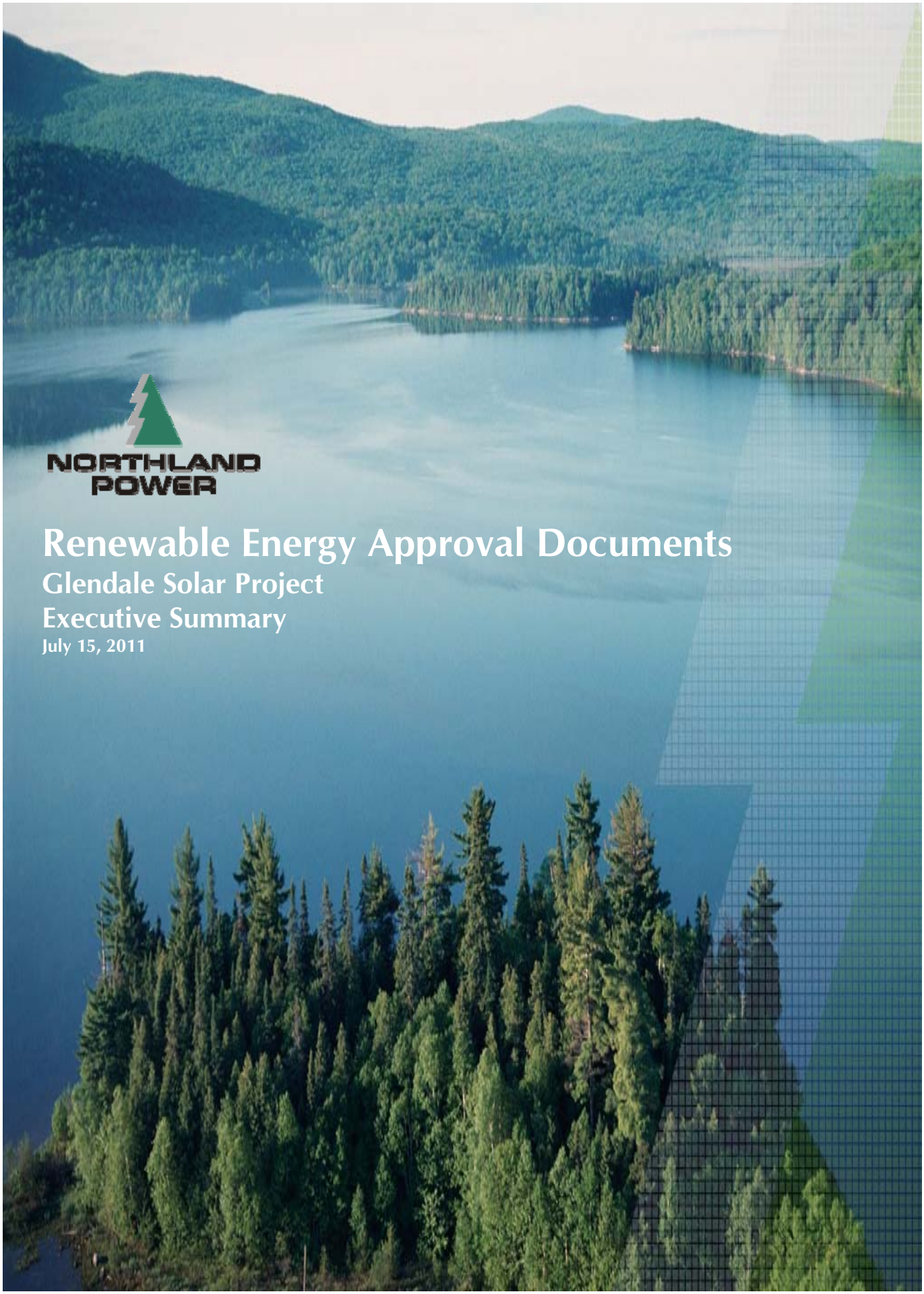


NORTHLAND POWER

# Renewable Energy Approval Documents

## Glendale Solar Project

## Executive Summary

July 15, 2011

July 15, 2011

# Northland Power Inc.
# Glendale Solar Project

## Executive Summary

## Contents

# 1. Introduction

The Glendale Solar Project (hereinafter referred to as the "Project") is a proposed 10-megawatt (MW) solar farm in the Township of South Glengarry, within the United Counties of Stormont, Dundas and Glengarry. The Project is being developed by Northland Power Solar Glendale L.P. (hereinafter referred to as "Northland"). As required, Northland is commencing with the Renewable Energy Approval (REA) described in Ontario Regulation 359/09 under the *Environmental Protection Act*.

Northland is the proponent of the Project. The contact information is as follows:

Tom Hockin
Development Manager - Renewables
Northland Power Inc.
30 St. Clair Ave. West, 17th Floor
Toronto, ON
M4V 3A1

Tel: 647-288-1046
Fax: 416-962-6266
Email: Tom.Hockin@Northlandpower.ca

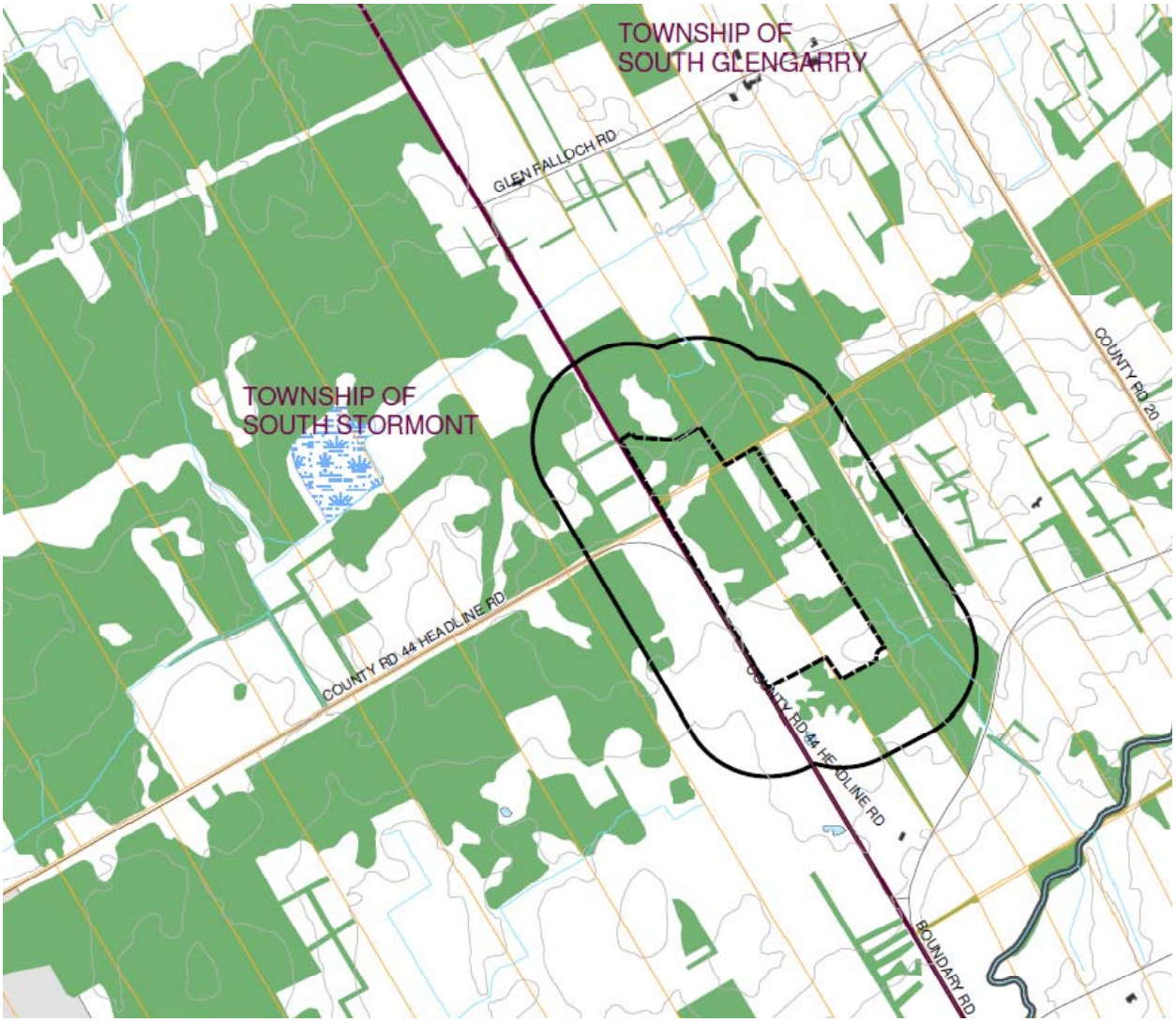
Northland has retained Hatch Ltd. (Hatch) to assist Northland in meeting the REA requirements. Contact information for Hatch is as follows:

Sean Male, MSc
REA Coordinator
Hatch Ltd.
4342 Queen Street, Suite 500
Niagara Falls, ON
L2E 7J7

Tel: 905-374-0701, Ext. 5280
Fax: 905-374-1157
Email: smale@hatch.ca

## 1.1 Project Location

The Project is located south of the Town of Martintown. The Project location is approximately 45 hectares (ha) in size and located on Headline Road.



## 1.2 Project Proponent

Northland Power develops and operates clean and green power generation projects, mainly in the provinces of Ontario and Quebec, with Saskatchewan being added to that list shortly. Our facilities produce about 900 MW of electricity. Northland has been in business since 1987, and has been publicly traded on the Toronto Stock Exchange since 1997.

Sustainability is a core value at Northland Power. All of their development efforts and operational practices focus on ensuring the ability to provide long-term benefits to their customers, investors, employees, communities and partners.

Sustainability has many dimensions for Northland Power.

- Environmental: Northland Power was founded on the belief that clean and green energy sources are vital to the future of our planet. Northland Power produces nothing else. Their construction and operational practices are engineered to meet the highest environmental standards, even in jurisdictions where lower standards are legislated.
- Health and Safety: Northland Power ensures that their staff has the knowledge, tools and time to work safely. This is Northland's first priority. Their culture of safety, respect and independence helps to ensure they attract and retain the people that they need to perform.
- Operational: Northland Power maintains and reinvests constantly in their operating assets to achieve maximum efficiency and economic life.
- Community: Northland Power takes an active interest in its host communities, to ensure they remain vibrant, healthy places to live.
- Financial: Northland Power consistently chooses long-term success over short-term gain. Northland Power only pursues projects that meet strict return thresholds and have creditworthy customers. As a result, they have paid stable monthly dividends since 1997.

Northland's business model is to develop, finance, construct, own and operate its facilities for the duration of the project's useful life. As such, Northland considers itself to be a member of the local community in which it operates and has a track record of being a good neighbour.

## 1.3 Project Benefits

***Green Energy Act and Feed-in-Tariff (FIT) Program***

The Ontario Government passed the "Green Energy and Green Economy Act" into law on May 14, 2009. The Act is expected to boost investment in renewable energy projects and increase conservation, creating green jobs and economic growth.

The Ontario Government lists the following objectives for the Ontario Green Energy Act:

- Spark growth in clean and renewable sources of energy such as solar, wind, hydro, biomass and biogas in Ontario.
- Create the potential for savings and better managed household energy expenditures through a series of conservation measures.

- Create 50,000 jobs for Ontarians in its first 3 years.

The FIT program was launched on October 1, 2009 to encourage use of renewable energy sources, and promote growth within the environmental industry. The Green Energy and Green Economy Act (2009) enabled the creation of the FIT program. Taken from the Program's website, the FIT program will create new jobs, boost economic activity and further the development of renewable energy technology and expertise in Ontario, while helping to phase out coal-fired electricity generation by 2014.

The Ontario Power Authority awarded 184 FIT contracts to renewable power developers in Ontario on April 8, 2010. Northland Power was awarded a total of 13 ground mount solar contracts for proposed development throughout the province. These projects are currently proceeding through the REA process.

***Advantages of Solar Energy***

Solar power has a multitude of advantages compared to fossil fuel powered energy plants. Most simplistically, the fuel is free. As many fossil fuels are expected to increase in price, having solar energy on the grid at a set price will give greater stability to future energy prices. Another key benefit is the lack of polluting emissions. With solar PV there are no emissions; this ensures that the surrounding local community will not have to live with poor air quality, disruptive sounds or noxious odours. Also, since solar PV is modular, it is well suited to distributed generation, meaning the power can be produced close to where it will be consumed. In addition, the solar PV systems are comprised of safe, common materials that will not affect the lands on which they are located, allowing for easy remediation upon decommissioning, unlike the vast majority of power plants.

