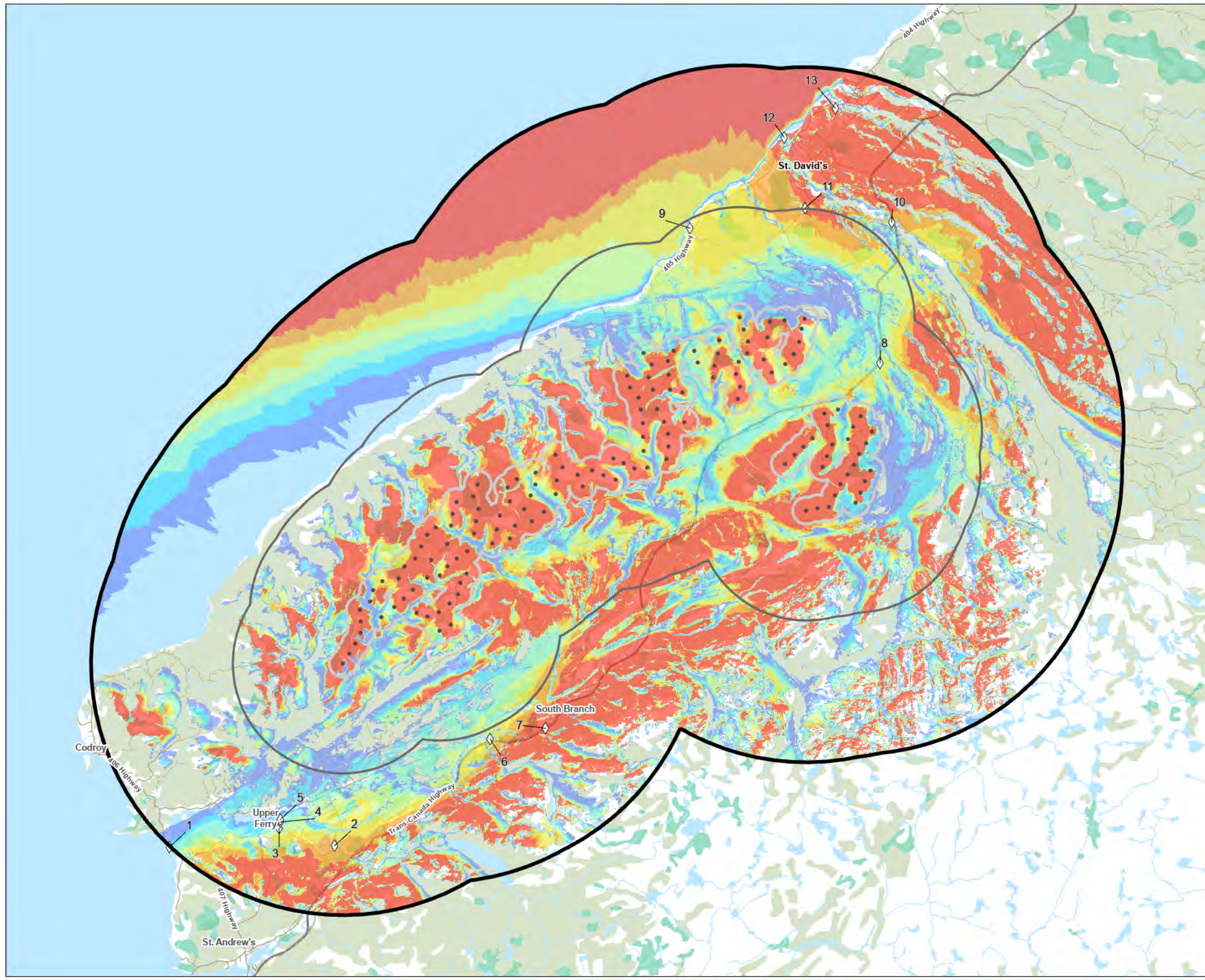
Project Location: Newfoundland, Canada
Prepared by JBB on 7/28/2023
QR by AW on 7/28/2023

Client/Project: Project Nuji'o'qonik World Energy GH2
121417233

Figure No.: **B4**
Page 1 of 1

**Viewshed Analysis
Screened
230 kV Transmission Line**

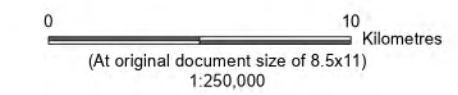
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- Turbine Location
- ◇ Visually Sensitive Resources
- Number of Visible Turbines**
- None
- 1 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 60
- > 60

- 0.8 km (Foreground Distance Zone)
- 6.5 km (Middleground Distance Zone)
- 15 km (Background Distance Zone)

- Other Features**
- Trans-Canada Highway
 - Road
 - Watercourse
 - Waterbody
 - Wetland
 - Forested Area



Notes

1. Coordinate System: NAD 1983 CSRS UTM Zone 21N
2. Data Sources: World Energy GH2, NRCan CanVec, OpenStreetMap
3. Background: NRCan CanVec



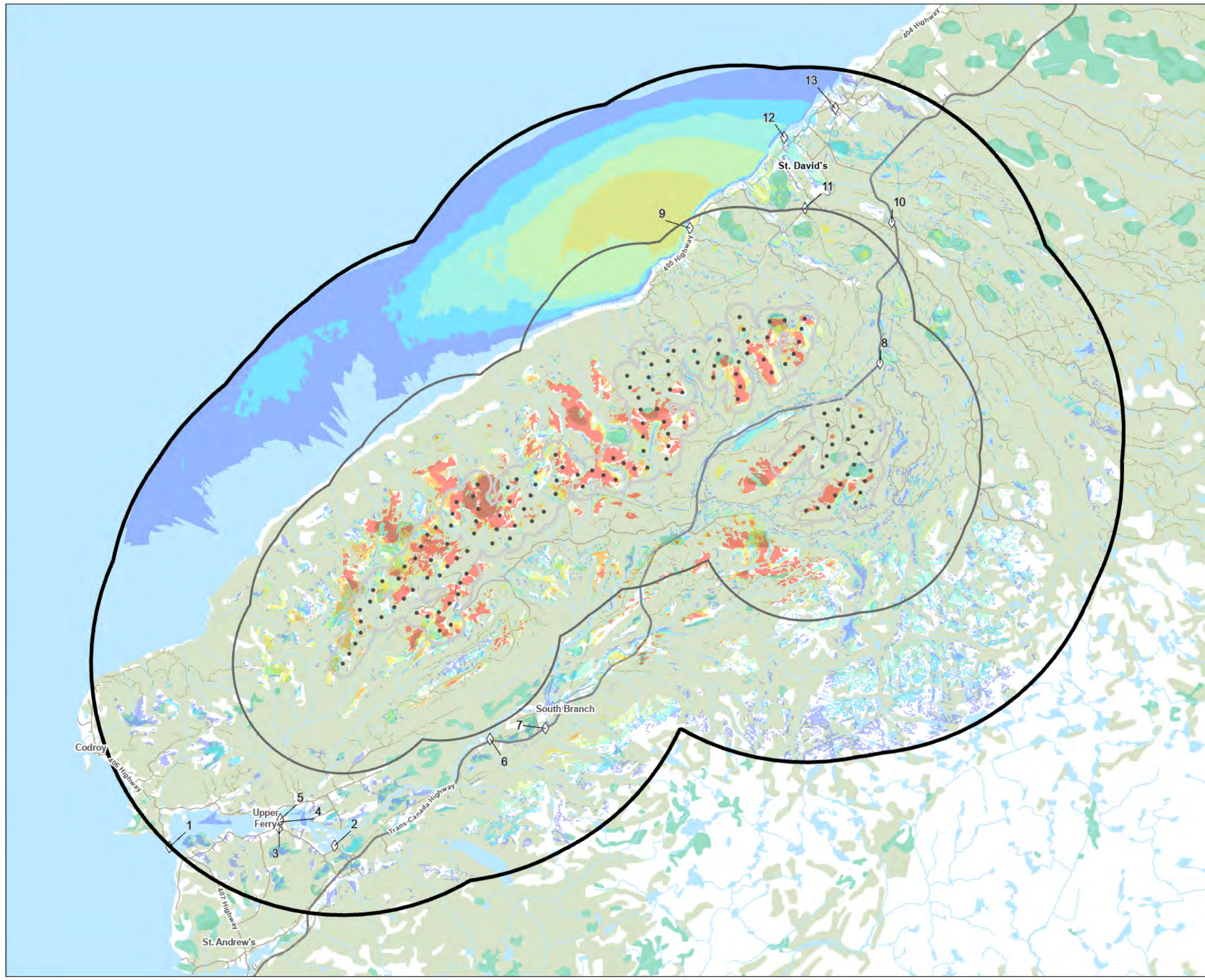
Project Location: Newfoundland, Canada
 Prepared by JBB on 7/28/2023
 QR by AW on 7/28/2023

Client/Project: Project Nujio'qonik World Energy GH2
 121417233

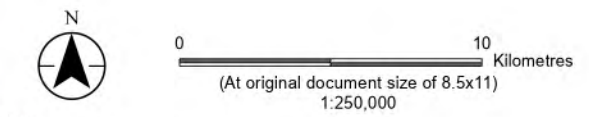
Figure No.: **B5**
 Page 1 of 1

**Viewshed Analysis
 Bare Earth
 Codroy Wind Farm**

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- Turbine Location
- ◇ Visually Sensitive Resources
- Number of Visible Turbines**
- None
- 1 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 60
- > 60
- 0.8 km (Foreground Distance Zone)
- 6.5 km (Middleground Distance Zone)
- 15 km (Background Distance Zone)
- Other Features**
- Trans-Canada Highway
- Road
- Watercourse
- Waterbody
- Wetland
- Forested Area



- Notes**
1. Coordinate System: NAD 1983 CSRS UTM Zone 21N
 2. Data Sources: World Energy GH2, NRCan CanVec, OpenStreetMap
 3. Background: NRCan CanVec



Project Location: Newfoundland, Canada
 Prepared by JBB on 7/28/2023
 QR by AW on 7/28/2023

Client/Project: Project Nujio'qonik / World Energy GH2
 121417233

Figure No.: **B6**
 Page 1 of 1

**Viewshed Analysis
 Screened
 Codroy Wind Farm**

Appendix C

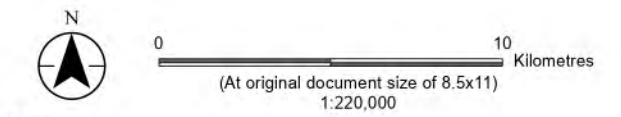
Photographic Simulations

PROJECT NUJIO'QONIK
Visual Assessment Technical Report

U:\121417575\gis\data\viewshed\121417233_viewshed_analysis.aprx Revised: 2023-07-28 By: j.bryant



- | | |
|---|--|
| <ul style="list-style-type: none"> ▲ Port au Port Wind Farm Turbine ● Port au Port Wind Farm KOP — 230 kV Transmission Line ● 230 kV Transmission Line KOP | <p>Other Features</p> <ul style="list-style-type: none"> — Trans-Canada Highway — Road — Watercourse ■ Waterbody ■ Wetland ■ Forested Area |
|---|--|



- Notes**
1. Coordinate System: NAD 1983 CSRS UTM Zone 21N
 2. Data Sources: World Energy GH2, NRCAN CanVec, OpenStreetMap
 3. Background: NRCAN CanVec Light Gray Base: Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, NRCAN, Parks Canada



<p><i>Project Location</i> Newfoundland, Canada</p>	<p>Prepared by JBB on 7/28/2023 QR by AW on 7/28/2023</p>
<p><i>Client/Project</i> Project Nuji'qonik World Energy GH2</p>	<p>121417233</p>
<p><i>Figure No.</i> C1</p>	<p>Page 1 of 1</p>

Photographic Simulation KOP Location Map



Existing View



Proposed View



Viewpoint Location and Approximate Angle of View and Distance to the Project.