As a source of electricity, solar PV has even more advantages when compared to other types of electricity generation. Peak power production with solar PV coincides with peak demand, during the middle of the day, reducing the need for gas fired peaking power plants.

Solar PV does not require any moving parts or water, unlike most other generation technologies, which greatly reduces its impact on the environment, its maintenance costs and its noise levels.

## 1.4 Project Description

Northland proposes to install ground mounted stationary photovoltaic panels which, when exposed to sunlight, will generate direct current (DC) electricity. The DC electricity will be conveyed through underground cabling to an inverter which converts the DC electricity to alternating current (AC) electricity. The electricity will then be conveyed to a single substation which will increase the voltage to 44 kV and a short transmission line will transfer the electricity to a connection tie-in point with the local distribution grid. The tie-in point is located on Headline Road at the west end of the Project. The construction period is estimated to be approximately 6 months in duration, with Project commissioning anticipated in Spring 2013.

# 2. REA Process

Ontario Regulation (O. Reg.) 359/09 – Renewable Energy Approvals Under Part V.0.1 of the Act, (herein referred to as the REA Regulation) made under the *Environmental Protection Act* identifies the Renewable Energy Approval (REA) requirements for renewable energy projects in Ontario. The

Project is considered to be a Class 3 facility, as it is ground mounted and has a name plate capacity greater than 10 kW, and therefore requires a REA.

The REA Regulation details the required activities and reports to be completed and submitted in order to obtain the REA. The activities include Aboriginal, public, municipal and agency consultation in order to provide information on the Project to these groups and obtain feedback. Upon completion of these activities, they will be documented in the Consultation Report and submitted to the Ontario Ministry of the Environment (MOE) as part of the REA application.

The REA Regulation requires the preparation of reports, including:

- Project Description Report
- Construction Plan Report
- Design and Operations Report
- Decommissioning Plan Report
- Noise Report
- Natural Heritage Records Review, Site Investigations, Evaluation of Significance and Environmental Impact Study Reports
- Water Body Records Review, Site Investigation and Environmental Impact Study Reports
- Stage 1 and 2 Archaeological Assessment Reports.

As per Sections 16 and 17 of the REA Regulation, these draft documents are to be made available to the Aboriginal communities greater than 60 days from the second Public Meeting and to the public at least 60 days from the second Public Meeting. In addition, a summary of each document is to be prepared and sent to the Aboriginal communities.

In addition, a Letter of Confirmation is to be obtained from the Ontario Ministry of Natural Resources based on their review of the Natural Heritage Reports and is to be provided to the same groups aforementioned, at the same time as the draft documents. Similarly, a Letter of Confirmation is to be obtained from the Ontario Ministry of Tourism and Culture based on their review of the Stage 1 and 2 Archaeological Assessment Report and provided to the same groups and at the same time as the draft documents.

Also, as per section 20 of the REA Regulation, a determination is to be made as to whether or not a heritage resource is located on the project site and whether an assessment is required.

Therefore, this package has been prepared to meet these requirements and the reports as listed above are contained within. For clarity and ease of understanding, the Natural Heritage and Water Body Reports should be read in the order in which they appear below.

## 2.1 Brief Summary of the Glendale Solar Project REA Reports

A brief summary of some of the Glendale Solar REA Reports is provided below. A description of the purpose of each of the REA Reports is provided in Figure 2, while Figure 3 provides the location of

the complete summary of each REA report, along with the required confirmation letters and report on heritage considerations.

The Natural Heritage and Water Body reports have been prepared to identify potential negative environmental effects the Project may have on existing significant natural features or waterbodies, respectively.

Environmental Impact Studies have been prepared to identify potential negative environmental effects that all phases of the Project may have on the significant natural features and waterbodies. Mitigation measures have been proposed to prevent these effects from occurring or minimize the magnitude, extent, duration and frequency in the event that they do occur to an acceptable level.

A Confirmation Letter from the Ontario Ministry of Natural Resources is included in Appendix O that confirms that the Natural Heritage reports satisfy the REA Regulation criteria.

An archaeological assessment has been conducted on the Glendale project location which included a Stage 1 background study of past archaeological investigations and known archaeological sites within a 2-km radius of the Glendale Solar Project location. It also included a systematic 5-m interval Stage 2 archaeological survey of all of the Leased Lands in the property.

The office of the Ministry of Tourism and Culture has reviewed the Archaeological Assessment Report in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18, and accepted its findings.

Research and agency consultation undertaken has not identified the need for a heritage impact assessment under Section 23 of the REA Regulation. A noise study has also been undertaken and identifies mitigation measures the project will incorporate in order to meet MOE requirements.

## 3. Next Steps

A second Public Meeting will be held for the Project (exact date and location to be determined). Everyone is welcome to attend this meeting and they are also welcome to ask questions about the Project during this 60-day comment period. Questions or concerns related to these reports should be sent to:

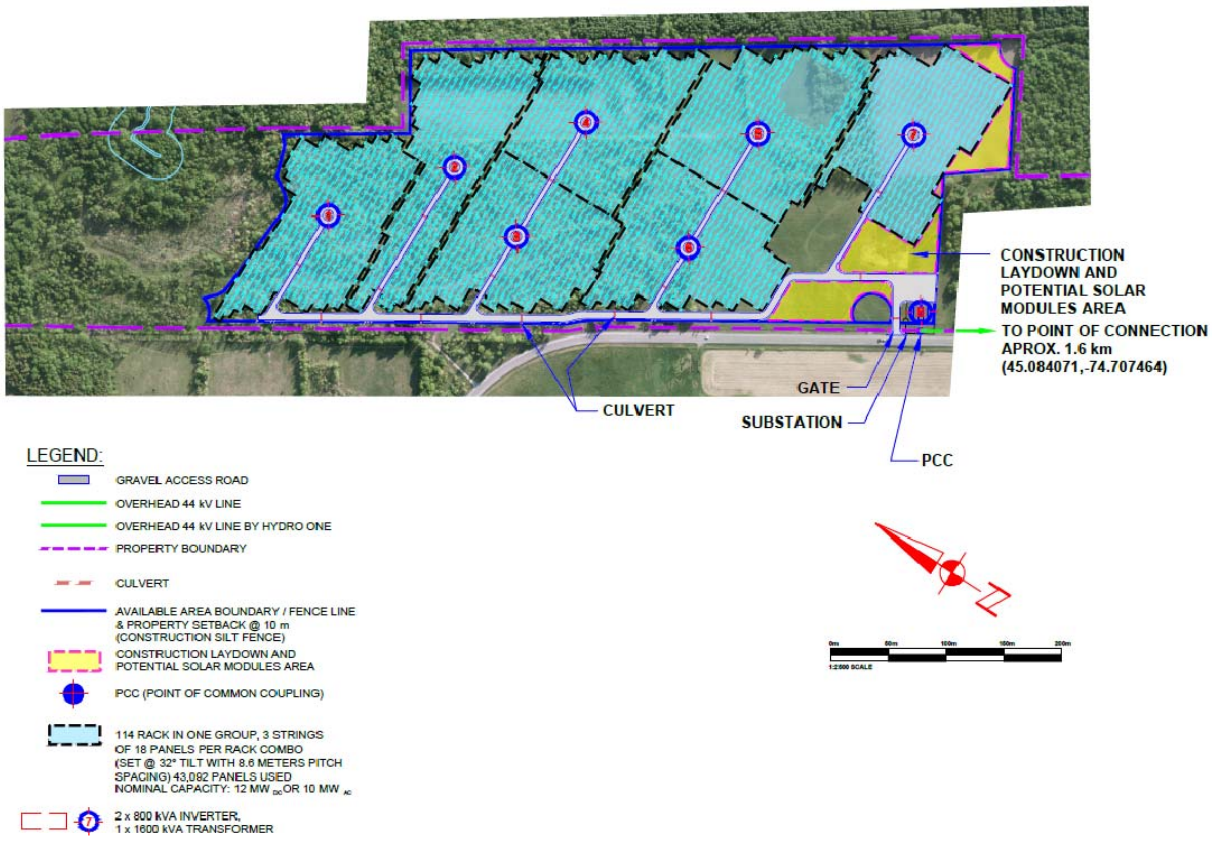
Sean Male, MSc
REA Coordinator
Hatch Ltd.
4342 Queen Street, Suite 500
Niagara Falls, ON
L2E 7J7

Tel: 905-374-0701, Ext. 5280
Fax: 905-374-1157
Email: smale@hatch.ca

Once the comments have been received, a Consultation Report will be prepared to show how those comments have been addressed and included in the design of the Project.

After the second Public Meeting, all the Reports and a REA Application Form will be sent to MOE for review and processing. The MOE has 6 months to review and make a decision on the Project. The MOE's decision will be posted for a 15-day review period on the Environmental Registry. Provided no appeal requests have been submitted, the Project will commence, pending receipt of all other required permits and approvals.

## Figure 1: Site Layout



## Figure 2: Report Name and Purpose

| Report Name | Purpose |
|---|---|
| Project Description Report | Summarizes Project location, construction and operational activities, potential environmental effects and mitigation, and social and environmental benefits. |
| Construction Plan Report | Provides details on the construction activities, timelines, materials, temporary uses of land and waste materials generated and environmental effects, mitigation and monitoring during construction. |
| Design and Operations Report | Provides the site layout plan, Project components, operations and maintenance activities, communications and emergency response plan, and environmental effects monitoring plan. |
| Decommissioning Plan Report | Provides the activities to be undertaken during decommissioning and restoring the Project site. |
| Natural Heritage Records Review Report | Provides information from existing documentation on natural heritage features including woodlots, valleylands, wetlands, Areas of Natural and Scientific Interest and wildlife habitat. |
| Natural Heritage Site Investigations Report | Documents the results of the site investigations to identify and confirm natural heritage features on and within 120 m of the Project. |
| Natural Heritage Evaluation of Significance Report | Evaluates the significance of any natural heritage features located within 120 m of the Project. |
| Natural Heritage Environmental Impact Study | Identifies potential adverse environmental effects on significant natural heritage features, proposes mitigation measures to prevent or minimize adverse effects and provides monitoring program. |
| Water Body Records Review Report | Provides information from existing documentation on waterbodies including lakes, permanent and intermittent streams and groundwater seepage areas. |
| Water Body Site Investigation Report | Documents the results of the site investigations to identify and confirm water body features on and within 120 m of the Project. |
| Water Body Environmental Impact Study | Identifies potential adverse environmental effects on waterbodies, proposes mitigation measures to prevent or minimize adverse effects and provides monitoring program. |
| Stage 1 and 2 Archaeological Assessment Report | Documents the results of the Stage 1 assessment which is a desktop study identifying any archaeological potential and the Stage 2 assessment which is a site investigation confirming the archaeological potential. |
| Heritage Resources | Documents the results of the assessment of potential effects on protected properties and heritage resources. |
| Noise Study Report | Documents the results of noise modeling to identify noise emissions levels at nearby sensitive receptors and mitigation requirements to meet MOE noise emissions guidelines. |

## Figure 3: Appendices of Project Report Summaries

Contained as appendices to this Executive Summary are as follows:

- Appendix A: Project Description Report Summary
- Appendix B: Construction Plan Summary
- Appendix C: Design and Operations Report Summary
- Appendix D: Decommissioning Plan Summary
- Appendix E: Natural Heritage Records Review Report Summary
- Appendix F: Natural Heritage Site Investigation Report Summary
- Appendix G: Natural Heritage Evaluation of Significance Report Summary
- Appendix H: Natural Heritage Environmental Impact Study Summary
- Appendix I: Water Body Records Review Report Summary
- Appendix J: Water Body Site Investigation Report Summary
- Appendix K: Water Body Environmental Impact Study Summary
- Appendix L: Stage 1 and 2 Archaeological Assessment Report Summary and
  Stage 1 and 2 Archaeological Assessment Report – Additional Lands Summary
- Appendix M: Noise Study Summary
- Appendix N: Protected Properties and Heritage Resource Information
- Appendix O: Letter of Confirmation – Ontario Ministry of Natural Resources
- Appendix P: Letters of Confirmation – Ontario Ministry of Tourism and Culture

# Appendix A

## Project Description
## Report Summary

**Northland Power Inc.**
**Glendale Solar Project**

# Summary

# Project Description Report

## 1. Introduction

As per Section 17 of the Renewable Energy Approvals Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Project Description Report for the Glendale Solar Project.

Northland Power Inc. on behalf of Northland Power Solar Glendale L.P. (hereinafter referred to as "Northland") is proposing to develop a 10-megawatt (MW) solar photovoltaic (PV) Project titled Glendale Solar Project (hereinafter referred to as the "Project"). The Project site will be located on approximately 45 hectares (ha) of land, in the Township of South Glengarry, within the United Counties of Stormont, Dundas and Glengarry.

Table 1 of the REA Regulation requires proponents of Class 3 solar projects to prepare a Project Description Report (PDR). The PDR is prepared as one of the first Project documents once the REA process commences and is made available for public review prior to the first public meeting. The purpose of the PDR is to provide preliminary information regarding the Project to members of the public, Aboriginal groups, municipalities and other government agencies. The contents of the PDR are summarized in the following sections.

## 2. Summary of Project

The proposed Project consists of a 10-MW Class 3 solar facility, constructed on privately owned land in the Township of South Glengarry. Glendale Solar Project has entered into a lease agreement with the private landowner for a lease term of 30 years. Glendale Solar Project has obtained a contract from the Ontario Power Authority (OPA) to buy the power produced by the proposed facility under the Feed-In-Tariff (FIT) program for a period of 20 years.

Construction of the proposed facility would occur over a 4 to 8 month period with major construction activities including site preparation, access road construction, installation of solar panels (including footings, support structures and panels), installation of inverters and transformer and all electrical cabling and site rehabilitation following construction.

The facility would operate 365 d/yr, generating electricity when sufficient solar irradiation conditions exist. Inspection and maintenance activities would be conducted periodically through the year (every 2 to 3 months), with primary activities including inspection of structures and interconnections. The proposed facility would not consume any fuels nor produce any waste as a result of generation activities.

# 3. Potential Environmental Effects

The PDR summarized the existing environmental features on the Project site. The site primarily consists of agricultural land and a woodland. A tributary of Glen Falloch Drain occurs within 120 m of the northern portion of the Project site while a tributary of Raisin River occurs within 120 m southeast of the Project site.

The PDR also identified preliminary potential environmental effects of the Project including

- potential erosion and sedimentation due to construction activities
- temporary loss of agricultural lands due to facility installation and operation
- removal of tree species in the woodland
- noise emissions from the invertors and transformer.

Mitigation measures were identified to prevent or eliminate those effects. Potential effects and mitigation measures were assessed in more detail in other Project reports.

# Appendix B

## Construction Plan
## Report Summary

July 15, 2011

**Northland Power Inc.**
**Glendale Solar Project**

# Summary

# Construction Plan Report

## 1. Introduction

As per Section 17 of the Renewable Energy Approvals (REA) Ontario Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Construction Plan Report for the Glendale Solar Project.

Northland Power Inc. on behalf of Northland Power Solar Glendale L.P. (hereinafter referred to as "Northland") is proposing to develop a 10-megawatt (MW) solar photovoltaic (PV) Project titled Glendale Solar Project (hereinafter referred to as the "Project"). The Project will be located on approximately 45-hectares (ha) of land, in the Township of South Glengarry, within the United Counties of Stormont, Dundas and Glengarry.

The proposed Project will use solar photovoltaic technology to generate electricity. The solar modules will be mounted on fixed steel supports and arranged in the form of 7 arrays, each of 1.6 MW. Electricity generated by solar photovoltaic modules from each array will be converted from direct current (DC) to alternating current (AC) by an inverter, and subsequently stepped up from a medium voltage to 44 kV in order to connect to the nearby distribution line. The interconnection point will be on Boundary Road, west of the Project location. The Project will connect to a distribution line that Hydro One will extend approximately 1.7 km from its current location.

## 2. Construction

The construction process of the Project consists of four phases:

- Phase 1 – Site Preparation
- Phase 2 – Construction and Installation of Plant
- Phase 3 – Testing and Commissioning
- Phase 4 – Site Restoration.

The site work is scheduled to start in late summer of 2012 and have an estimated 6 to 8 month construction period.

### 2.1 Phase 1 - Site Preparation

Site preparation refers to all necessary activities prior to the construction of foundations, substation, and installation of the PV modules. It includes surveying/staking, site clearing and grubbing,

construction of access roads and drainage systems, installation of security gate and fencing, and construction of a staging area.

The site preparation work will take place in September 2012.

## 2.2 Phase 2 - Construction and Installation of Plant

Construction and installation of the facility consists of building foundations, trenches for cabling, structural support and finally installation of the panels on the structural support. The substation and associated electrical equipment will also be installed. This includes the underground and above ground cabling on the Project site. In addition, an overhead distribution line to transmit power from the Project substation to the local distribution network will be installed.

The construction and installation of the plant will take place from October 2012 to December 2012.

## 2.3 Phase 3 – Testing and Commissioning

Testing and commissioning will be performed on the installation prior to start-up and connection to the power grid. Solar modules, inverters, collection system, and substation will be checked for system continuity, reliability, and performance standards. If problems or issues are identified, modifications will be made prior to start-up.

The testing and commissioning will take place in December 2012.

## 2.4 Phase 4 – Site Restoration

Site restoration will be applicable for the entire Project location. The main objective will be to re-instate the area to the original pre-construction condition, such as the ecosystem, vegetation, and drainage. All construction material, equipment, temporary facilities, and waste will be removed from the site. Topsoil will be backfilled where required, including landscaping to achieve proper drainage. Revegetation will include planting of native plants and hydro-seeding where required.

The revegetation to the extent possible will take place in February 2013.

# 3. Environmental Effects

Environmental effects and proposed mitigation measures are summarized in the table below.

| Environmental Feature | Anticipated Impact | Proposed Mitigation |
|---|---|---|
| Soils | Negative effects on soil quality, loss of soils due to erosion and soil compaction. | Erosion and sedimentation control measures will be implemented and soil loosening measures could be applied, if necessary. |
| Groundwater | Pumping of groundwater could lower water table locally. | Limited impacts due to the duration of pumping (e.g., only during excavations). Any pumped water will be treated. |
| Surface Water Quality | Surface water quality could be impacted by erosion/ sedimentation of excavated or exposed soils, erosion caused by increased runoff from impervious or less pervious areas, or deposition of fugitive dust. | Erosion and sedimentation control measures, spill prevention and response plan, air quality measures will all mitigate impacts. |

| Environmental Feature | Anticipated Impact | Proposed Mitigation |
|---|---|---|
| Aquatic Habitat and Biota | Limited impacts, as a 30 m setback from all watercourses. Only indirect impacts from increased sediment loads in watercourses. | Erosion and sedimentation control measures will mitigate impacts. |
| Vegetation | Minor removal of vegetation and trees from a wooded area to occur. Dust deposition and spills could also impact vegetation. | In order to minimize potential losses from surrounding vegetation communities, areas where clearing is required will be well marked, and workers will be instructed not to enter areas of natural vegetation. |
| Wildlife | Impacts to wildlife could occur as a result of loss of habitat, disturbance from construction activities, or incidental mortality as a result of collision with construction vehicles. | In order to minimize the potential for habitat loss, work areas will be demarcated in order to ensure that the contractor does not work beyond those bounds. In order to minimize potential for disturbance or incidental take of wildlife, construction activities will be timed outside of the breeding bird period (generally May through July), wherever possible. Vegetation ground cover to be used on the Project location will be selected in consideration of promotion of wildlife features. |
| Air Quality and Noise | Dust may become airborne from vehicular traffic, heavy machinery use, and soil moving activities. Dust in the air can have a range of effects including, but not limited to: impacts on human health as a result of irritation to lungs, eyes, etc, which could impact construction workers or nearby residents, impacts on surface water quality and aquatic habitat if the dust is deposited into waterbodies, impacts on vegetation if heavy dust loads build up on photosynthetic surfaces, thereby resulting in mortality of the plants.<br><br>Construction and installation activities have the potential to result in increased noise levels on and within the vicinity of the Project location. | These mitigation measures are to include, as required, use of dust suppression (i.e., water) on exposed areas including access roads, stockpiles and work/laydown areas as necessary, hard surfacing (addition of coarse rock) of access roads or other high-traffic work areas, phased construction, where possible, to limit the amount of time soils are exposed, avoid earth-moving works during excessively windy weather. Stockpiles to be worked (e.g., loaded/unloaded) from the downwind side to minimize wind erosion, stockpiles and other disturbed areas to be stabilized as necessary (e.g., taped, mulched, graded, revegetated or watered to create a hard surface crust) to reduce/prevent erosion and escape of fugitive dust, dust curtain to be used on loaded dump trucks delivering materials from off site, workers to utilize appropriate personal protective equipment (e.g., masks, safety goggles) as necessary.<br><br>Construction and installation activities that produce a large amount of noise will be limited to daylight hours. Vehicles will also be regularly checked for properly working mufflers or other noise reducing equipment, and all construction equipment will meet MOE emission standards. |

| Environmental Feature | Anticipated Impact | Proposed Mitigation |
|---|---|---|
| Traffic | Increased traffic volumes and equipment delivery to the Project location and temporary disruption along routes utilized by construction vehicles may result in occasional delays to local community traffic flow during the construction period. | Mitigation measures include: designated transportation routes will be utilized; a police or security escort will be utilized to guide or accompany major equipment deliveries to the Project location if necessary; flagmen will be utilized as required to facilitate traffic flow and control if necessary; construction vehicles will be driven in a proper manner with respect for all traffic laws, signage providing any detour directions will be prominently displayed, vehicle imprints or erosion gullies will be repaired or regraded as necessary. |
| Municipal Roadways | The use of municipal roadways by construction vehicle traffic may result in some minor damage to roadways during the construction of the Project, given their proximity to the Project location. | Mitigation measures include: designated and appropriate transportation routes will be utilized; construction vehicles will be driven in a proper manner with respect for all traffic laws; roadways will be photographed prior to construction and damage to municipal roadways, above and beyond normal wear and tear, will be repaired as necessary. |
| Public and Construction Site Safety | Construction of the proposed development poses potential public and construction site safety concerns in the vicinity of the Project location. | Mitigation measures include: public access to the construction area will be prevented through the use of fences, gates, and security procedures; signage will be posted to notify the public of construction in the area; workers will be required to adhere to prescribed safety procedures; proper procedures for construction traffic will be developed, where required. |
| Waste Management | Construction activities will likely result in the generation of recyclable material, as well as construction and sanitary waste. | Mitigation measures include, construction waste will be properly stored on site prior to disposal off site at local, registered disposal facilities, all sanitary waste is to be contained and hauled off site by a designated hauler throughout the construction period, hazardous wastes will be properly stored in secure containers inside impervious berms or other containment areas until disposal off site at a registered facility, reuse and recycling will be practiced wherever possible. |
| Land Use | Lands within the Project location will be removed from agricultural production upon Project construction. | Land use could be retained upon completion of the Project. |
| Protected Properties | No protected properties, as defined in Section 19(1) of O. Reg. 359/09, exist in the vicinity of the Project location. | N/A |

| Environmental Feature | Anticipated Impact | Proposed Mitigation |
|---|---|---|
| Built Heritage and Cultural Heritage Landscapes | No negative effects to built heritage and cultural heritage landscapes are anticipated as no potential impacts to the resources were identified. | N/A |
| Archaeological Resources | A Stage 1 and 2 Archaeological Assessment was conducted for the Project location. No archaeological resources were found. | N/A |
| Spills | Spills of petroleum hydrocarbon materials from vehicles/ equipment operating on site, such as fuel or hydraulic oils, or spills of concrete materials from concrete trucks, could occur during the construction process. | Best management practices shall be implemented, including but not limited to: all refuelling and equipment maintenance activities will be conducted at specified locations; equipment is to be monitored to ensure it is well maintained and free of leaks; spill containment and clean-up supplies are to be maintained on site at all times; spills will be cleaned up immediately and reported accordingly. |

# 4. Conclusion

Weekly inspections will ensure conformance with environmental mitigation measures. Overall, no adverse impact to the environment is anticipated when the mitigation measures are implemented.