Photograph Data:

Latitude / Longitude: 48° 31' 04.82"N,
59° 03' 10.42"W

Approximate Distance from
Nearest / Furthest Turbine
(in view): 1.76 km / 3.60 km

Photography Date / Time: May 17, 2023
1:49 p.m.

Camera Make / Model: Canon EOS 6D Mark II

Focal Length: 50 mm

Project Data:

Project Visible: Port au Port Wind Farm

Orientation of View: Northwest

Location of View: Hidden Falls

Landscape Unit: Coastline Bluffs Unit

Distance to Nearest Turbine
(in or out of view) / Zone: 1.76 km / Middleground

Viewer Group: Recreational and Visitor Constituency



Existing View



Proposed View



Existing View



Proposed View



Viewpoint Location and Approximate Angle of View and Distance to the Project.

Photograph Data:

Latitude / Longitude: 48° 30' 55.60"N,
59° 03' 47.44"W

Approximate Distance from
Nearest / Furthest Turbine
(in view): 7.82 km / 19.34 km

Photography Date / Time: May 17, 2023
2:03 p.m.

Camera Make / Model: Canon EOS 6D Mark II

Focal Length: 50 mm

Project Data:

Project Visible: Port au Port Wind Farm and 230 kV Transmission Line

Orientation of View: East-Northeast

Location of View: Sheaves Cove (Route 460)

Landscape Unit: Coastline Community Centre Unit

Distance to Nearest Turbine
(in or out of view) / Zone: 1.33 km / Middleground

Viewer Group: Local and Commuter Constituency



Existing View



Proposed View



Existing View



Proposed View



Viewpoint Location and Approximate Angle of View and Distance to the Project.

Photograph Data:

Latitude / Longitude: 48° 35' 31.40"N,
59° 08' 46.55"W

Approximate Distance from
Nearest / Furthest Turbine
(in view): 1.51 km / 8.92 km

Photography Date / Time: May 18, 2023
12:11 p.m.

Camera Make / Model: Canon EOS 6D Mark II

Focal Length: 50 mm

Project Data:

Project Visible: Port au Port Wind Farm

Orientation of View: Southeast

Location of View: Route 463

Landscape Unit: Coastline Residential Unit

Distance to Nearest Turbine
(in or out of view) / Zone: 0.88 / Middleground

Viewer Group: Local and Commuter Constituency

Client/Project
World Energy GH2
Project Nujio'qonik
Port au Port Peninsula and Codroy Valley, NL

Figure No.
C4

Title
KOP 30 - Route 463



Existing View



Proposed View



Existing View



Proposed View



Viewpoint Location and Approximate Angle of View and Distance to the Project.

Photograph Data:

Latitude / Longitude: 48° 38' 53.46"N,
58° 59' 49.59"W

Approximate Distance from
Nearest / Furthest Turbine
(in view): 3.05 km / 17.55 km

Photography Date / Time: May 18, 2023
1:22 p.m.

Camera Make / Model: Nikon D750

Focal Length: 50 mm

Project Data:

Project Visible: Port au Port Wind Farm

Orientation of View: South

Location of View: Clam Bank Cove (Lourdes)

Landscape Unit: Coastline Community Centre Unit

Distance to Nearest Turbine
(in or out of view) / Zone: 3.05 km / Middleground

Viewer Group: Local Constituency



Existing View



Proposed View

Client/Project
World Energy GH2
Project Nujio'qonik
Port au Port Peninsula and Codroy Valley, NL

Figure No.
C5-b

Title
KOP 32 - Clam Bank Cove Road (Lourdes)



Existing View



Proposed View



Viewpoint Location and Approximate Angle of View and Distance to the Project.

Photograph Data:

Latitude / Longitude: 48° 35' 30.30"N,
58° 54' 10.07"W

Approximate Distance from
Nearest / Furthest Turbine
(in view): 4.06 km / 13.90 km

Photography Date / Time: May 18, 2023
9:34 a.m.

Camera Make / Model: Nikon D750

Focal Length: 50 mm

Project Data:

Project Visible: Port au Port Wind Farm

Orientation of View: West-Northwest

Location of View: Piccadilly Park Beach

Landscape Unit: Coastline Bluffs Unit

Distance to Nearest Turbine
(in or out of view) / Zone: 3.14 km / Middleground

Viewer Group: Recreational and Visitor Constituency



Existing View



Proposed View

Client/Project
World Energy GH2
Project Nujio'qonik
Port au Port Peninsula and Codroy Valley, NL

Figure No.
C6-b

Title
KOP 36 - Piccadilly Park Beach



Existing View



Proposed View



Viewpoint Location and Approximate Angle of View and Distance to the Project.

Photograph Data:

Latitude / Longitude: 48° 31' 52.77"N,
58° 46' 49.76"W

Approximate Distance from
Nearest / Furthest Turbine
(in view): 2.34 km / 32.48 km

Photography Date / Time: May 17, 2023
12:44 p.m.

Camera Make / Model: Nikon D750

Focal Length: 50 mm

Project Data:

Project Visible: Port au Port Wind Farm and 230 kV Transmission Line

Orientation of View: West-Northwest

Location of View: Felix Cove (Route 460)

Landscape Unit: Coastline Community Centre Unit

Distance to Nearest Turbine
(in or out of view) / Zone: 2.34 / Middleground

Viewer Group: Local and Commuter Constituency



Existing View



Proposed View



Existing View



Proposed View



Viewpoint Location and Approximate Angle of View and Distance to the Project.

Photograph Data:

Latitude / Longitude: 48° 33' 35.92"N,
58° 44' 32.80"W

Approximate Distance from
Nearest / Furthest Turbine
(in view): 7.77 km / 16.98 km

Photography Date / Time: May 18, 2023
3:00 p.m.

Camera Make / Model: Canon EOS 6D Mark II

Focal Length: 50 mm

Project Data:

Project Visible: Port au Port Wind Farm and 230 kV Transmission Line

Orientation of View: Northeast

Location of View: Danny's Walking Trail

Landscape Unit: Coastline Bluffs Unit

Distance to Nearest Turbine
(in or out of view) / Zone: 4.51 km / Middleground

Viewer Group: Recreational and Visitor Constituency



Existing View



Proposed View



Client/Project
World Energy GH2
Project Nujio'qonik
Port au Port Peninsula and Codroy Valley, NL

Figure No.
C8-b

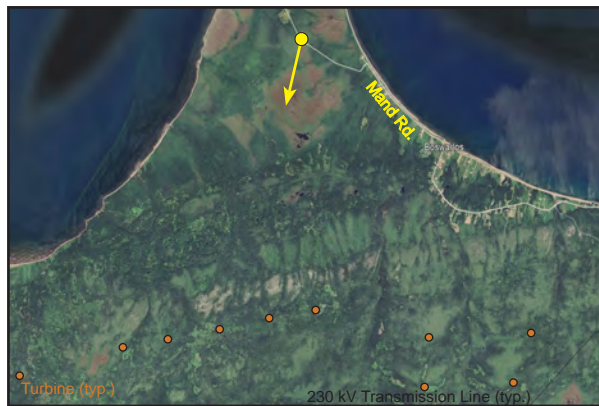
Title
KOP 55 - Danny's Walking Trail



Existing View



Proposed View



Viewpoint Location and Approximate Angle of View and Distance to the Project.

Photograph Data:

Latitude / Longitude: 48° 34' 49.11"N,
58° 50' 31.57"W

Approximate Distance from
Nearest / Furthest Turbine
(in view): 3.10 km / 5.03 km

Photography Date / Time: May 18, 2023
4:56 p.m.

Camera Make / Model: Nikon D750

Focal Length: 50 mm

Project Data:

Project Visible: Port au Port Wind Farm and 230 kV Transmission Line

Orientation of View: South-Southwest

Location of View: Boswarlos Peninsula

Landscape Unit: Coastline Residential Unit

Distance to Nearest Turbine
(in or out of view) / Zone: 3.10 km / Middleground

Viewer Group: Local, and Recreational and Visitor Constituency



Existing View



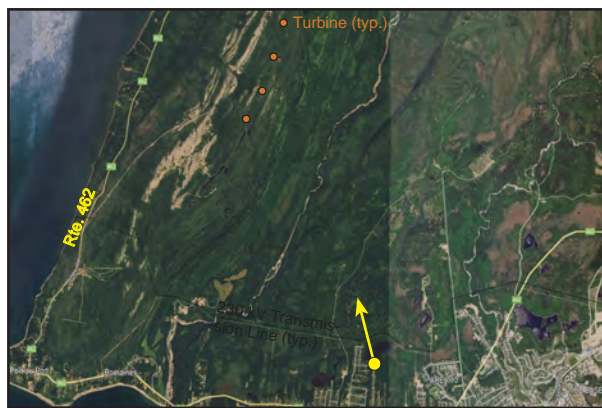
Proposed View



Existing View



Proposed View



Viewpoint Location and Approximate Angle of View and Distance to the Project.

Photograph Data:

Latitude / Longitude: 48° 33' 29.88"N,
58° 36' 57.93"W

Approximate Distance from
Nearest / Furthest Turbine
(in view): 4.87 km / 11.27 km

Photography Date / Time: May 18, 2023
5:13 p.m.

Camera Make / Model: Canon EOS 6D Mark II

Focal Length: 50 mm

Project Data:

Project Visible: Port au Port Wind Farm and 230 kV Transmission Line

Orientation of View: North-Northwest

Location of View: Islands Pond Drive (Kippens)

Landscape Unit: Community Centre Unit

Distance to Nearest Turbine
(in or out of view) / Zone: 4.87 km / Middleground

Viewer Group: Local Constituency



Existing View



Proposed View

Client/Project
World Energy GH2
Project Nujio'qonik
Port au Port Peninsula and Codroy Valley, NL

Figure No.
C10-b

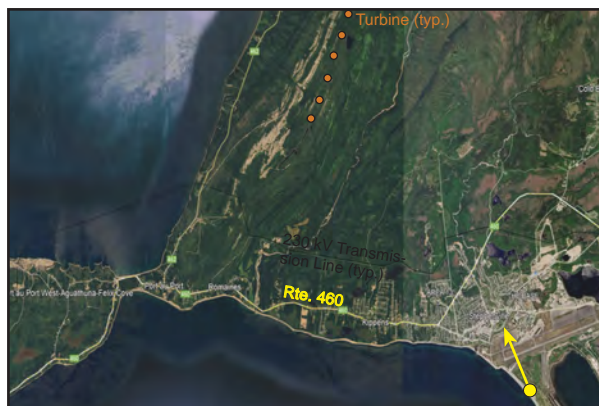
Title
KOP 75 - Islands Pond Drive (Kippens)



Existing View



Proposed View



Viewpoint Location and Approximate Angle of View and Distance to the Project.