# Appendix C

## Design and Operations Report Summary

July 15, 2011

**Northland Power Inc.**
**Glendale Solar Project**

# Summary

# Design and Operation Plan Report

## 1. Introduction

As per Section 17 of the Renewable Energy Approvals (REA) Ontario Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Design and Operation Plan Report for the Glendale Solar Project.

Northland Power Inc. on behalf of Northland Power Solar Glendale L.P. (hereinafter referred to as "Northland") is proposing to develop a 10-megawatt (MW) solar photovoltaic (PV) Project titled Glendale Solar Project (hereinafter referred to as the "Project"). The Project will be located on approximately 45-hectares (ha) of land, in the Township of South Glengarry, within the United Counties of Stormont, Dundas and Glengarry.

The proposed Project will use solar photovoltaic technology to generate electricity. The solar modules will be mounted on fixed steel supports and arranged in the form of 7 arrays, each of 1.6 MW. Electricity generated by solar photovoltaic modules from each array will be converted from direct current (DC) to alternating current (AC) by an inverter, and subsequently stepped up from a medium voltage to 44 kV in order to connect to the nearby distribution line. The interconnection point will be on Boundary Road, west of the Project location. The Project will connect to a distribution line that Hydro One will extend approximately 1.7 km from its current location.

## 2. Facility Components

Facility components consist of security gate, fencing and lighting, access roads, drainage systems, foundations, trenches for cabling and instrumentation control, structural support and temporary construction staging area. The Project is designed to generate 10 MW (AC) by using 14 arrays of photovoltaic modules. Each array has a nominal capacity of 800 kW. The modules, inverters, intermediate transformers, AC switch, main step-up transformer, and the equipment control and monitoring system are the main electrical components of a solar facility.

## 3. Facility Operation Plan

The Project does not require any permanent on-site operator as it will be operated remotely. For general monitoring and maintenance purposes, two part-time or full-time local personnel may be hired and will be dispatched from a central operations office as needed. Any damage or faults with the PV modules and electrical systems will be alerted to staff remotely and repaired (or replaced) by facility staff or qualified professionals. Access to the site will be limited to Project personnel.

## 3.1 Maintenance

The weather conditions, such as the quantity and frequency of rain and snow at the Project location will determine the frequency of cleaning. At the very most, it is expected that the modules will require cleaning quarterly, but it is possible cleaning the modules will not be necessary at all. If required, water trucks will bring water to the site to supply the water required. No chemicals would be used for cleaning.

The transformers will be visually inspected on a monthly basis and their status recorded. Any leaks will be repaired immediately. Spill response equipment will be left on site or in the maintenance trucks should leaks be observed.

## 3.2 Environmental Effects Monitoring Plan

The Project Environmental Effects Monitoring Plan will be implemented through all phases of the Project. The purpose of the plan is to ensure that performance objectives and mitigation measures are working as designed to mitigate negative impacts. As well, it provides additional measures, if primary measures are not functioning. Table 5.2 in the Design and Operations Report provides the details of the proposed monitoring plan to monitor the impacts to the natural and social environments.

## 3.3 Emergency Response Plan

The Project Emergency Response Plan will be implemented through all phases of the Project. The purpose of the plan is to establish and maintain emergency procedures required for effectively responding to accidents and other emergency situations, and for minimizing associated losses. The Plan provides the emergency response and communications procedures to be used in response to these three potential emergency scenarios (i.e. fire, personal injury and spills).

All Project personnel will be trained in emergency response and communications procedures.

# Appendix D

## Decommissioning Plan
## Report Summary

July 15, 2011

**Northland Power Inc.**
**Glendale Solar Project**

# Summary

# Decommissioning Plan Report

## 1. Introduction

As per Section 17 of the Renewable Energy Approvals (REA) Ontario Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Decommissioning Plan Report for the Glendale Solar Project.

Northland Power Inc. on behalf of Northland Power Solar Glendale L.P. (hereinafter referred to as "Northland") is proposing to develop a 10-megawatt (MW) solar photovoltaic (PV) Project titled Glendale Solar Project (hereinafter referred to as the "Project"). The Project will be located on approximately 45-hectares (ha) of land, in the Township of South Glengarry, within the United Counties of Stormont, Dundas and Glengarry.

The proposed Project will use solar photovoltaic technology to generate electricity. The solar modules will be mounted on fixed steel supports and arranged in the form of 7 arrays, each of 1.6 MW. Electricity generated by solar photovoltaic modules from each array will be converted from direct current (DC) to alternating current (AC) by an inverter, and subsequently stepped up from a medium voltage to 44 kV in order to connect to the nearby distribution line. The interconnection point will be on Boundary Road, west of the Project location. The Project will connect to a distribution line that Hydro One will extend approximately 5.9 km from its current location.

As required, two scenarios were taken into consideration for the Decommissioning Plan which includes decommissioning after ceasing operation and decommissioning during construction should the Project be cancelled/abandoned during construction. The following provides the activities to be completed for the former scenario. For the latter scenario, the decommissioning activities depend on when the construction has ceased; however, the following provides a complete list of potential decommissioning activities under the latter scenario.

It is anticipated that the Project will have a useful lifetime of at least 20 years, which can be extended up to 50 years or more with proper maintenance, component replacement and repowering. It is assumed that the Project will be decommissioned after the 20-yr power purchase agreement with the Ontario Power Authority concludes.

## 2. Decommissioning Activities

### 2.1 Equipment Dismantling and Removal

All decommissioning of electrical devices, equipment, and wiring/cabling will be in accordance with local, municipal, provincial and federal agencies standards and guidelines. Any electrical

decommissioning will include obtaining the required permits and following lockout/tag out procedures before de-energizing, isolating, and disconnecting electrical devices, equipment and wiring/cabling.

## 2.2 Site Restoration

The proposed Project area will be restored to its pre-development state, subject to environmental requirements and the wishes of the landowner. The following will be undertaken:

- any trenches/drains excavated will be filled with suitable materials and leveled
- any roads or embankments will be removed completely, filled with suitable sub-grade material and leveled
- any compacted ground will be tilled, mixed with suitable sub-grade materials and leveled
- any damage to any existing tile drainage system caused by the Project will be repaired/restored
- prepared soil, with all the nutrients required by the crop to grow, will be spread wherever necessary.

## 2.3 Management of Waste and Excess Materials

All waste and excess materials will be disposed of in accordance with municipal, provincial and federal regulations. Waste that requires disposal will be disposed of in a provincially licensed facility by a provincially licensed hauler. Although hazardous waste is not anticipated on site (with the exception of the aforementioned transformer oil), any hazardous waste will be removed from site and disposed of in accordance with federal, provincial and municipal requirements.

## 2.4 Emergency Response

The Project Emergency Response Plan will be implemented through all phases of the Project. The purpose of the plan is to establish and maintain emergency procedures required for effectively responding to accidents and other emergency situations, and for minimizing associated losses. The Plan provides the emergency response and communications procedures to be used in response to these three potential emergency scenarios (i.e., fire, personal injury and spills).

All Project personnel will be trained in the emergency response and communications procedures.

# 3. Restoration of Land Negatively Affected by the Project

Following decommissioning of the Project, if any lands or water features are negatively affected by the Project, Northland is committed to restoring the site as close to its pre-construction state as feasible. This would be subject to environmental requirements and wishes of the landowner.

# Appendix E

## Natural Heritage
## Records Review Report Summary

July 15, 2011

**Northland Power Inc.**
**Glendale Solar Project**

# Summary

# Natural Heritage Records Review Report

## 1. Introduction

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Natural Heritage Records Review Report for the Glendale Solar Project.

Northland Power Glendale L.P. (hereinafter referred to as "Northland") is proposing to develop a Class 3 10-megawatt (MW) ground mounted solar photovoltaic (Solar PV) facility. The Study Area for the Project is located north of the city of Cornwall. The Project location is approximately 45 hectares (ha) in size, and is situated north of Rural Road 44 and west of Rural Road 20.

Section 25 of the REA Regulation requires proponents of Class 3 solar projects to undertake a Natural Heritage Records Review. Records were searched within a minimum distance of 1 km from the Project location from Ministry of Natural Resources (MNR), federal government, United Counties of Stormont, Dundas and Glengarry, Township of South Glengarry and other relevant sources.

## 2. Results

Key natural features and points of interest identified during the records review include the following:

- There is one small tributary of Glen Falloch Drain entering the Project location on the northeast side. Additionally, there is one other tributary of Glen Falloch Drain that comes within 120 m of the Project side on the north side. As well, there is a tributary of Raisin River within 120 m of the Project location on the southeast side.
- There are several woodlands on and within 120 m of the Project location. Raisin Region Conservation Authority indicated that wooded areas present on the Project are likely to be soft maple-cedar-white ash, cedar-poplar-soft maple, poplar, hard maple-white ash-basswood and hard-maple-white ash-American beech
- No ANSIs or valleylands or wetlands were identified within 120 m of the Project location
- No provincial parks or conservation reserves were identified on or within 120 m of the Project location
- NHIC query and MNR confirmed that there are three rare plant species (Brainerd's Hawthorn (*Crataegus brainerdii*), Caughuawaga Hawthorn (*Crataegus suborbiculata*) and Halberd-leaved Tearthumb (*Persicaria arifolia*)) which occur in the vicinity of the Project location

- Information from the MNR noted that the adjacent wooded areas as well as the woodlands on and within 120 m of the Project location may contain Butternut (*Juglans cinerea*)
- The Ontario Herpetofaunal Summary Atlas identified several species of reptile and amphibian whose ranges may include with the Project location of which several are species at risk, including: Northern Map (*Graptemys geographica*), Snapping Turtle (*Chelydra serpentina*), Western Chorus Frog (*Pseudacris triseriata*), and Eastern Ribbonsnake (*Thamnophis sauritus septentrionalis*)
- In the Ontario Breeding Bird Atlas, species at risk were identified within the vicinity of the Project: Black Tern (*Chlidonias niger*), Canada Warbler (*Wilsonia canadensis*), Common Nighthawk (*Chordeiles minor*), American Kestrel (*Falco sparverius*), Black-billed Cuckoo (*Coccyzus erythropthalmus*), Belted Kingfisher (*Ceryle alcyon*), Northern Flicker (*Colaptes auratus*), Eastern Wood-Pewee (*Contopus virens*), Eastern Kingbird (*Tyrannus tyrannus*), Bank Swallow (*Riparia riparia*), Brown Thrasher (*Toxostoma rufum*), Eastern Towhee (*Pipilo erythrophthalmus*), Field Sparrow (*Spizella pusilla*), Vesper Sparrow (*Pooecetes gramineus*), Savannah Sparrow (*Passerculus sandwichensis*), Eastern Meadowlark (*Sturnella magna*) and Baltimore Oriole (*Icterus galbula*)
- Area sensitive bird species were also identified within the vicinity of the Project: American Bittern, Northern Harrier, Red-shouldered Hawk, Broad-winged Hawk, Upland Sandpiper, Hairy Woodpecker, Pileated Woodpecker, Least Flycatcher, Red-breasted Nuthatch, White-breasted Nuthatch, Brown Creeper, Veery, Magnolia Warbler, Blackburnian Warbler, Black-and-white Warbler, American Redstart, Ovenbird and Scarlet Tanager.

# 3. Conclusions

Table 3.1 summarizes the results of the records review.

**Table 3.1 Summary of Records Review Determinations**

| Determination to be Made | Yes/No | Description |
|---|---|---|
| Is the Project in or within 120 m of a provincial park or conservation reserve? | No | The nearest such features are located more than 120 m away from the Project location. |
| Is the Project in a natural feature? | Yes | There are woodlands identified on the Project location. Habitat for species of conservation concern may be found on the Project location. There are no Life Science ANSIs, wetlands or valleylands identified within 120 m of the Project location. |
| Is the Project within 50 m of an ANSI (earth science)? | No | The nearest earth science ANSI is located several kilometres from the Project location. |
| Is the Project within 120 m of a natural feature that is not an ANSI (earth science)? | Yes | There are woodlands identified within 120 m of the Project location. Habitat for species of conservation concern may be found on the Project location. There are no Life Science ANSIs, wetlands or valleylands identified within 120 m of the Project location. |

As per Section 26 of the REA Regulation, a site investigation will be required to confirm the features identified during this records review. The site investigation will i) identify if any corrections to the information presented herein are required; ii) determine whether any additional natural features exist on or adjacent to the Project location; iii) confirm the boundaries of the natural features within 120 m of the Project; and iv) determine the distance from the Project to the natural feature boundary.