Photograph Data:

Latitude / Longitude: 48° 31' 57.50"N,
58° 33' 33.06"W

Approximate Distance from
Nearest / Furthest Turbine
(in view): 9.82 km / 16.02 km

Photography Date / Time: May 18, 2023
6:04 p.m.

Camera Make / Model: Canon EOS 6D Mark II

Focal Length: 50 mm

Project Data:

Project Visible: Port au Port Wind Farm and 230 kV Transmission Line

Orientation of View: Northwest

Location of View: Massachusetts Drive (Stephenville)

Landscape Unit: Community Centre Unit

Distance to Nearest Turbine
(in or out of view) / Zone: 9.72 km / Background

Viewer Group: Local, Commuter, and Recreational and Visitor Constituency



Existing View



Proposed View



Existing View



Proposed View



Viewpoint Location and Approximate Angle of View and Distance to the Project.

Photograph Data:

Latitude / Longitude: 48° 31' 15.63"N,
58° 30' 58.08"W

Approximate Distance from
Nearest / Furthest Turbine
(in view): 12.93 km / 17.50 km

Photography Date / Time: May 19, 2023
9:44 a.m.

Camera Make / Model: Nikon D750

Focal Length: 50 mm

Project Data:

Project Visible: Port au Port Wind Farm and 230 kV Transmission Line

Orientation of View: Northwest

Location of View: Joey's Lookout (Stephenville)

Landscape Unit: Community Centre Unit

Distance to Nearest Turbine
(in or out of view) / Zone: 12.93 km / Background

Viewer Group: Recreational and Visitor Constituency



Existing View

Client/Project
World Energy GH2
Project Nujio'qonik
Port au Port Peninsula and Codroy Valley, NL

Figure No.
C12-a

Title
KOP 85 - Joey's Lookout (Stephenville)



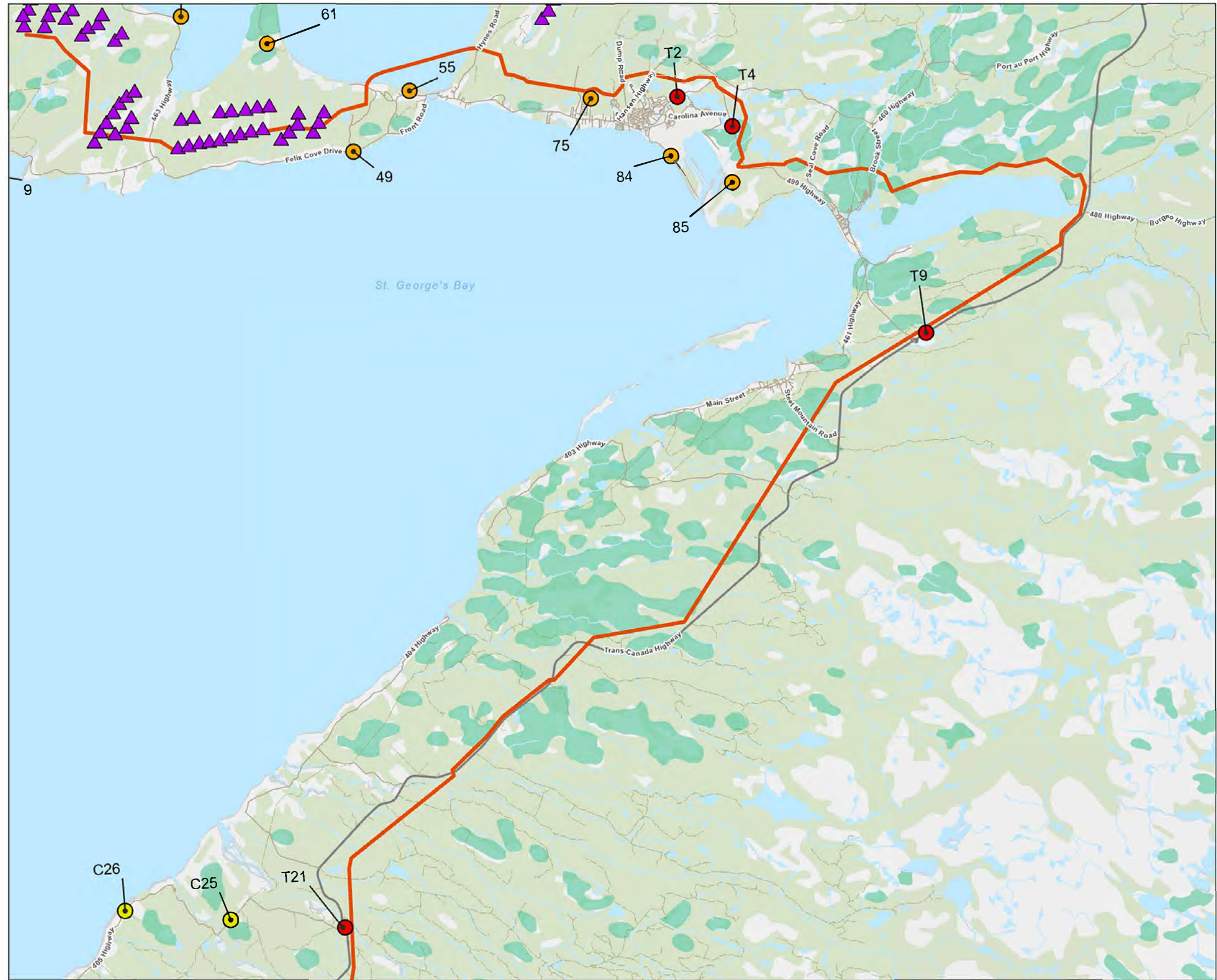
Proposed View

Client/Project
World Energy GH2
Project Nujio'qonik
Port au Port Peninsula and Codroy Valley, NL

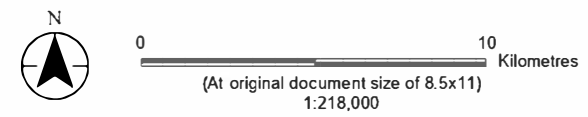
Figure No.
C12-b

Title
KOP 85 - Joey's Lookout (Stephenville)

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- | | |
|---|--|
| <ul style="list-style-type: none"> Port au Port Wind Farm Turbine 230 kV Transmission Line KOP 230 kV Transmission Line Port au Port Wind Farm KOP Codroy Wind Farm KOP | <p>Other Features</p> <ul style="list-style-type: none"> Trans-Canada Highway Road Watercourse Waterbody Wetland Forested Area |
|---|--|



Notes
 1. Coordinate System: NAD 1983 CSRS UTM Zone 21N
 2. Data Sources: World Energy GH2, NRCan CanVec, OpenStreetMap
 3. Background: NRCan CanVec Light Gray Base: Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, NRCan, Parks Canada



Project Location: Newfoundland, Canada
 Prepared by JBB on 7/28/2023
 QR by AW on 7/28/2023

Client/Project: Project Nujio'qonik, World Energy GH2
 121417233

Figure No. **C13**
 Page 1 of 1

Photographic Simulation KOP Location Map



Existing View



Proposed View



Viewpoint Location and Approximate Angle of View and Distance to the Project.

Photograph Data:

Latitude / Longitude: 48° 33' 35.57"N,
58° 33' 21.18"W

Approximate Distance from
Nearest / Furthest T-Line
Structure (in view): 0.83 km / 0.99 km

Photography Date / Time: May 19, 2023
2:21 p.m.

Camera Make / Model: Nikon D750

Focal Length: 50 mm

Project Data:

Project Visible: 230 kV Transmission Line

Orientation of View: Northeast

Location of View: Stephenville Dome (Stephenville)

Landscape Unit: Community Centre Unit

Distance to Nearest Structure
(in or out of view) / Zone: 0.57 km / Foreground

Viewer Group: Local, and Recreational and Visitor Constituencies



Existing View



Proposed View



Existing View



Proposed View



Viewpoint Location and Approximate Angle of View and Distance to the Project.

Photograph Data:

Latitude / Longitude: 48° 32' 48.44"N,
58° 31' 02.07"W

Approximate Distance from
Nearest / Furthest T-Line
Structure (in view): 0.63 km / 0.89 km

Photography Date / Time: May 19, 2023
3:04 p.m.

Camera Make / Model: Nikon D750

Focal Length: 50 mm

Project Data:

Project Visible: 230 kV Transmission Line

Orientation of View: East

Location of View: Route 490 (Stephenville)

Landscape Unit: Highway Unit

Distance Nearest Structure
(in or out of view) / Zone: 0.57 km / Foreground

Viewer Group: Commuter Constituency



Existing View



Proposed View



Existing View



Proposed View



Viewpoint Location and Approximate Angle of View and Distance to the Project.

Photograph Data:

Latitude / Longitude: 48° 27' 11.34"N,
58° 22' 47.04"W

Approximate Distance from
Nearest / Furthest T-Line
Structure (in view): 0.31 km / 1.57 km

Photography Date / Time: May 19, 2023
9:39 a.m.

Camera Make / Model: Canon EOS 6D Mark II

Focal Length: 50 mm

Project Data:

Project Visible: 230 kV Transmission Line

Orientation of View: West

Location of View: Trans-Canada Highway

Landscape Unit: Highway Unit

Distance to Nearest Structure
(in or out of view) / Zone: 0.18 km / Foreground

Viewer Group: Commuter Constituency



Existing View

Client/Project
World Energy GH2
Project Nujio'qonik
Port au Port Peninsula and Codroy Valley, NL

Figure No.
C16-a

Title
KOP T9 - Trans-Canada Highway



Proposed View

Client/Project
World Energy GH2
Project Nujio'qonik
Port au Port Peninsula and Codroy Valley, NL

Figure No.
C16-b

Title
KOP T9 - Trans-Canada Highway



Existing View



Proposed View



Viewpoint Location and Approximate Angle of View and Distance to the Project.

Photograph Data:

Latitude / Longitude: 48° 10' 22.08"N,
58° 46' 25.33"W

Approximate Distance from
Nearest / Furthest T-Line
Structure (in view): 0.34 km / 0.38 km

Photography Date / Time: May 19, 2023
12:42 p.m.