# Appendix F

## Natural Heritage
## Site Investigation Report Summary

July 15, 2011

**Northland Power Inc.**
**Glendale Solar Project**

# Summary

# Natural Heritage Site Investigations Report

## 1. Introduction

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Natural Heritage Site Investigations Report for the Glendale Solar Project.

Northland Power Inc. on behalf of Northland Power Solar Glendale L.P. (hereinafter referred to as "Northland") is proposing to develop a 10-MW solar photovoltaic project titled the Glendale Solar Project (hereinafter referred to as the "Project"). The Project site will be located on approximately 45 hectares (ha) of land, in the Township of South Glengarry, within the United Counties of Stormont, Dundas and Glengarry.

Section 26 of the REA Regulation requires proponents of Class 3 solar projects to undertake a Natural Heritage Site Investigation for the purpose of determining if the information provided in the Natural Heritage Records Review Report is correct, if any additional natural heritage features are present within 120 m of the Project, and if the borders and distance of the natural heritage features from the Project site are correct. To obtain this information a site visit was completed. If any features are located within the specified setbacks, an Evaluation of Significance is required.

## 2. Results

The woodlands located on and within 120 m of the Project location were determined to be contiguous. This represents a change in the boundary of the woodlands from those identified in the records review. Woodland communities were described as deciduous communities.

There are two unevaluated wetland communities that were identified within 120 m of the Project location during the site investigation. The first of these communities, located within 120 m north of the Project location is comprised of a reed-canary grass meadow marsh community, while the second located within 120 m south of the Project location is comprised of a mixedwood swamp community.

The Significant Wildlife Habitat Technical Guide (SWHTG) (MNR, 2000) identifies four main types of wildlife habitat that can be classified as significant:

- habitat for seasonal concentrations of animals
- rare or specialized habitats for wildlife
- habitat for species of conservation concern

- wildlife movement corridors.

Of these types of wildlife habitats, the following were determined to be present on or within 120 m of the Project location:

- Woodlands supporting amphibian breeding ponds on the Project location
- American Redstart habitat
- Ovenbird habitat
- Forest providing a high diversity of habitats
- Highly diverse areas
- Raptor winter feeding and roosting areas
- Habitat for species of conservation concern (Milksnake, Northern Flicker, Eastern Woodpewee, and Western Chorus Frog) on and within 120 m of the Project location
- Woodlands on and within 120 m of the Project location as animal movement corridors.

# 3. Conclusions

There are several features present on or within 120 m of the Project location that will require an Evaluation of Significance. These are

- wildlife habitat
- woodlands
- wetlands.

# Appendix G

## Natural Heritage
## Evaluation of Significance
## Report Summary

July 15, 2011

**Northland Power Inc.**
**Glendale Solar Project**

# Summary

# Evaluation of Significance - Natural Heritage Features

## 1. Introduction

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Evaluation of Significance – Natural Heritage Features for the Glendale Solar Project.

Northland Power Inc. on behalf of Northland Power Solar Glendale L.P. (hereinafter referred to as "Northland") is proposing to develop a 10-megawatt (MW) solar photovoltaic (PV) Project titled Glendale Solar Project (hereinafter referred to as the "Project"). The Project site will be located on approximately 45-hectares (ha) of land, in the Township of South Glengarry, within the United Counties of Stormont, Dundas and Glengarry.

Section 24 of the REA Regulation requires proponents of Class 3 solar projects to undertake an Evaluation of Significance for each natural heritage feature identified in the records review and site investigations reports within 120 m of the Project. These reports identified the need to complete an Evaluation of Significance for

- woodlands
- wildlife habitat
- wetlands located.

## 2. Results

### 2.1 Wildlife Habitat

Several types of candidate significant wildlife habitats were identified during the site investigation:

- Woodlands supporting amphibian breeding ponds on the Project location
- American Redstart habitat
- Forest providing a high diversity of habitats
- Highly diverse areas
- Raptor winter feeding and roosting areas.
- Habitat for species of conservation concern (Milksnake, Northern Flicker, Eastern Wood-pewee, and Western Chorus Frog) on and within 120 m of the Project location

- Woodlands on and within 120 m of the Project location as animal movement corridors

**Raptor Winter Feeding and Roosting Areas**

Based on the low relative importance of this site, level of disturbance within the habitat, and the abundance of this habitat type within the region, these areas are not considered to be a significant raptor winter feeding and roosting area.

**Waterfowl Nesting**

Based on the small size and low relative importance of the suitable habitat, absence of species of conservation concern or a diversity of waterfowl, the waterfowl nesting area is determined to not be significant.

**Habitat for American Redstart**

Given the relatively low importance of this site, and the absence of more than 8 ha of interior forest, this feature is not considered to be significant.

**Habitat for Ovenbird**

Given the relatively low importance of this site, and the absence of more than 8 ha of interior forest, this feature is not considered to be significant.

**Forest Providing a High Diversity of Habitats**

This feature is considered to be significant given the criteria for provision of significant wildlife habitat, size, age and composition of trees, vegetation composition and diversity of site, and location of site were met.

**Woodlands Supporting Amphibian Breeding Ponds**

This feature is considered to be significant given the criteria for provision of significant wildlife habitat, species diversity of the pond, size of ponds, diversity of submergent and emergent vegetation, presence of shrubs and logs at the edge of the pond, adjacent forest habitat, water quality and level of disturbance were met.

**Highly Diverse Areas**

The woodlands and wetlands are considered to be highly diverse areas as the criteria for natural community diversity, species diversity, presence of rare species, and size of site.

**Milksnake Habitat**

Given that Milksnake are habitat generalists, the entire Project site was considered to be suitable habitat for Milksnake. Milksnake are identified as a species of Special Concern on the ESA, and therefore though use is unconfirmed, the area is treated as significant wildlife habitat.

**Northern Flicker/Eastern Wood-pewee Habitat**

Though declines have been noted in these species, the abundance of these species within the province, as well as the abundance of suitable habitat in the local area indicates that the habitat found on and within 120 m of the Project location is not of significance for Northern Flicker and Eastern Wood-pewee.

**Western Chorus Frog**

Western Chorus Frog habitat was not determined to be significant given that their range is not solely or primarily found within Ontario, invasive species were noted within the wetland, the wetland was not large nor connected to other wetland communities, was not identified as supporing other species of conservation concern, and potential for long-term protection was low.

**Animal Movement Corridors**

The woodland communities likely represent a movement corridor through the regional area, the absence of linkage to significant features or critical habitat indicates that this feature is not a significant movement corridor

## 2.2 Woodlands

The EOS was completed in consideration of the Evaluation Approach outlined in Section 7 of the NHRM (MNR, 2010). The woodland community meets the requirements of size, forest interior, uncommon characteristics, water protection, proximity to other natural features, and woodland diversity, and therefore is considered significant.

## 2.3 Wetlands

The wetland communities are located off of the Project location, and in accordance with the Natural Heritage Assessment Guide (Appendix C), are assumed to be provincially significant wetlands.

# 3. Conclusions

Table 3.1 summarizes the results of the evaluation of significance report

**Table 3.1 Significant Natural Features on and within 120 m of the Project Site**

| Natural Feature | | Project Site | Adjacent Lands (within 120 m) |
|---|---|---|---|
| SIGNIFICANT | Woodland | Yes | Yes |
| | Wildlife Habitat | Yes | Yes |
| | Valleyland | No | No |
| PROVINCIALLY SIGNIFICANT | Wetland | No | Yes (assumed) |
| | Earth Science ANSI | No | No |
| | Life Science ANSI | No | No |

Therefore, of the natural heritage features evaluated, the wetlands, woodlands and wildlife habitat features will require an Environmental Impact Study as per Section 38 of the REA Regulation.

# Appendix H

## Natural Heritage Environmental Impact Study Summary

July 15, 2011

**Northland Power Inc.**
**Glendale Solar Project**

## Summary

# Environmental Impact Study - Natural Heritage Features

## 1. Introduction

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Environmental Impact Study - Natural Heritage Features for the Glendale Solar Project.

Northland Power Inc. on behalf of Northland Power Solar Glendale L.P. (hereinafter referred to as "Northland") is proposing to develop a 10-megawatt (MW) solar photovoltaic (PV) Project titled Glendale Solar Project (hereinafter referred to as the "Project"). The Project site will be located on approximately 45 hectares (ha) of land, in the Township of South Glengarry, within the United Counties of Stormont, Dundas and Glengarry.

Section 38 of the REA Regulation requires proponents of Class 3 solar projects to complete an Environmental Impact Study (EIS) for all significant natural heritage features determined to be within a specified setback in order to obtain a REA. The EIS is required in order to determine i) any potential negative environmental effects on the natural features ii) identify mitigation measures iii) describe how the environmental effects monitoring plan in the Design and Operations Report addresses any negative environmental effects and iv) describe how the Construction Plan Report addresses any negative environmental effects.

The natural heritage features that are classified as significant are

- woodland located on and within 120 m of the Project location
- wetlands located within 120 m of the Project location (assumed provincially significant)
- wildlife habitat located on and within 120 m of the Project location, specifically:
  - all lands on and within 120 m of the Projects site as habitat for Milksnake
  - woodlands supporting amphibian breeding habitat.
  - forest providing a high diversity of habitats
  - highly diverse areas

# 2. Results

The results of the EIS on the significant natural features are summarized in Table 2.1.

**Table 2.1 Summary of Potential Negative Environmental Effects and Proposed Mitigation**

| Project Phase | Potential Negative Environmental Effect | Proposed Mitigation Measure |
|---|---|---|
| **Vegetation Communities/Wildlife Habitat** | | |
| Construction | Removal of vegetation due to direct encroachment on the natural feature | In order to minimize the amount of vegetation removal required, work areas will be clearly flagged and workers will be made aware not to work beyond the extent of the cleared areas. All trees will be felled into the already cleared areas. Further, workers will be advised not to trespass beyond the bounds of the areas that had been previously flagged for vegetation removal. No clearing within 30 m of high water mark of wetlands. Vegetation removed to be placed around fenceline. Compensation planting for areas of woodland removed. |
| Construction | Removal of amphibian breeding ponds | Amphibian breeding ponds will be created to compensate the removal from the Project location. |
| Construction/ Decommissioning | Heavy dust may impact photosynthesis due to fugitive dust generation | Use of dust suppressant, phased construction and decommissioning, stockpiles to be stabilized and/or covered, avoid earthworks during windy days |
| **Wildlife Communities** | | |
| Construction/ Operation/ Decommissioning | Potential for incidental take | Speeds on access roads to be restricted. Work areas/access roads/machinery to be searched for wildlife prior to start of work. Observed wildlife to be removed in accordance with wildlife encounter protocols. |
| Construction/ Operation | Disruption of bird breeding | Major activities, such as tree clearing, land grading, excavation, mowing, construction of access roads and trenching will be scheduled to occur outside of the breeding amphibian and bird period (generally April through July) to the greatest extent possible so that impacts to wildlife species breeding on the Project site, such as nesting birds, will be minimized |
| Construction/ Decommissioning | Auditory and visual disturbance of local wildlife populations may result in a short-term reduction of resident populations | Due to existing disturbances, it is not anticipated that wildlife disturbance will be significant; therefore, no mitigation required |

Table 4.1 in the EIS summarizes the proposed monitoring plan.

As discussed in the Design and Operations Report, environmental effects monitoring is proposed with respect to any negative environmental effects that may result from engaging in the Project. The monitoring plan in the Design and Operations Report identifies: performance objectives with respect to the negative environmental effects; mitigation measures to assist in achieving the performance objectives; and, a program for monitoring negative environmental effects for the duration of the time the Project is engaged in, including a contingency plan to be implemented if any mitigation measures fail.

In addition, the Construction Plan Report for the Project details the construction and installation activities, location and timing of construction and installation activities, any negative environmental effects that result from construction activities within 300 m of the Project and mitigation measures for the identified negative environmental effects.

# 3. Conclusions

The EIS has been prepared to identify potential negative environmental effects that all phases of the Project may have on the significant natural feature. Mitigation measures have been proposed to prevent these effects from occurring or minimize the magnitude, extent, duration and frequency in the event that they do occur to an acceptable level. Monitoring measures have been proposed to confirm that mitigation measures are having the intended effect and that performance objectives are being met.