Camera Make / Model: Canon EOS 6D Mark II

Focal Length: 50 mm

Project Data:

Project Visible: 230 kV Transmission Line

Orientation of View: East

Location of View: Trans-Canada Highway

Landscape Unit: Highway Unit

Distance to nearest Structure
(in or out of view) / Zone: 0.34 km / Foreground

Viewer Group: Commuter Constituency

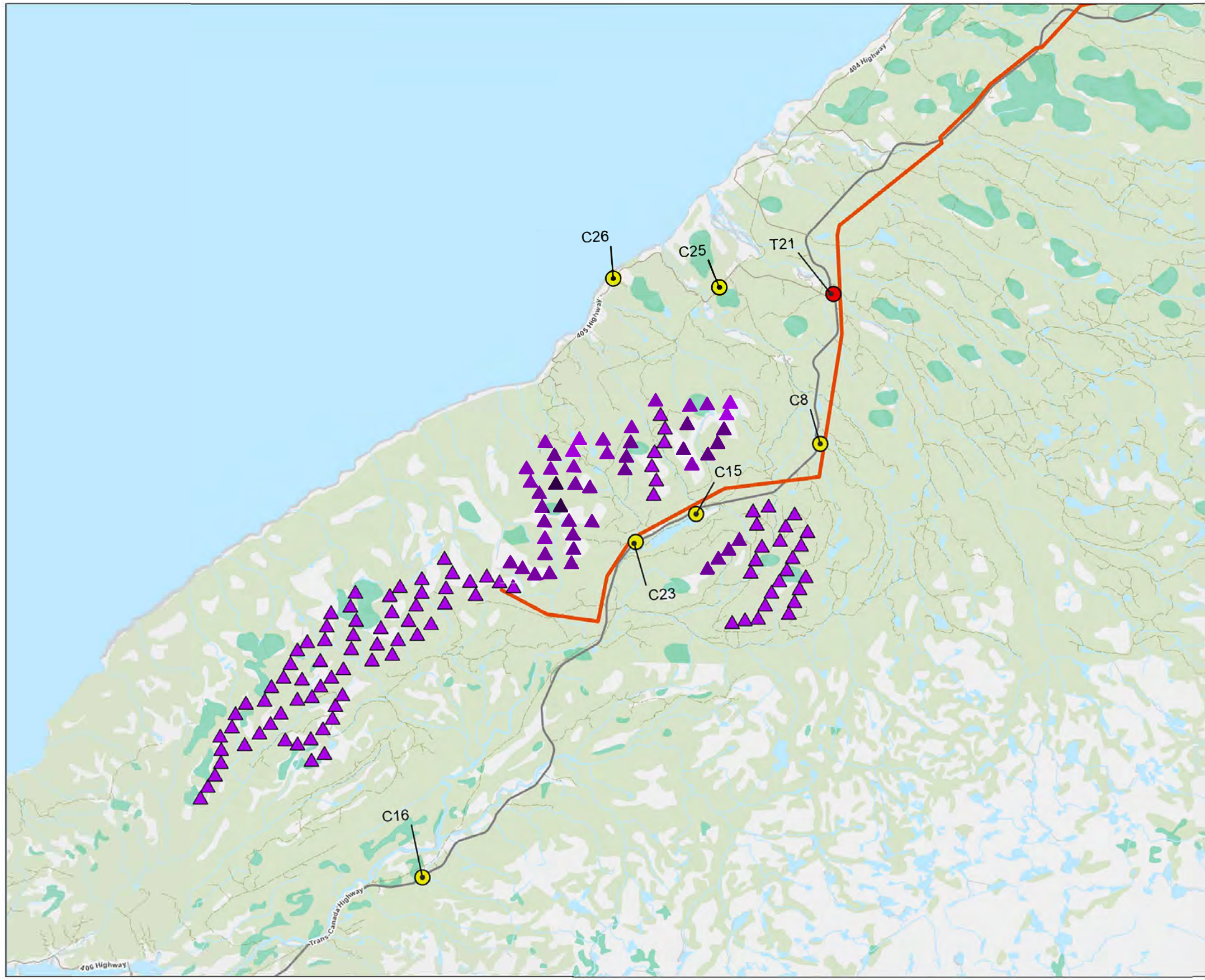


Existing View

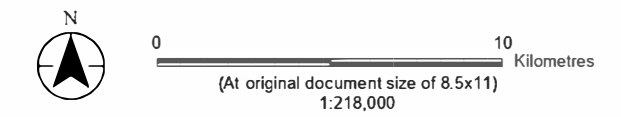


Proposed View

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- | | |
|--------------------------------|------------------------|
| ▲ Codroy Wind Farm Turbine | Other Features |
| ● Codroy Wind Farm KOP | — Trans-Canada Highway |
| — 230 kV Transmission Line | — Road |
| ● 230 kV Transmission Line KOP | — Watercourse |
| | ■ Waterbody |
| | ■ Wetland |
| | ■ Forested Area |



- Notes**
1. Coordinate System: NAD 1983 CSRS UTM Zone 21N
 2. Data Sources: World Energy GH2, NRCAN CanVec, OpenStreetMap
 3. Background: NRCAN CanVec Light Gray Base: Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, NRCAN, Parks Canada



Project Location: Newfoundland, Canada
 Prepared by JBB on 7/28/2023
 QR by AW on 7/28/2023

Client/Project: Project Nujio'qonik World Energy GH2
 121417233

Figure No. **C18**
 Page 1 of 1

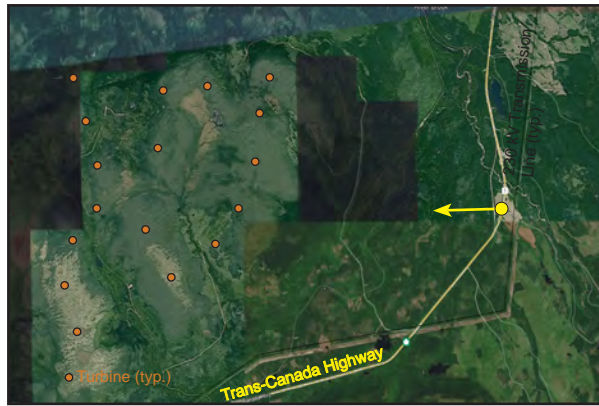
Photographic Simulation KOP Location Map



Existing View



Proposed View



Viewpoint Location and Approximate Angle of View and Distance to the Project.

Photograph Data:

Latitude / Longitude: 48° 06' 11.74"N,
58° 46' 49.59"W

Approximate Distance from
Nearest / Furthest Turbine
(in view): 5.01 km / 7.03 km

Photography Date / Time: May 19, 2023
1:28 p.m.

Camera Make / Model: Canon EOS 6D Mark II

Focal Length: 50 mm

Project Data:

Project Visible: Codroy Wind Farm

Orientation of View: West

Location of View: Trans-Canada Highway

Landscape Unit: Highway Unit

Distance to Nearest Turbine
(in or out of view) / Zone: 3.74 km / Middleground

Viewer Group: Commuter Constituency



Existing View

Client/Project
World Energy GH2
Project Nujio'qonik
Port au Port Peninsula and Codroy Valley, NL

Figure No.
C19-a

Title
KOP C8 - Trans-Canada Highway



Proposed View

Client/Project
World Energy GH2
Project Nujio'qonik
Port au Port Peninsula and Codroy Valley, NL

Figure No.
C19-b

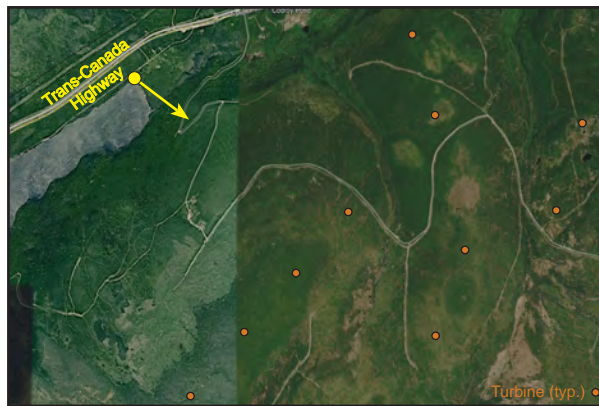
Title
KOP C8 - Trans-Canada Highway



Existing View



Proposed View



Viewpoint Location and Approximate Angle of View and Distance to the Project.

Photograph Data:

Latitude / Longitude: 48° 04' 09.64"N,
58° 51' 54.66"W

Approximate Distance from
Nearest / Furthest Turbine
(in view): 2.38 km / 2.53 km

Photography Date / Time: May 19, 2023
2:22 p.m.

Camera Make / Model: Canon EOS 6D Mark II

Focal Length: 50 mm

Project Data:

Project Visible: Codroy Wind Farm

Orientation of View: Southeast

Location of View: Codroy Pond

Landscape Unit: Forest Unit

Distance to Nearest Turbine
(in or out of view) / Zone: 2.38 km / Middleground

Viewer Group: Recreational and Visitor Constituency

Client/Project
World Energy GH2
Project Nujio'qonik
Port au Port Peninsula and Codroy Valley, NL

Figure No.
C20

Title
KOP C15 - Codroy Pond



Existing View



Proposed View

Client/Project
World Energy GH2
Project Nujio'qonik
Port au Port Peninsula and Codroy Valley, NL

Figure No.
C20-b

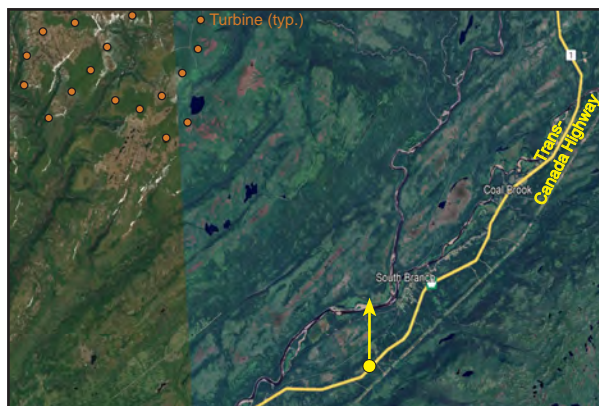
Title
KOP C15 - Codroy Pond



Existing View



Proposed View



Viewpoint Location and Approximate Angle of View and Distance to the Project.

Photograph Data:

Latitude / Longitude: 47° 53' 51.86"N,
59° 02' 52.18"W

Approximate Distance from
Nearest / Furthest Turbine
(in view): 14.92 km / 27.16 km

Photography Date / Time: May 19, 2023
3:35 p.m.

Camera Make / Model: Canon EOS 6D Mark II

Focal Length: 50 mm

Project Data:

Project Visible: Codroy Wind Farm

Orientation of View: North

Location of View: Trans-Canada Highway

Landscape Unit: Highway Unit

Distance to Nearest Turbine
(in or out of view) / Zone: 8.23 km / Background

Viewer Group: Commuter Constituency



Existing View



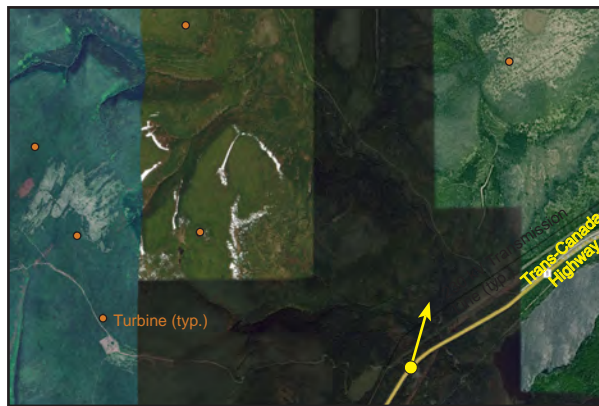
Proposed View



Existing View



Proposed View



Viewpoint Location and Approximate Angle of View and Distance to the Project.