# Appendix I

## Water Body
## Records Review Report Summary

July 15, 2011

**Northland Power Inc.**
**Glendale Solar Project**

# Summary

# Water Body Records Review Report

## 1. Introduction

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Water Body Records Review Report for the Glendale Solar Project.

Northland Power Inc. on behalf of Northland Power Solar Glendale L.P. (hereinafter referred to as "Northland") is proposing to develop a 10-megawatt (MW) solar photovoltaic (PV) Project titled Glendale Solar Project (hereinafter referred to as the "Project"). The Project will be located on approximately 45 hectares (ha) of land, in the Township of South Glengarry, within the United Counties of Stormont, Dundas and Glengarry.

Section 30 of the REA Regulation requires proponents of Class 3 solar projects to undertake a Water Body Records Review. The focus of the assessment was on identifying whether or not the project was located within or adjacent to any of the specified water features (e.g. within 120 m of the average annual high water mark of a permanent or intermittent stream). Records were searched from the Ministry of Natural Resources (MNR), Ontario Ministry of Agriculture, Food and Rural Affairs, federal government, United Counties of Stormont, Dundas and Glengarry, Township of South Glengarry and other relevant sources.

## 2. Results

Key water body features and points of interest identified during the records review include the following:

- There are no watercourses on the Project location
- Beyond 120 m from the Project location, a tributary of Glen Falloch Drain is present approximately 165 m from the Project location and flows north to the Glen Falloch Drain, approximately 865 m away
- Unnamed tributary of the Raisin River originates approximately 50 m west of the southeastern corner of the Project location and flows south through agricultural fields
- A small pond is present approximately 200 m south of the Project area
- Information received from Raisin Region Conservation Authority (RRCA) indicated that the tributary 165 m from the Project location is classified as a Class C water watercourse, according to the DFO Drain Classification system

- A tributary of Raisin River approximately 5 km downstream from the Project location is noted as having habitat for aquatic Species of Special Concern, namely Bridle Shiner (*Notropis bifrenatus*) and River Redhorse (*Moxostoma carinatum*).

# 3. Conclusions

Table 3.1 summarizes the results of the records review.

**Table 3.1 Summary of Records Review Determinations**

| Determination to be Made | Yes/No | Description |
|---|---|---|
| Is the Project in a water body? | No | The Project will not be situated within a water body. |
| Is the Project within 120 m of the average annual high water mark of a lake, other than a lake trout lake that is at or above development capacity? | No | No lakes are present within 120 m of the Project location. |
| Is the Project within 300 m of the average annual high water mark of a lake trout lake that is at or above development capacity? | No | No lake trout lakes at or above development capacity are present within 300 m of the Project location. |
| Is the Project within 120 m of the average annual high water mark of a permanent or intermittent stream? | No | There is one watercourse within 120 m of the Project location |
| Is the Project within 120 m of a seepage area? | No | No seepage areas are present within the Project area. |

A site investigation, as required in Section 31 of the REA Regulation, will be completed to i) confirm the features identified during this records review; ii) identify if any corrections to the information presented herein are required; iii) determine whether any additional waterbodies exist in the Project area; iv) confirm the boundaries of any water feature within 120 m of the Project; and v) determine the distance from the Project to the water boundary.

# Appendix J

## Water Body
## Site Investigation
## Report Summary

July 15, 2011

**Northland Power Inc.**
**Glendale Solar Project**

# Summary

# Water Body Site Investigations Report

## 1. Introduction

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Water Body Site Investigations Report for the Glendale Solar Project.

Northland Power Inc. on behalf of Northland Power Solar Glendale L.P. (hereinafter referred to as "Northland") is proposing to develop a 10-megawatts (MW) solar photovoltaic project titled Glendale Solar Project (hereinafter referred to as the "Project"). The Project location will be on approximately 45 hectares (ha) of land, in the Township of South Glengarry, within the United Counties of Stormont, Dundas and Glengarry.

Section 31 of the REA Regulation requires proponents of Class 3 solar projects to undertake Water Body Site Investigation for the purpose of determining if the information provided in the Water Body Records Review Report is correct, if any additional waterbodies are present within 120 m of the Project, and if the borders and distance of the waterbodies from the Project location are correct. To obtain this information a site visit was completed. If any waterbodies are located within the specified setbacks an Environmental Impact Study (EIS) is required.

## 2. Results

Two waterbodies were identified within 120 m of the Project location. They are described as follows:

**Tributary of Raisin River**

- originates approximately 50 m west of the southeastern corner of the Project location and flows south through the adjacent agricultural fields
- tributary was not able to be assessed during the site investigation, since it is located wholly on the adjacent property and the site investigator did not have permission to access that property
- observations made from the property boundary, this watercourse appears to be restricted to a narrow vegetated corridor surrounded by agricultural fields
- proposed Project will be located approximately 50 m from the high water mark of the tributary; therefore, an EIS will be required to assess potential adverse effects and mitigation measures

**Watercourse A**

- this tributary was identified during the site investigation, it is classified as an intermittent constructed drain as no standing water was observed during the June 2011 site investigation
- this watercourse flows south through a wooded area south of the Project location and also occurs directly adjacent to a wetland
- proposed development footprint will be located between 30 and 120 m from the Project; therefore, an Environmental Impact Study (EIS) will be required.

# 3. Conclusions

Based on the results of the site investigation discussed above, there is a correction to the Water Body Records Review (Hatch Ltd., 2010), namely Watercourse A is within 120 m of the Project location.

Based on the results of the site investigation and the proposed Project footprint shown, some components of the facility will be located between 30 and 120 m of Watercourse A and the tributary of the Raisin River. Therefore, an EIS will be required.

# Appendix K

## Water Body
## Environmental Impact Study
## Summary

July 15, 2011

**Northland Power Inc.**
**Glendale Solar Project**

# Summary

# Waterbodies Environmental Impact Study

## 1. Introduction

As per Section 17 of the Renewable Energy Approvals Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Waterbodies Environmental Impact Study Report for the Glendale Solar Project.

Northland Power Inc. on behalf of Northland Power Solar Glendale L.P. (hereinafter referred to as "Northland") is proposing to develop a 10-megawatt (MW) solar photovoltaic (PV) Project titled Glendale Solar Project (hereinafter referred to as the "Project"). The Project location will be located on approximately 45 hectares (ha) of land, in the Township of South Glengarry, within the United Counties of Stormont, Dundas and Glengarry.

Sections 39 and 40 of the REA Regulation requires proponents of Class 3 solar projects to complete an Environmental Impact Study (EIS) is required for all waterbodies determined to be within a specified setback in order to obtain a REA. The EIS is required in order to determine i) any potential negative environmental effects on the natural features ii) identify mitigation measures iii) describe how the environmental effects monitoring plan in the Design and Operations Report addresses any negative environmental effects and iv) describe how the Construction Plan Report addresses any negative environmental effects.

This EIS has been prepared to address these requirements for the construction of Project components between 30 and 120 m from the tributary of the Raisin River and Watercourse A.

## 2. Results

The results of the EIS on the two watercourses are summarized in Table 2.1.

**Table 2.1 Summary of Potential Negative Environmental Effects and Proposed Mitigation**

| Project Phase | Potential Negative Environmental Effect | Proposed Mitigation Measure |
|---|---|---|
| **Surface Water Runoff** | | |
| Construction | Altered surface water runoff pattern and rate causing an increase in surface water runoff to the receiving waterbodies due to land grading and ditching, soil compaction, and vegetation removal | Install flow dissipation measures near the 30 m setback from the waterbodies. Ditches will be vegetated with appropriate grass species to aid in flow dissipation and water uptake. Enhanced vegetation swales will be used in roadside ditches to promote ponding in order to decrease turbidity and increase water retention. Vegetated filter strips will be used where runoff enters agricultural lands or where the ditches discharge in close proximity to watercourses. Discing or other soil loosening methods will be used on compacted areas. Long-term ground cover will be planted |
| Operations | Altered surface water runoff pattern and rate causing an increase in surface water runoff to the receiving waterbodies due to land grading and ditching, impervious and less pervious soils, and changes in vegetation | Minor grading will occur and take into consideration current land grade to replicate present storm water flow patterns. Long-term ground cover will be planted. Impervious and less pervious soils will allow runoff into ditches or localize points and discharge into vegetation to allow flow dissipation; therefore no appreciable impact to local drainage patterns |
| Decommissioning | Altered surface water runoff pattern and rate causing an increase in surface water runoff to the receiving waterbodies if land grading and ditching are left in place after decommissioning | All infrastructure will be removed, including access roads and drainage ditches, thereby bringing the site back to pre-construction conditions |
| **Surface Water Quality** | | |
| Construction | Increase soil erosion and sedimentation may cause an increased in turbidity in the receiving waterbodies due to land grading and ditching, soil compaction, and vegetation removal | Erosion and Sediment Control plan to be created and implemented. Examples of key components of the plan are: minimize size of cleared and disturbed areas, phase construction to minimize time of exposed soils, adequate supply of erosion and sediment control, divert runoff through vegetated areas, install flow velocity control measures in drainage ditches, revegetate and stabilize exposed soils, grade stockpiles to stable angle, stockpiles placed in suitable areas away from the receiving water body |
| Construction/ Decommissioning | Heavy dust may impact surface water quality | Use of dust suppressant, phased construction and decommissioning, stockpiles to be stabilized and/or covered, hard surfaces for access roads, and avoid earthworks during windy days |
| Construction/ | Accidental spills contaminating | Fuelling stations and hazardous materials |

| Project Phase | Potential Negative Environmental Effect | Proposed Mitigation Measure |
|---|---|---|
| Operations/ Decommissioning | surface water | storage to be located outside of the 1:100 yr flooding hazard. Emergency spill kit on site at all times and the spill kit will have adequate materials/equipment for spill response. Machinery arriving on site to be clean and free of leaks. Contractor to have spill response procedure and all workers will be properly trained on the procedure. No cement products to be placed into any watercourse. Concrete truck rinsing station at least 120 m away from any known watercourse. Cement storage to be raised and placed in a waterproof shelter |
| Operations | Increase soil erosion and sedimentation may cause an increased in turbidity in the receiving waterbodies due to land grading and ditching, and changes in vegetation | Storm water flow patterns will be replicated. Long-term ground cover will be planted. Impervious and less pervious soils will allow runoff into ditches or localize points and discharge into vegetation to allow flow dissipation; therefore no appreciable impact to local drainage patterns |
| Decommissioning | Increase soil erosion and sedimentation may cause an increased in turbidity in the receiving waterbodies due to land grading and ditching, and changes in vegetation | All infrastructure will be removed, including access roads and drainage ditches, thereby bringing the site back to pre-construction conditions. It is assumed that a re-instatement of row crops will occur |
| **Aquatic Biota and Habitat** | | |
| Construction/ Operation/ Decommissioning | Indirect effects to aquatic biota and habitat due to changes in surface water quality, surface water runoff rate and groundwater | Proposed mitigation for surface water quality, surface water runoff and groundwater, as above, is anticipated to be sufficient |
| **Groundwater** | | |
| Construction | Effects on groundwater table due to Project excavations. | The amount and duration of dewatering for excavations will be minimized to the extent possible and is not anticipated to impact the groundwater due to the limited duration (2 weeks or less) of pumping. |
| Construction/ Operations/ Decommissioning | Groundwater contamination due to accidental spills | See mitigation measures above for accidental spills contaminating surface water |

Table 5.1 in the EIS summarizes the proposed monitoring plan.

As discussed in the Design and Operations Report, environmental effects monitoring is proposed in respect of any negative environmental effects that may result from engaging in the Project. The monitoring plan in the Design and Operations Report identifies: performance objectives in respect of the negative environmental effects; mitigation measures to assist in achieving the performance objectives; and, a program for monitoring negative environmental effects for the duration of the time

the Project is engaged in, including a contingency plan to be implemented if any mitigation measures fail.

In addition, the Construction Plan Report for the Project details the construction and installation activities (including location and timing), any negative environmental effects that result from construction activities within 300 m of the Project and mitigation measures for the identified negative environmental effects.

# 3. Conclusions

The EIS has been prepared to identify potential negative environmental effects that all phases of the Project may have on the three watercourses. Mitigation measures have been proposed to prevent these effects from occurring or minimize the magnitude, extent, duration and frequency in the event that they do occur. The primary mitigation measure that will prevent adverse effects on the waterbodies is adherence to the 30 m setback requirement. Certain construction activities may have short-term minor impacts, but these would be temporary in nature. Operational activities are not anticipated to impact the waterbodies as the Project operated remotely and maintenance is only expected to occur infrequently throughout the year. Decommissioning activities will be similar to construction activities and as such they may cause short-term minor impacts yet once the Project location has been restored to its previous condition no long-term impacts are anticipated.

Overall, while the Project will result in some changes to the natural environment, no negative effects on the waterbodies are anticipated to occur following implementation of the mitigation and monitoring measures proposed.

# Appendix L

## Stage 1 and 2
## Archaeological Assessment Reports
## Summary

July 15, 2011

**Northland Power Inc.**
**Glendale Solar Project**

# Summary

# Stage 1 and 2 Archaeological Assessment Report

## 1. Introduction

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Archaeological Assessment Report, prepared by Archaeology Research Associates Ltd. for the Glendale Solar Project.

Northland Power Inc. on behalf of Northland Power Solar Glendale L.P. (hereinafter referred to as "Northland") is proposing to develop a 10-megawatt (MW) solar photovoltaic (PV) Project titled Glendale Solar Project (hereinafter referred to as the "Project"). The Project will be located on approximately 45 hectares (ha) of land, in the Township of South Glengarry, within the United Counties of Stormont, Dundas and Glengarry.

Section 22 of the REA Regulation requires proponents of Class 3 solar projects to undertake an Archaeological Assessment where there is a concern that an undertaking could impact archaeological resources. The purpose of the present assessment was to confirm the presence or absence of significant archaeological resources that could represent potential constraints for the proposed Glendale Solar Project. The assessment included a Stage 1 background study of past archaeological investigations and known archaeological sites within a 2 km radius of the Glendale Solar Project location. It also included a systematic 5-m interval Stage 2 archaeological survey of all of the Leased Lands in the property.

## 2. Results

The background study determined that no previous archaeological fieldwork or discoveries had been documented within the Glendale Solar Project location or in close proximity to it and no archaeological sites had been registered or otherwise recorded within a 2-km radius of the property. The four find spots are considered potentially significant archaeological resources and warrant further protection.

## 3. Conclusions

The office of the Ministry of Tourism and Culture has reviewed the Archaeological Assessment Report in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18, and accepted its findings. The four find spots are considered potentially provincially significant and do warrant further protection, accomplished through buffering and avoidance.

July 15, 2011

**Northland Power Inc.**
**Glendale Solar Project**

# Summary

# Stage 1 and 2 Archaeological Assessment Report - Additional Lands

## 1. Introduction

As per Section 17 of the Renewable Energy Approvals (REA) Regulation (O. Reg. 359/09) under Part V.0.1 of the *Environmental Protection Act*, the following is a summary of the Archaeological Assessment Report, prepared by Archaeology Research Associates Ltd. for the Glendale Solar Project.

Northland Power Inc. on behalf of Northland Power Solar Glendale L.P. (hereinafter referred to as "Northland") is proposing to develop a 10-megawatt (MW) solar photovoltaic (PV) Project titled Glendale Solar Project (hereinafter referred to as the "Project"). The Project will be located on approximately 45 hectares (ha) of land, in the Township of South Glengarry, within the United Counties of Stormont, Dundas and Glengarry.

Section 22 of the REA Regulation requires proponents of Class 3 solar projects to undertake an Archaeological Assessment where there is a concern that an undertaking could impact archaeological resources. The purpose of the present assessment was to confirm the presence or absence of significant archaeological resources that could represent potential constraints for the proposed Glendale Solar Project. The assessment included a Stage 1 background study of past archaeological investigations and known archaeological sites within a 2 km radius of the Glendale Solar Project location. It also included a systematic 5-m interval Stage 2 archaeological survey of all of the Leased Lands in the property. Additional lands were added to the Project location; as such, an additional Stage 1 and 2 Archaeological Assessment report has been prepared.

## 2. Results

The background study determined that no previous archaeological fieldwork or discoveries had been documented within the additional lands for the Glendale Solar Project location or in close proximity to it and no archaeological sites had been registered or otherwise recorded within a 2-km radius of the property. During the property survey no archaeological material was uncovered. It has been recommended that no further work is required for the additional lands for the Glendale Solar Project.

## 3. Conclusions

The office of the Ministry of Tourism and Culture has reviewed the Archaeological Assessment Report in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18, and accepted its findings.

# Appendix M

## Noise Assessment Report
## Summary

July 15, 2011

## Northland Power Inc

## Glendale Solar Project

# Summary

# Noise Assessment Report

## 1. Introduction

This report presents the results of the noise assessment study for the Glendale Solar Project, required under Regulation 359/09 as part of the Renewable Energy Approval Process (REA).

Northland Power Inc. on behalf of Northland Power Solar Glendale L.P. (hereinafter referred to as "Northland") is proposing to develop a 10-megawatt (MW) solar photovoltaic (PV) Project titled Glendale Solar Project (hereinafter referred to as the "Project"). The Project site will be located on approximately 45-hectares (ha) of land, in the Township of South Glengarry, within the United Counties of Stormont, Dundas and Glengarry.

This Noise Impact Assessment has been prepared based on the document entitled "Basic Comprehensive Certificates of Approval (Air) – User Guide" by the Ontario Ministry of the Environment (MOE), which requires that the sound pressure levels at the points of reception (POR) are estimated using ISO 9613-2. The performance limits used for verification of compliance correspond to the values for Class 3 areas (45 dBA for day time, 40 dBA for night time) as established by MOE.

## 2. Results

- The main sources of noise from the Project will be seven inverter clusters, each one containing two inverters and one medium-voltage transformer, and a substation containing the main step-up transformer.
- The Project will be located in a Class 3 Area. Class 3 area means a rural area with an acoustical environment that is dominated by natural sounds, having little or no traffic, such as an agricultural area.
- Seven inverter clusters will be installed as part of the Project. Each cluster comprises of two SMA Sunny Central 800CP inverters and one medium voltage transformer. A 1.6-MVA transformer used to step-up the 360-V power from the inverters to 27.6-kV will be located in proximity to the inverters. Since the transformer make and model have not been selected at this point, the sound power levels resulting from the operation of the transformer were evaluated using data from NEMA TR 1-1993

- At night time the facility will not operate. Under these conditions the inverters do not produce noise. The transformers (at the substation and clusters) are energized and make some magnetostrictive noise at a reduced level, but no cooling fans are in operation.
- The sound pressure levels at the points of reception have been estimated using the CADNA-A model, based on ISO 9613-2. The performance limits used for comparison correspond to Class 3 areas, with 45-dBA during day time (7:00 a.m. to 7:00 p.m.) and 40-dBA during night time. It has been determined that no mitigation measures are needed for the Project operation.

# 3. Conclusions

Based on the results obtained in this study, it is concluded that the sound pressure levels at the POR, will be below MOE requirements for Class 3 areas at night time (40 dBA), and well below the limits at day time (45 dBA).

# Appendix N

## Protected Properties and Heritage Resource Information

Project Report

July 15, 2011

# Northland Power Solar Glendale L.P.
# Glendale Solar Project

## Protected Properties and Heritage Resources

## Table of Contents

# 1. Introduction

## 1.1 Project Description

Northland Power Inc. on behalf of Northland Power Solar Glendale L.P. (hereinafter referred to as "Northland") is proposing to develop a 10-megawatt (MW) solar photovoltaic (PV) Project titled Glendale Solar Project (hereinafter referred to as the "Project"). The Project location will be located on approximately 45 hectares (ha) of land, in the Township of South Glengarry, within the United Counties of Stormont, Dundas and Glengarry.

## 1.2 REA Legislative Requirements

Ontario Regulation (O. Reg.) 359/09 – *Renewable Energy Approvals Under Part V.0.1 of the Act*, (herein referred to as the REA Regulation) made under the *Environmental Protection Act* identifies the Renewable Energy Approval (REA) requirements for renewable energy projects in Ontario. As per Section 4 of the REA Regulation, ground mounted solar facilities with a name plate capacity greater than 10 kilowatts (kW) are classified as Class 3 solar facilities and do require an REA.

Section 19 of the REA Regulation requires proponents of Class 3 solar projects to determine whether the project location is on a property described in Column 1 of the Table to Section 19. Table 1.1 has been prepared to meet this requirement.

Section 23 of the REA requires that proponents of Class 3 solar projects, as a result of the consideration mentioned in subsection 20, determine whether engaging in the renewable energy project may have an impact on a heritage resource described in subsection 20 (1). Table 1.2: *The Ministry of Culture – Check Sheet for Environmental Assessments: Screening for Impacts to Built Heritage and Cultural Heritage Landscapes* has been completed to address the requirements described in Section 23.

## 2. Protected Properties

As discussed in Section 1.2, Table 1.1 below has been prepared to address Section 19 of the REA Regulation.

# Table 1.1: Protected Properties Table
## Under the Renewable Energy Approval: O. Reg. 359/09 Section 19

19. (1) A person who proposes to engage in a renewable energy project shall determine whether the project location is on a property described in Column 1 of the Table to this Section.

**Property:** Glendale Solar Project
**Address:** longitude & latitude: 45.106695 & -74.725828
**Township and County:** Township of South Glenarry, within the Counties of Stormont, Dundas and Glengarry

| Item | Description of Property | Reference |
|---|---|---|
| 1 | A property that is subject of an agreement, covenant or easement entered into under clause 10(1)(b) of the *Ontario Heritage Act*. | See MCL Check Sheet Step 2, Item 4. The property is not designated under clause 10(1)(b) of the *Ontario Heritage Act*. |
| 2 | A property in respect of which a notice of intention to designate the property to be of cultural heritage value or interest has been given in accordance with section 29 of the *Ontario Heritage Act*. | Consultation with the municipality, as per MCL Check Sheet Step 2, Item 8 has not determined that a notice of intention to designate has been given. In addition, The MCL Ontario Heritage Properties Database includes properties designated under Part IV of the *Ontario Heritage Act*. The Project is not proposed to be located on or adjacent to such a property. |
| 3 | A property designated by a municipal by-law made under section 29 of the *Ontario Heritage Act* as a property of cultural heritage value or interest. | Consultation with the municipality, as per MCL Check Sheet Step 2, Item 8 has not determined that the Project is located on a property designated by a municipal by-law. In addition, The MCL Ontario Heritage Properties Database includes properties designated under Part IV of the *Ontario Heritage Act*. The Project is not proposed to be located on or adjacent to such a property. |
| 4 | A property designated by order of the Minister of Culture made under section 34.5 of the *Ontario Heritage Act* as a property of cultural heritage value or interest of provincial significance. | The MCL Ontario Heritage Properties Database includes properties designated under Part IV of the *Ontario Heritage Act*. The Project is not proposed to be located on or adjacent to such a property. |
| 5 | A property in respect of which a notice of intention to designate the property as property of cultural heritage value or interest of provincial significance has been given in accordance with section 34.6 of the *Ontario Heritage Act*. | The MCL Ontario Heritage Properties Database includes properties designated under Part IV of the *Ontario Heritage Act*. The Project is not proposed to be located on or adjacent to such a property. |
| 6 | A property that is subject of an easement or a covenant entered into under section 37 of the *Ontario Heritage Act*. | The MCL Ontario Heritage Properties Database includes properties designated under Part IV of the *Ontario Heritage Act*. The Project is not proposed to be located on or adjacent to such a property. |
| 7 | A property that is part of an area designated by a municipal by-law made | The MCL Ontario Heritage Properties Database includes properties |

| | | |
|---|---|---|
| | under section 41 of the *Ontario Heritage Act* as a heritage conservation district. | designated under Part V of the *Ontario Heritage Act*. The Project is not proposed to be located on or adjacent to such a property. |
| 8 | A property designated as a historic site under Regulation 880 of the Revised Regulations of Ontario, 1990 (Historic Sites) made under the *Ontario Heritage Act*. | The property is not designated a historic site under Regulation 880. |

# 3. Heritage Assessment

As discussed in Section 1.2, Table 1.2 below has been prepared to address Section 23 of the REA Regulation.