Photograph Data:

Latitude / Longitude: 48° 03' 18.13"N,
58° 54' 27.33"W

Approximate Distance from
Nearest / Furthest Turbine
(in view): 2.83 km / 6.84 km

Photography Date / Time: May 19, 2023
4:34 p.m.

Camera Make / Model: Canon EOS 6D Mark II

Focal Length: 50 mm

Project Data:

Project Visible: Codroy Wind Farm and 230 kV Transmission Line

Orientation of View: Northeast

Location of View: Trans-Canada Highway

Landscape Unit: Highway Unit

Distance to Nearest Turbine
(in or out of view) / Zone: 2.50 km / Middleground

Viewer Group: Commuter Constituency



Existing View

Client/Project
World Energy GH2
Project Nujio'qonik
Port au Port Peninsula and Codroy Valley, NL

Figure No.
C22-a

Title
KOP C23 - Trans-Canada Highway



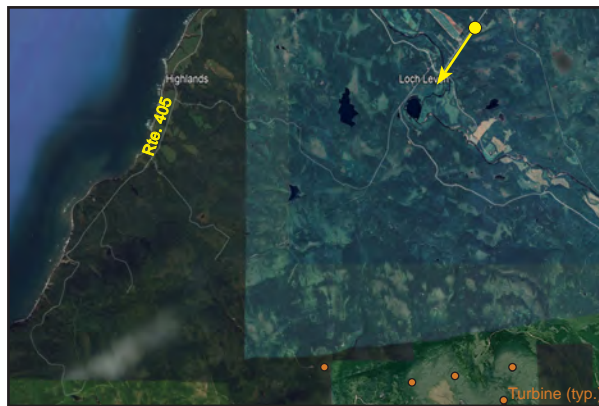
Proposed View



Existing View



Proposed View



Viewpoint Location and Approximate Angle of View and Distance to the Project.

Photograph Data:

Latitude / Longitude: 48° 10' 29.23"N,
58° 51' 09.27"W

Approximate Distance from
Nearest / Furthest Turbine
(in view): 6.20 km / 19.06 km

Photography Date / Time: May 19, 2023
4:56 p.m.

Camera Make / Model: Nikon D750

Focal Length: 50 mm

Project Data:

Project Visible: Codroy Wind Farm

Orientation of View: Southwest

Location of View: Route 405 (Saint Fintan's)

Landscape Unit: Rural Residential Unit

Distance to Nearest Turbine
(in or out of view) / Zone: 5.86 km / Middleground

Viewer Group: Local Constituency



Existing View

Client/Project
World Energy GH2
Project Nujio'qonik
Port au Port Peninsula and Codroy Valley, NL

Figure No.
C23-a

Title
KOP C25 - Route 405 (Saint Fintan's)



Proposed View

Client/Project
World Energy GH2
Project Nujio'qonik
Port au Port Peninsula and Codroy Valley, NL

Figure No.
C23-b

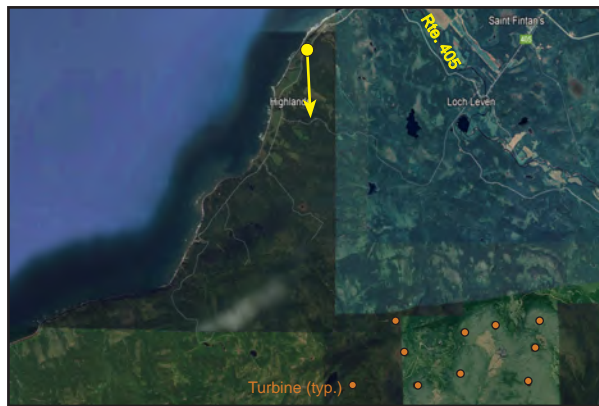
Title
KOP C25 - Route 405 (Saint Fintan's)



Existing View



Proposed View



Viewpoint Location and Approximate Angle of View and Distance to the Project.

Photograph Data:

Latitude / Longitude: 48° 10' 39.93"N,
58° 55' 33.88"W

Approximate Distance from
Nearest / Furthest Turbine
(in view): 6.54 km / 11.24 km

Photography Date / Time: May 19, 2023
5:08 p.m.

Camera Make / Model: Canon EOS 6D Mark II

Focal Length: 50 mm

Project Data:

Project Visible: Codroy Wind Farm

Orientation of View: South

Location of View: Route 405 (Highlands)

Landscape Unit: Coastline Community Centre Unit

Distance to Nearest Turbine
(in or out of view) / Zone: 6.54 km / Middleground

Viewer Group: Local Constituency



Existing View



Proposed View



Client/Project
World Energy GH2
Project Nujio'qonik
Port au Port Peninsula and Codroy Valley, NL

Figure No.
C24-b

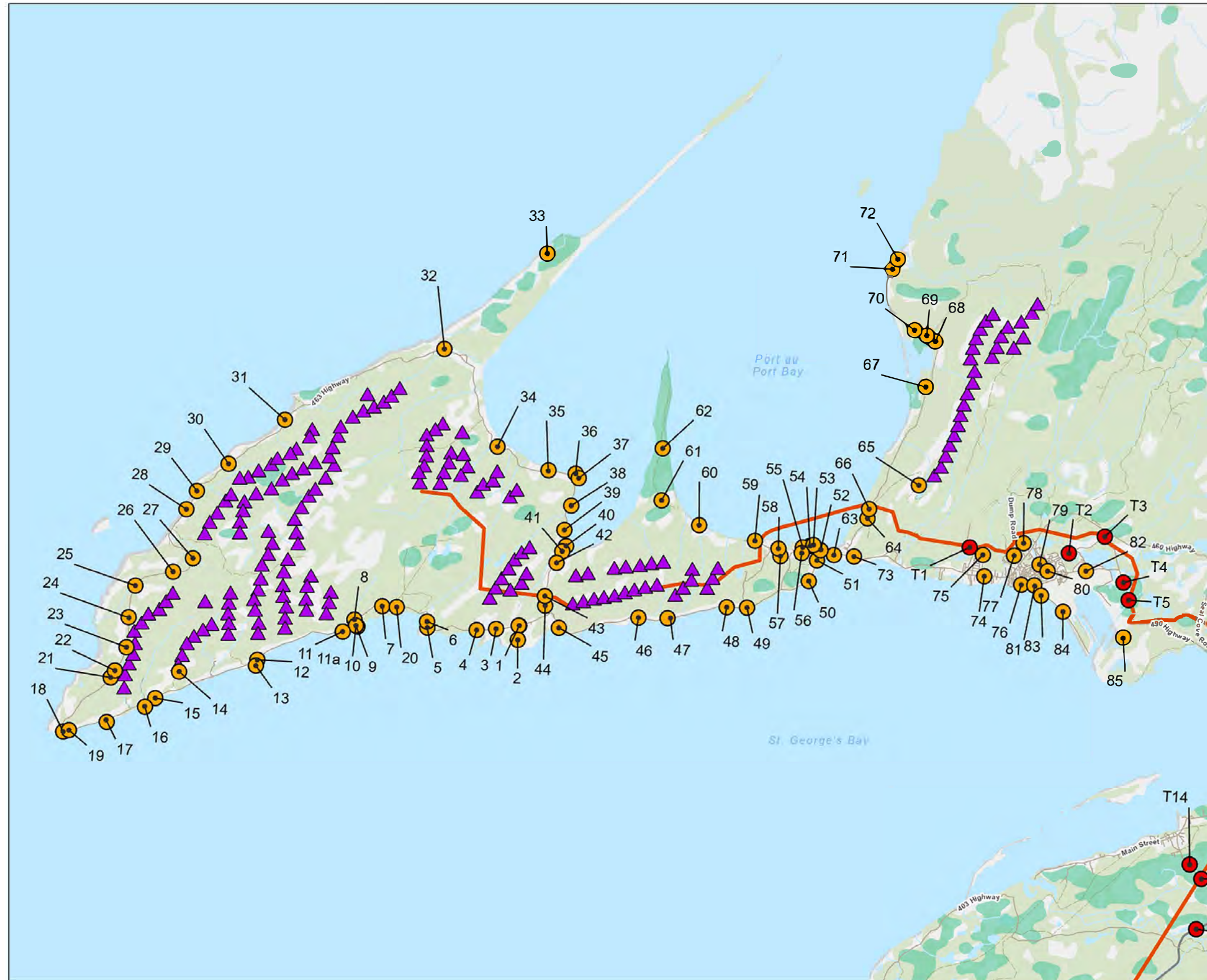
Title
KOP C26 - Route 405 (Highlands)

Appendix D

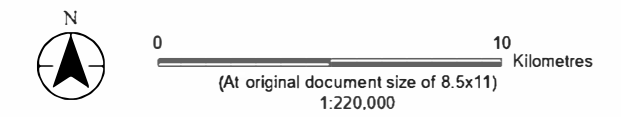
Photolog

PROJECT NUJIO'QONIK
Visual Assessment Technical Report

U:\1214175\GIS\data\viewshed\121417233_viewshed_analysis.aprx Revised: 2023-07-28 By: j.bryant



- | | |
|---|---|
| <ul style="list-style-type: none"> ▲ Port au Port Wind Farm Turbine ● Port au Port Wind Farm Photo Location — 230 kV Transmission Line ● 230 kV Transmission Line Photo Location | <p>Other Features</p> <ul style="list-style-type: none"> — Trans-Canada Highway — Road — Watercourse ■ Waterbody ■ Wetland ■ Forested Area |
|---|---|



Notes

1. Coordinate System: NAD 1983 CSRS UTM Zone 21N
2. Data Sources: World Energy GH2, NRCAN CanVec, OpenStreetMap
3. Background: NRCAN CanVec MostRecentImagery_WGS: Virginia Geographic Information Network (VGIN)

Light Gray Base: Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, NRCAN, Parks Canada



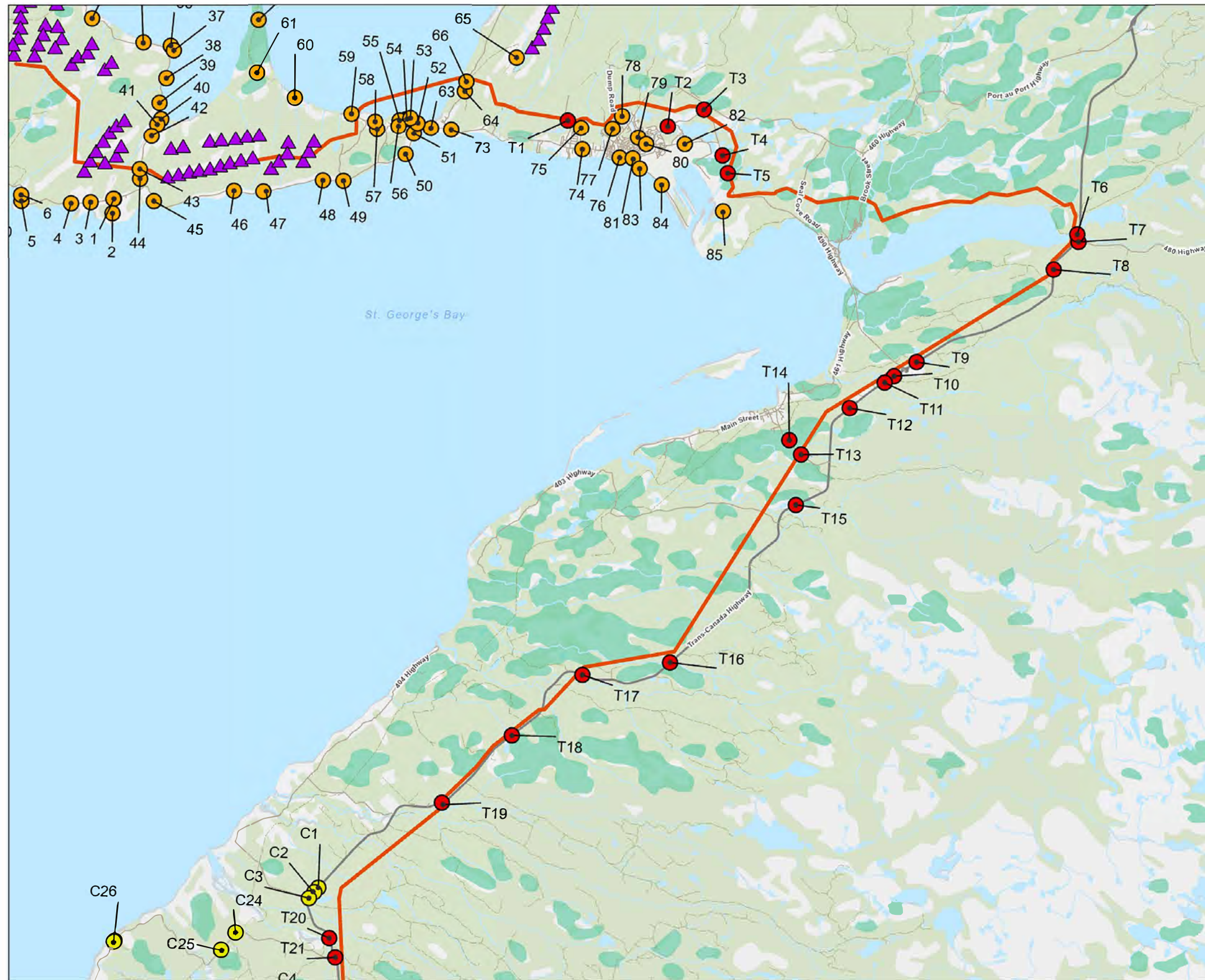
Project Location: Newfoundland, Canada
 Prepared by JBB on 7/28/2023
 QR by AW on 7/28/2023

Client/Project: Project Nujio'qonik World Energy GH2
 121417233

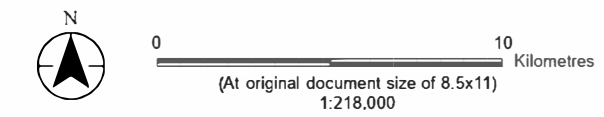
Figure No.: **D1**
 Page 1 of 3

Title: **Photograph Location Map**

U:\121417575\gis\data\viewshed\121417233_viewshed_analysis.aprx Revised: 2023-07-28 By: j.bryant



- | | |
|--|---|
| <ul style="list-style-type: none"> Port au Port Wind Farm Turbine 230 kV Transmission Line Photo Location 230 kV Transmission Line Port au Port Wind Farm Photo Location Codroy Wind Farm Photo Location | <p>Other Features</p> <ul style="list-style-type: none"> Trans-Canada Highway Road Watercourse Waterbody Wetland Forested Area |
|--|---|



Notes

1. Coordinate System: NAD 1983 CSRS UTM Zone 21N
2. Data Sources: World Energy GH2, NRCan CanVec, OpenStreetMap
3. Background: NRCan CanVec MostRecentImagery_WGS: Virginia Geographic Information Network (VGIN)

Light Gray Base: Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, NRCan, Parks Canada



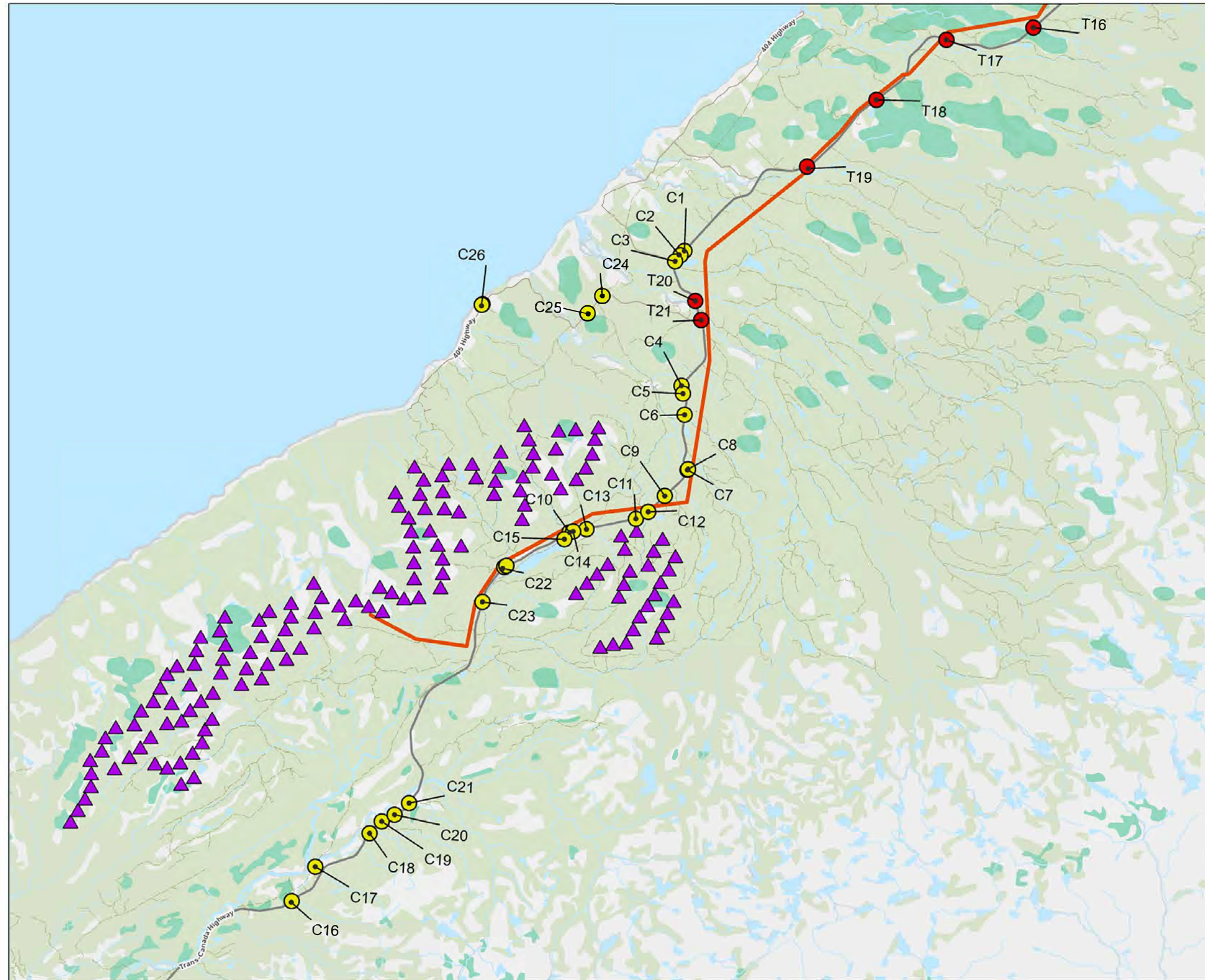
Project Location: Newfoundland, Canada
 Prepared by JBB on 7/28/2023
 QR by AW on 7/28/2023

Client/Project: Project Nujio'qonik World Energy GH2
 121417233

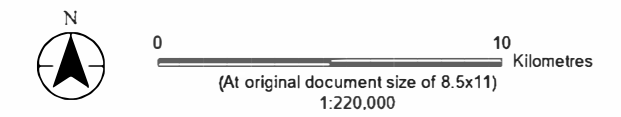
Figure No. **D2**
 Page 2 of 3

Photograph Location Map

U:\121417575\gis\data\viewshed\121417233_viewshed_analysis.aprx Revised: 2023-07-28 By: j.bryant



- | | |
|---|------------------------|
| ▲ Codroy Wind Farm Turbine | Other Features |
| ● Codroy Wind Farm Photo Location | — Trans-Canada Highway |
| — 230 kV Transmission Line | — Road |
| ● 230 kV Transmission Line Photo Location | — Watercourse |
| | — Waterbody |
| | — Wetland |
| | — Forested Area |



Notes
 1. Coordinate System: NAD 1983 CSRS UTM Zone 21N
 2. Data Sources: World Energy GH2, NRCAN CanVec, OpenStreetMap
 3. Background: NRCAN CanVec MostRecentImagery_WGS: Virginia Geographic Information Network (VGIN)
 Light Gray Base: Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, NRCAN, Parks Canada



Project Location: Newfoundland, Canada
 Prepared by JBB on 7/28/2023
 QR by AW on 7/28/2023

Client/Project: Project Nujio'qonik World Energy GH2
 121417233

Figure No.: **D3**
 Page 3 of 3

Title: **Photograph Location Map**

Port au Port Wind Farm



VP 1 - Route 460
Potential Visible Project - Port au Port Wind Farm / T-Line
North View (Stantec Image 8556)



VP 1a - Route 460
Potential Visible Project - Port au Port Wind Farm
West View (Stantec Image 2-8582)



VP 2 - Jerrys Nose Road
Potential Visible Project - Port au Port Wind Farm
West View (Stantec Image 3-8594)



VP 3 - Route 460
Potential Visible Project - Port au Port Wind Farm / T-Line
North View (Stantec Image 5-8606)



VP 4 - Route 460 (Ship Cove)
Potential Visible Project - Port au Port Wind Farm
East View (Stantec Image 6-8633)



VP 5 - Route 460 (Lower Cove)
Potential Visible Project - Port au Port Wind Farm / T-Line
North View (Stantec Image 7-8636)