# Table 1.2: Ministry of Tourism and Culture – Check Sheet for Environmental Assessments

## Screening for Impacts to Built Heritage and Cultural Heritage Landscapes

This checklist will help identify potential cultural heritage resources, determine how important they are and indicate whether a cultural heritage impact assessment is needed.

**Property:** Glendale
**Address:** longitude & latitude: 45.106695 & -74.725828
**Township and County:** Township of South Glenarry, within the Counties of Stormont, Dundas and Glengarry

| **Step 1 – Screening Potential Resources** | | | |
|---|---|---|---|
| | | **Built heritage resources** | **Reference** |
| **Yes** | **No** | Does the property contain any built structures, such as: | |
| | √ | Residential structures (e.g. house, apartment building, trap line shelter) | Possible house present on West end of 300m border of Project Property, North of County Rd 44. |
| | √ | Agriculture (e.g. barns, outbuildings, silos, windmills) | |
| | √ | Industrial (e.g. factories, complexes) | |
| | √ | Engineering works (e.g. bridges, roads, water/sewer systems) | Roads present near project area: County Rd. 44, Glenfalloch Rd, County Rd. 19. |
| | | **Cultural heritage landscapes** | |
| **Yes** | **No** | Does the property contain landscapes such as: | |
| | √ | Burial sites and/or cemeteries | |
| | √ | Parks | |
| | √ | Quarries or mining operations | |
| | √ | Canals | |
| √ | | Other human-made alterations to the natural landscape | Land appears to be cultivated for agricultural use in the past. |

| **Step 2 – Screening Potential Significance** | | | |
|---|---|---|---|
| **Yes** | **No** | **A property's heritage significance may be identified through the following:** | **Reference**<br>According to the MCL Ontario Heritage Properties Database there are several heritage properties located within the Township of South Glengarry; however, none of the heritage properties are located within, or in the vicinity of the project property (Website search: May 27 |

| | | | |
|---|---|---|---|
| | | | 2010). |
| | √ | 1. Is it designated or adjacent to a property designated under the Ontario Heritage Act? | |
| | √ | 2. Is it listed on the municipal heritage register or provincial register (e.g. Ontario Heritage Bridge List)? | |
| | √ | 3. Is it within or adjacent to a Heritage Conservation District? | None of Ontario's Heritage Conservation Districts are located within the Municipality according to the MCL's current list. (Research completed May 27 2010 http://www.culture.gov.on.ca/english/heritage/conservation/conservation_list.htm |
| | √ | 4. Does it have an Ontario Heritage Trust easement or is it adjacent to such a property? | According to the Ontario Heritage Trust website (www.heritagefdn.on.ca) no easement properties are located in the vicinity of the property. In addition, the Ontario Heritage Properties Database did not reveal any easement properties. (Research completed May 27 2010). |
| | √ | 5. Is there a provincial or federal plaque? | There are no provincial plaques located in the vicinity of the Project location (Research competed May 27 2010 http://www.ontarioplaques.com/index.html). Federal plaques appear at National Historical Sites of Canada, none of which exist within the vicinity of the Project (See Item 6 below). |
| | √ | 6. Is it a National Historic Site? | National Historic Sites are included within the Ontario Heritage Properties Database (Research completed 27May10) In addition, no sites within the vicinity of the Project, or on Project property are listed on the Canadian Register of Historic Places (Research completed 27May10 www.historicplaces.ca). |
| | √ | 7. Does documentation exist to suggest built heritage or cultural heritage landscape potential? (e.g. research studies, heritage impact assessment reports, etc.) | |
| √ | | 8. Was the municipality contacted regarding potential cultural heritage value? | |
| | √ | Were any concerns expressed? | |
| | | 9. What are the dates of construction? | N/A |
| | √ | Are the buildings and/or structures over 40 years old? | |
| | √ | Is it within a Canadian Heritage River watershed? | |
| | √ | 10. Is a renowned architect or builder associated with the property? | |

**Note:** If you answer "yes" to any of the questions in Step 2, a heritage impact assessment is required.

| **Step 3 – Screening for Potential Impacts** | | | |
|---|---|---|---|
| **Yes** | **No** | | **Reference** |
| | ✓ | Destruction of any, or part of any, significant heritage attribute or feature. | Excavations during Project construction may result in the discovery of archaeological resources. Archaeological assessments will be conducted to determine potential. Potential heritage resources will be determined as per the requirements of the Ministry of Culture. |
| | ✓ | Alteration that is not sympathetic, or is incompatible, with the historic fabric or appearance. | |
| | ✓ | Shadows created that alter the appearance of a heritage attribute or change the visibility of a natural feature or plantings, such as a garden. | |
| | ✓ | Isolation of a heritage attribute from its surrounding environment, context or a significant relationship. | |
| | ✓ | Direct or indirect obstruction of significant views or vistas from, within, or to a built and natural feature. | |
| | ✓ | A change in land use such as rezoning a battlefield from open space to residential use, allowing new development or site alteration to fill in the formerly open spaces. | Current land use will be discontinued within the Project footprint. Installation of the Project will result in a change to the local landscape. |
| | ✓ | Land disturbances such as a change in grade that alters soils and drainage patterns that adversely affect an archaeological resource. | Reductions in soil quality/loss of soils as a result of accidental spills, erosion, soil compaction during construction. Archaeological assessments have been conducted to determine potential. |

# 4. Conclusion

Based on the information presented in Table 1.1 the proposed Project is not located on a Protected Property as described in Column 1 of the Table to section 19. In addition, research and agency consultation undertaken as described within Table 1.2 has not identified the need for a heritage impact assessment under Section 23 of the REA Regulation.

# Appendix O

## Letter of Confirmation – Ontario Ministry of Natural Resources

**Ministry of Natural Resources**

Kemptville District

10 Campus Drive
Postal Bag 2002
Kemptville, ON K0G 1J0
Tel: 613-258-8204
Fax: 613-258-3920

**Ministère des Richesses naturelles**

District de Kemptville

10 Dr. Campus
Sac Postal, 2002
Kemptville, ON K0G 1J0
Tél.: 613-258-8204
Téléc.: 613-258-3920

Ontario

July 8, 2011

Sean Male
Hatch
Environmental Assessment & Management
Niagara Falls, Ontario

To Mr. Male:

In accordance with the Ministry of the Environment's (MOE's) Renewable Energy Approvals (REA) Regulation (O.Reg.359/09), the Ministry of Natural Resources (MNR) has reviewed the natural heritage assessment and environmental impact study for Glendale Solar Project in the township of South Glengarry submitted by Northland Power.

In accordance with Section 28(2) and 38(2)(b) of the REA regulation, MNR provides the following confirmations following review of the natural heritage assessment:

1. The MNR confirms that the determination of the existence of natural features and the boundaries of natural features was made using applicable evaluation criteria or procedures established or accepted by MNR.
2. The MNR confirms that the site investigation and records review were conducted using applicable evaluation criteria or procedures established or accepted by MNR, if no natural features were identified.
3. The MNR confirms that the evaluation of the significance or provincial significance of the natural features was conducted using applicable evaluation criteria or procedures established or accepted by MNR (if required).
4. The MNR confirms that the project location is not in a provincial park or conservation reserve.
5. The MNR confirms that the environmental impact assessment report has been prepared in accordance with procedures established by the MNR.

This confirmation letter is valid for the project as proposed in the natural heritage assessment and environmental impact study, including those sections describing the Environmental Effects Monitoring Plan and Construction Plan Report. Should any

changes be made to the proposed project that would alter the NHA, MNR may need to undertake additional review of the NHA.

Where specific commitments have been made by the applicant in the NHA with respect to project design, construction, rehabilitation, operation, mitigation, or monitoring, MNR expects that these commitments will be considered in MOE's Renewable Energy Approval decision and, if approved, be implemented by the applicant.

In accordance with S.12 (1) of the Renewable Energy Approvals Regulation, this letter must be included as part of your application submitted to the MOE for a Renewable Energy Approval.

Please be aware that your project may be subject to additional legislative approvals as outlined in the Ministry of Natural Resources' *Approvals and Permitting Requirements Document*. These approvals are required prior to the construction of your renewable energy facility.

Please be aware that your project may be subject to additional legislative approvals as outlined in the Ministry of Natural Resources' *Approvals and Permitting Requirements Document*. These approvals are required prior to the construction of your renewable energy facility.

If you wish to discuss any part of this confirmation or additional comments provided, please contact Heather Zurbrigg, Renewable Energy Planning Ecologist at 613-258-8366 or at heather.zurbrigg@ontario.ca

Sincerely,

Jim Fraser *for*
Ken Durst
District Manager
Kemptville District MNR

cc. Jim Beal, Renewable Energy Provincial Field Program Coordinator, Regional Operations Division, MNR
cc. Andrea Fleischhauer, A/Southern Region Renewable Energy Coordinator, MNR
cc. Narren Santos, Environmental Assessment and Approvals Branch, MOE

# Appendix P

## Letters of Confirmation –
## Ontario Ministry of Tourism and Culture

**Ministry of Tourism and Culture**

Culture Programs Unit
Programs and Services Branch
401 Bay Street, Suite 1700
Toronto, ON M7A 0A7
Telephone: (416)-314-7691
Facsimile: (416)-314-7175
Email : Ian.Hember@ontario.ca

**Ministère du Tourisme et de la Culture**

Unité des programmes culturels
Direction des programmes et des services
401 Rue Bay, Suite 1700
Toronto, ON M7A 0A7
Téléphone: (416)-314-7691
Télécopieur: 416- 314-7175
Email : Ian.Hember@ontario.ca

Ontario

January 10, 2011

Tom Hockin
Northland Power Inc.
30 St. Clair Avenue West
17th Floor
Toronto, Ontario,
Canada
M4V 3A1

RE: **Glendale Solar Generation Facility, Part Lots 15 and 16, Concession 5 and Part Lot 16, Concession 6, Township of South Glengarry, United Counties of Stormont, Dundas and Glengarry, Ontario, FIT-FAH1BFV, MTC File no. HD00503, PIF No. P007-245-2010.**

Dear Proponent:

This letter constitutes the Ministry of Tourism and Culture's written comments as required by s. 22(3)(a) of O. Reg. 359/09 under the *Environmental Protection Act* regarding archaeological assessments undertaken for the above project.

Based on the information contained in the report(s) you have submitted for this project, the Ministry believes the archaeological assessment complies with the *Ontario Heritage Act's* licensing requirements, including the licence terms and conditions and the Ministry's 1993 Archaeological Assessment Technical Guidelines. Please note that the Ministry makes no representation or warranty as to the completeness, accuracy or quality of the Report(s).*

The report(s) recommends the following:

*In sum, Findspots 1-4 have the potential to be archaeologically significant. However, in consultation with the proponent and MTC, it was agreed that the findspots could be protected by a combination of avoidance and a project buffer of 20 m (see Appendix A). As a result, it is recommended that the project be allowed to proceed without further heritage concerns.*

*This report is filed with the Minister of Tourism and Culture as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18. The report will be reviewed to ensure that the licenced consultant archaeologist has met the terms and conditions of their archaeological licence, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario.*

*Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licenced consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1)*

*of the Ontario Heritage Act. This condition provides for the potential for deeply buried or enigmatic local site areas not typically identified in evaluations of potential.*
*Stage 1-2 Archaeological Assessment, Glendale Solar Project (FIT – FAH1BFV), South Glengarry Township, Ontario.*

*The Cemeteries Act requires that any person discovering human remains must immediately notify the police or coroner and the Registrar of Cemeteries, Ministry of Small Business and Consumer Services. All work in the vicinity of the discovery will be suspended immediately. Other government staff may be contacted as appropriate; however, media contact should not be made in regard to the discovery.*

*Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48(1) of the Ontario Heritage Act, and may not be altered, or have artifacts removed, except by a person holding an archaeological licence.*

The Ministry is satisfied with these recommendations.

This letter does not waive any requirements which you may have under the Ontario *Heritage Act*. A separate letter addressing archaeological licensing obligations under the Act will be sent to the archaeologist who completed the assessment and will be copied to you.

This letter does not constitute approval of the renewable energy project. Approvals of the project may be required under other statutes and regulations. It is your responsibility to obtain any necessary approvals or licences.

Please feel free to contact me if you have questions or require additional information.

Sincerely,

Ian Hember
Archaeology Review Officer

c. Paul Racher, Archaeological Research Associates

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