Port au Port Wind Farm



VP 6 - Route 460 (Lower Cove)
Potential Visible Project - Port au Port Wind Farm
West View (Stantec Image 8-8652)



VP 7 - Route 460 (Atlantic Minerals Limited)
Potential Visible Project - Port au Port Wind Farm
West View (Stantec Image 9-8664)



VP 8 - Route 460 (Sheaves Cove - St. Joseph
Chapel and Community Center)
Potential Visible Project - Port au Port Wind Farm
Northwest View (Stantec Image 10-8681)



VP 9 - Hidden Falls
Potential Visible Project - Port au Port Wind Farm
North View (Stantec Image 11-8699)



VP 10 - Hidden Falls (Camping Area)
Potential Visible Project - Port au Port Wind Farm
Northwest View (Stantec Image 12-8706)



VP 11 - Route 460 (Sheaves Cove)
Potential Visible Project - Port au Port Wind Farm
West View (Stantec Image 13-8726)

Port au Port Wind Farm



VP 11a - Route 460 (Sheaves Cove)
Potential Visible Project - Port au Port Wind Farm / T-Line
East View (Stantec Image 14-8738)



VP 12 - Route 460 (Marches Point)
Potential Visible Project - Port au Port Wind Farm
East View (Stantec Image 15-8743)



VP 13 - Marches Point Cemetery
Potential Visible Project - Port au Port Wind Farm
Northwest View (Stantec Image 16-8767)



VP 14 - Cape St. George Community Pasture
Potential Visible Project - Port au Port Wind Farm
North View (Stantec Image 19-8793)



VP 15 - Route 460 (De Grau)
Potential Visible Project - Port au Port Wind Farm
Northeast View (Stantec Image 20-8832)



VP 16 - Cape St. George Harbour
Potential Visible Project - Port au Port Wind Farm
Northeast View (Stantec Image 21-8863)

Port au Port Wind Farm



VP 17 - St. Benedicts Cemetery / Scenic Overlook
Potential Visible Project - Port au Port Wind Farm
East View (Stantec Image 22-8881)



VP 18 - Boutte du Cap Park (entry)
Potential Visible Project - Port au Port Wind Farm
East View (Stantec Image 24-8917)



VP 19 - Boutte du Cap Park (entry)
Potential Visible Project - Port au Port Wind Farm
East View (Stantec Image 25-8767)



VP 20 - Route 460 (Atlantic Minerals Limited)
Potential Visible Project - Port au Port Wind Farm
East View (Stantec Image 26-8946)



VP 21 - Route 463
Potential Visible Project - Port au Port Wind Farm
Northeast View (Stantec Image 28-8977)



VP 22 - Route 463 (1944 Plane Crash Site)
Potential Visible Project - Port au Port Wind Farm
Northeast View (Stantec Image 30-8997)

Port au Port Wind Farm



VP 23 - Route 463
Potential Visible Project - Port au Port Wind Farm
Northeast View (Stantec Image 31-9013)



VP 24 - Route 463
Potential Visible Project - Port au Port Wind Farm
Northeast View (Stantec Image 32-9029)



VP 25 - Route 463
Potential Visible Project - Port au Port Wind Farm
Northeast View (Stantec Image 33-9066)



VP 26 - Route 463
Potential Visible Project - Port au Port Wind Farm
East View (Stantec Image 35-9082)



VP 27 - Route 463
Potential Visible Project - Port au Port Wind Farm
Northeast View (Stantec Image 37-9115)



VP 28 - Route 463 (Mainland)
Potential Visible Project - Port au Port Wind Farm
East View (Stantec Image 39-9181)

Port au Port Wind Farm



VP 29 - Route 463 (Mainland)
Potential Visible Project - Port au Port Wind Farm
Southeast View (Stantec Image 42-9213)



VP 30 - Route 463
Potential Visible Project - Port au Port Wind Farm
South View (Stantec Image 43-9241)



VP 31 - Route 463 (Three Rock Cove)
Potential Visible Project - Port au Port Wind Farm
Southwest View (Stantec Image 45-9307)



VP 32 - Clam Bank Cove Road (Lourdes)
Potential Visible Project - Port au Port Wind Farm
Southwest View (Stantec Image BC28-7553)



VP 33 - Clam Bank Cove Road (Winterhouse)
Potential Visible Project - Port au Port Wind Farm
Southwest View (East turbines visible as well, Stantec Image BC24-7466)



VP 34 - Route 463 (West Bay Centre)
Potential Visible Project - Port au Port Wind Farm
Southwest View (Stantec Image BC20-7314)

Port au Port Wind Farm



VP 35 - Route 463 (Piccadilly Head)
Potential Visible Project - Port au Port Wind Farm
West View (Stantec Image BC19-7267)



VP 36 - Piccadilly Park Beach
Potential Visible Project - Port au Port Wind Farm
West View (Stantec Image BC18-7194)



VP 37 - Piccadilly Park (entry)
Potential Visible Project - Port au Port Wind Farm
West View (Stantec Image BC18-7232)



VP 38 - Piccadilly Small Craft Harbour
Potential Visible Project - Port au Port Wind Farm / T-Line
East View (Stantec Image 46-9326)



VP 39 - Route 463 (pull off)
Potential Visible Project - Port au Port Wind Farm
Northeast View (East turbines visible as well, Stantec Image 47-9348)



VP 40 - Route 463
Potential Visible Project - Port au Port Wind Farm
Southeast View (Stantec Image BC14-7619)

Port au Port Wind Farm



VP 41 - Route 463
Potential Visible Project - Port au Port Wind Farm
Southeast View (Stantec Image BC13-7661)



VP 42 - Route 463 (Piccadilly)
Potential Visible Project - Port au Port Wind Farm
Southeast View (Stantec Image BC11-7070)



VP 43 - Route 463
Potential Visible Project - T-Line
Southwest View (Stantec Image BC8-6898)



VP 44 - Route 463
Potential Visible Project - Port au Port Wind Farm / T-Line
Northwest View (Stantec Image BC9-7681)



VP 45 - Route 460
Potential Visible Project - Port au Port Wind Farm / T-Line
Northwest View (Stantec Image BC7-7176)



VP 46 - Route 460
Potential Visible Project - Port au Port Wind Farm / T-Line
Northwest View (Stantec Image BC3-6688)

Port au Port Wind Farm



VP 47 - Route 460
Potential Visible Project - Port au Port Wind Farm / T-Line
Northeast View (Stantec Image BC4-6724)



VP 48 - Route 460
Potential Visible Project - Port au Port Wind Farm / T-Line
Northwest View (Stantec Image BC2-6605)



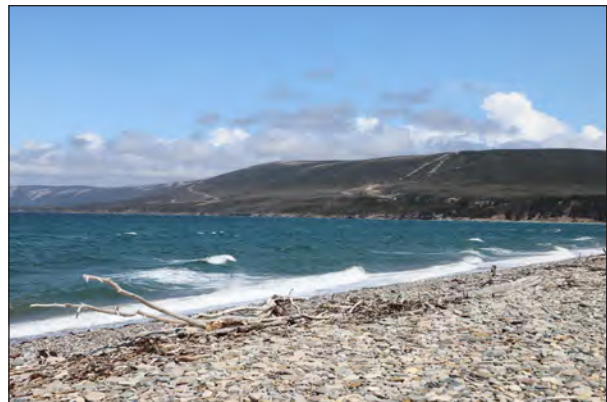
VP 49 - Route 460 (Felix Cove)
Potential Visible Project - Port au Port Wind Farm / T-Line
Northwest View (Stantec Image BC1-6560)



VP 50 - Route 460
Potential Visible Project - Port au Port Wind Farm / T-Line
Northeast View (Stantec Image 49-9373)



VP 51 - Route 460
Potential Visible Project - Port au Port Wind Farm / T-Line
Northeast View (Stantec Image 50-9380)

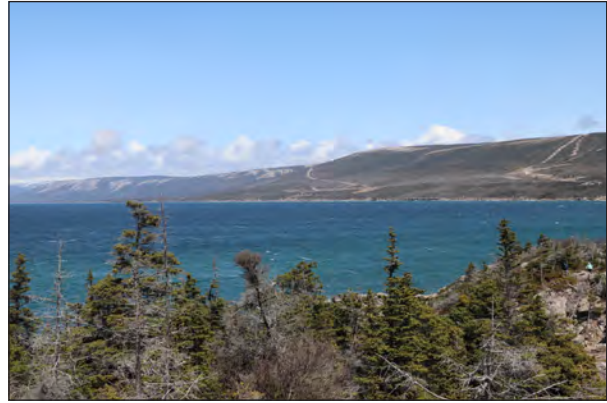


VP 52 - Danny's Walking Trail (parking lot)
Potential Visible Project - Port au Port Wind Farm / T-Line
Northeast View (Stantec Image 51-9396)

Port au Port Wind Farm



VP 53 - Danny's Walking Trail
Potential Visible Project - Port au Port Wind Farm / T-Line
Northeast View (Stantec Image 54-9451)



VP 54 - Danny's Walking Trail
Potential Visible Project - Port au Port Wind Farm / T-Line
Northeast View (Stantec Image 52-9414)



VP 55 - Danny's Walking Trail
Potential Visible Project - Port au Port Wind Farm / T-Line
Northeast View (Stantec Image 53-9439)



VP 56 - Our Lady of Mercy Church Complex
Potential Visible Project - Port au Port Wind Farm / T-Line
Northeast View (Stantec Image 56-9495)



VP 57 - Main Street (Bellmans Cove)
Potential Visible Project - Port au Port Wind Farm / T-Line
Northeast View (Stantec Image BC33-7761)



VP 58 - Bellmans Cove
Potential Visible Project - Port au Port Wind Farm / T-Line
Northeast View (Stantec Image BC34-8805)

Notes:

1. The proposed 230 kV transmission line is noted as "T-Line".
2. Inclusion of photos in this photolog does not guarantee visibility.

PHOTO LOG

Project Nujio'qonik GH2
Port au Port Peninsula and the Codroy Valley,
Newfoundland

Port au Port Wind Farm



VP 59 - Aguathuna Road (Aguathuna)
Potential Visible Project - Port au Port Wind Farm / T-Line
Northeast View (Potential T-Line interconnection, Stantec Image BC35-7893)



VP 60 - Mand Road (Boswarlos, overlook)
Potential Visible Project - Port au Port Wind Farm / T-Line
Northeast View (View inland as well, Stantec Image BC36-7926)



VP 61 - Boswarlos Peninsula
Potential Visible Project - Port au Port Wind Farm
Southwest View (View to East as well, Stantec Image BC38-8067)



VP 62 - Boswarlos Peninsula
Potential Visible Project - Port au Port Wind Farm
South View (View to East as well, Stantec Image BC39-8037)



VP 63 - Route 460 (Port au Port cemetery)
Potential Visible Project - Port au Port Wind Farm / T-Line
West View (Stantec Image BC40-8622)



VP 64 - Hynes Road
Potential Visible Project - Port au Port Wind Farm / T-Line
West View (Stantec Image BC41-8605)

Port au Port Wind Farm



VP 65 - Radar Station
Potential Visible Project - Port au Port Wind Farm
Northeast View (View West as well, Stantec Image BC50-8468)



VP 66 - Route 462
Potential Visible Project - T-Line
North View (Stantec Image BC42-8167)



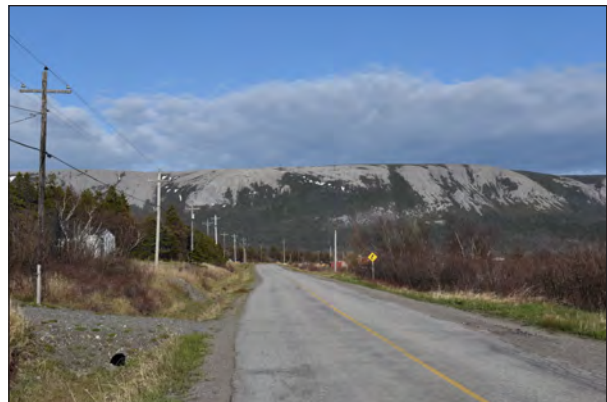
VP 67 - Route 462
Potential Visible Project - Port au Port Wind Farm
Southeast View (Stantec Image BC48-8324)



VP 68 - Route 462 (Point au Mal)
Potential Visible Project - Port au Port Wind Farm
Southeast View (Stantec Image BC47-8291)



VP 69 - Route 462 (Point au Mal)
Potential Visible Project - Port au Port Wind Farm
Southeast View (Stantec Image BC46-8279)



VP 70 - Route 462 (Point au Mal)
Potential Visible Project - Port au Port Wind Farm
Southeast View (Stantec Image BC45-8259)

Port au Port Wind Farm



VP 71 - Route 462 (Fox Island River)
Potential Visible Project - Port au Port Wind Farm
Southeast View (Stantec Image BC44-8234)



VP 72 - Route 462 (Fox Island River)
Potential Visible Project - Port au Port Wind Farm
Southeast View (Stantec Image BC43-8203)



VP 73 - Route 460 (Port au Port)
Potential Visible Project - Port au Port Wind Farm / T-Line
Northeast View (Stantec Image 27-8955)



VP 74 - Route 460 (Kippens)
Potential Visible Project - Port au Port Wind Farm
North View (Stantec Image 62-9537)



VP 75 - Island Pond Drive (Kippens)
Potential Visible Project - Port au Port Wind Farm / T-Line
North View (Stantec Image 61-9526)



VP 76 - Gallant Street (Stephenville)
Potential Visible Project - Port au Port Wind Farm
North View (Stantec Image 63-9540)

Port au Port Wind Farm



VP 77 - Fowlow Drive (Stephenville)
Potential Visible Project - Port au Port Wind Farm
Northwest View (Stantec Image 60-9514)



VP 78 - Queen Street Ext. (Stephenville)
Potential Visible Project - Port au Port Wind Farm
Northwest View (Stantec Image 59-9512)



VP 79 - Blanche Brook Park (Stephenville)
Potential Visible Project - Port au Port Wind Farm
Northeast View (Stantec Image 58-9504)



VP 80 - Legion Memorial (Stephenville)
Potential Visible Project - Port au Port Wind Farm
Northwest View (Stantec Image 69-9642)



VP 81 - West Street (Stephenville)
Potential Visible Project - Port au Port Wind Farm
Northwest View (Stantec Image 65-9554)



VP 82 - Caroline Avenue (Stephenville)
Potential Visible Project - Port au Port Wind Farm
Northwest View (Stantec Image 68-9632)

Port au Port Wind Farm



VP 83 - Massachusetts Drive (Stephenville)
Potential Visible Project - Port au Port Wind Farm
Northwest View (Stantec Image 66-9576)



VP 84 - Massachusetts Drive (Stephenville)
Potential Visible Project - Port au Port Wind Farm
Northwest View (Stantec Image 67-9608)



VP 85 - Joey's Lookout (Stephenville)
Potential Visible Project - Port au Port Wind Farm
Northeast View (Stantec Image BC49-8420)

230 kV Transmission Line



VP T1 - Dump Road/Whaleback Trail (Stephenville)
Potential Visible Project - T-Line
East View (Stantec Image BC51-8708)



VP T2 - Stephenville Dome (Stephenville)
Potential Visible Project - T-Line
Northeast View (Stantec Image BC53-8762)



VP T3 - Route 490 (Stephenville)
Potential Visible Project - T-Line
Northeast View (Stantec Image BC54-8790)



VP T4 - Route 490 (Stephenville)
Potential Visible Project - T-Line
East View (Stantec Image BC56-8858)



VP T5 - Route 490 / Newfoundland T'Railway
Potential Visible Project - T-Line
Northeast View (Stantec Image BC55-8847)



VP T6 - Trans Canada Highway
Potential Visible Project - T-Line
West View (Stantec Image 73-6985)

230 kV Transmission Line



VP T7 - Route 480
Potential Visible Project - T-Line
Southwest View (Stantec Image 72-9680)



VP T8 - Trans Canada Highway
Potential Visible Project - T-Line
Northeast View (Stantec Image 71-9667)



VP T9 - Trans Canada Highway
Potential Visible Project - T-Line
West View (Stantec Image 75-9711)



VP T10 - Trans Canada Highway
Potential Visible Project - T-Line
Southwest View (Stantec Image 78-9736)



VP T11 - Trans Canada Highway
Potential Visible Project - T-Line
Northwest View (Stantec Image 81-9765)



VP T12 - Trans Canada Highway
Potential Visible Project - T-Line
Northeast View (Stantec Image 79-9751)

230 kV Transmission Line



VP T13 - Steel Mountain Road
Potential Visible Project - T-Line
North View (Stantec Image 82-9783)



VP T14 - Steel Mountain Road
Potential Visible Project - T-Line
Northeast View (Stantec Image 83-9809)



VP T15 - Trans Canada Highway
Potential Visible Project - T-Line
Southwest View (Stantec Image 85-9829)



VP T16 - Trans Canada Highway
Potential Visible Project - T-Line
Northeast View (Stantec Image 86-9834)



VP T17 - Trans Canada Highway
Potential Visible Project - T-Line
North View (Stantec Image 88-9861)



VP T18 - Trans Canada Highway
Potential Visible Project - T-Line
Southwest View (Stantec Image 91-9892)

230 kV Transmission Line



VP T19 - Trans Canada Highway
Potential Visible Project - T-Line
Southeast View (Stantec Image 92-9902)



VP T20 - Trans Canada Highway
Potential Visible Project - T-Line
Southeast View (Stantec Image 96-9948)



VP T21 - Trans Canada Highway
Potential Visible Project - T-Line
East View (Stantec Image 97-9950)

Notes:
1. The proposed 230 kV transmission line is noted as "T-Line".
2. Inclusion of photos in this photolog does not guarantee visibility.

PHOTO LOG

Project Nujio'qonik GH2
Port au Port Peninsula and the Codroy Valley,
Newfoundland

Codroy Wind Farm



VP C1 - Trans Canada Highway
Potential Visible Project - Codroy Wind Farm
Southwest View (Stantec Image 93-9924)



VP C2 - Trans Canada Highway
Potential Visible Project - Codroy Wind Farm
Southwest View (Stantec Image 94-9931)



VP C3 - Trans Canada Highway
Potential Visible Project - Codroy Wind Farm
Southwest View (Stantec Image 95-9943)



VP C4 - Trans Canada Highway
Potential Visible Project - Codroy Wind Farm
South View (Stantec Image 99-9996)



VP C5 - Trans Canada Highway
Potential Visible Project - Codroy Wind Farm
South View (Stantec Image 134-9978)



VP C6 - Trans Canada Highway
Potential Visible Project - Codroy Wind Farm
South View (Stantec Image 150-9989)

Codroy Wind Farm



VP C7 - Trans Canada Highway
Potential Visible Project - T-Line / Codroy Wind Farm (?)
South View (Stantec Image 186-0003)



VP C8 - Trans Canada Highway
Potential Visible Project - Codroy Wind Farm
West View (Stantec Image 187-0018)



VP C8a - Trans Canada Highway
Potential Visible Project - Codroy Wind Farm
South View (Stantec Image 187-0025)



VP C9 - Trans Canada Highway
Potential Visible Project - Codroy Wind Farm
Southwest View (Stantec Image 188-0036)



VP C10 - Trans Canada Highway
Potential Visible Project - Codroy Wind Farm
East View (Stantec Image 189-0039)



VP C11 - Trans Canada Highway
Potential Visible Project - Codroy Wind Farm / T-Line
Northwest View (Stantec Image 190-0049)

Codroy Wind Farm



VP C12 - Trans Canada Highway
Potential Visible Project - T-Line
North View (Stantec Image 191-0064)



VP C13 - Trans Canada Highway
Potential Visible Project - Codroy Wind Farm / T-Line
West View (Stantec Image 193-0075)



VP C14 - Trans Canada Highway
Potential Visible Project - Codroy Wind Farm / T-Line
West View (Stantec Image 194-0082)



VP C15 - Codroy Pond
Potential Visible Project - Codroy Wind Farm
Southeast View (Stantec Image 195-0089)



VP C16 - Trans Canada Highway
Potential Visible Project - Codroy Wind Farm
North View (Stantec Image 196-0096)



VP C17 - South Branch
Potential Visible Project - Codroy Wind Farm
North View (Stantec Image 198-0102)

Codroy Wind Farm



VP C18 - Trans Canada Highway
Potential Visible Project - Codroy Wind Farm
Northwest View (Stantec Image 199-0115)



VP C19 - Trans Canada Highway
Potential Visible Project - Codroy Wind Farm
Northwest View (Stantec Image 200-0124)



VP C20 - Trans Canada Highway
Potential Visible Project - Codroy Wind Farm
Northwest View (Stantec Image 201-0137)



VP C21 - Trans Canada Highway
Potential Visible Project - Codroy Wind Farm / T-Line
Northwest View (Stantec Image 202-0159)



VP C22 - Trans Canada Highway
Potential Visible Project - Codroy Wind Farm / T-Line
North View (Stantec Image 203-0164)



VP C23 - Trans Canada Highway
Potential Visible Project - Codroy Wind Farm / T-Line
Northeast View (Stantec Image 204-0172)

Codroy Wind Farm



VP C24 - Route 405 (Saint Fintan's)
Potential Visible Project - Codroy Wind Farm
Southwest View (Stantec Image 205-0180)



VP C25 - Route 405 (Saint Fintan's)
Potential Visible Project - Codroy Wind Farm
Southwest View (Stantec Image 206-0184)



VP C26 - Route 405 (Highlands)
Potential Visible Project - Codroy Wind Farm
South View (Stantec Image 207-0192)

Notes:
1. The proposed 230 kV transmission line is noted as "T-Line".
2. Inclusion of photos in this photolog does not guarantee visibility.

PHOTO LOG

Project Nujio'qonik GH2
Port au Port Peninsula and the Codroy Valley,
Newfoundland