

ALBERTA UTILITIES COMMISSION
FACILITIES APPLICATION
(AUC RULE 007)
FOR THE PROPOSED
BURDETT SOLAR PROJECT

Submitted by:
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PP37) State whether the proposed plant will comply with the Alberta *Ambient Air Quality Objectives and Guidelines* and any other standards or guidelines that are applicable to the proposed project for ground-level concentrations of pollutants.27

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EXECUTIVE SUMMARY

SunEEarth Alberta Solar Development Inc. (“SunEEarth”), which is wholly owned by BluEarth Renewables Inc. (“BluEarth”), is bringing an application to construct and operate the Burdett Solar Project (the “Project”), an up to 20MW solar photovoltaic facility consisting of solar panels, racking systems, inverters, electrical collector systems, internal access roads, distribution interconnection equipment, SCADA, communications and telecommunications equipment and other ancillary equipment.

The Project is proposed to be located in the County of Forty Mile at the intersection of Township Road 102 and Range Road 122, approximately 1.5km southwest of Burdett. The Project would be situated within a single quarter section of land, that being SE-15-10-12-W4. A preliminary layout including the anticipated location of inverters (for the purposes of a noise impact assessment) is contained herein. The exact location of the Project infrastructure within the quarter section has yet to be confirmed and will be determined through additional studies, equipment procurement and engineering designs. For clarity, all Project infrastructure including the distribution grid interconnection equipment, will be situated within the quarter section of land referenced above.

The Project is proposed to connect to the Burdett 368S substation, which is immediately adjacent to the Project lands within the same quarter section. As a distribution connected facility, a Project substation transformer is not required.

The Project would generate enough renewable energy to power 2600 homes annually. It would make an important contribution to the Government of Alberta’s Climate Leadership Plan under which renewable energy sources will replace two-thirds of coal-fired generation, which is being phased out.

As detailed in this application, SunEEarth has received a Historical Resources Clearance from Alberta Tourism and Culture and a Renewable Energy Referral Report from Alberta Environment and Parks. Development permits are in the process of being submitted to the local municipality. Furthermore, all aspects of the Participant Involvement Program have been implemented.

BluEarth is a Calgary-based private, independent renewable power producer focused on the acquisition, development, construction, and operation of wind, water, and solar projects in

Canada. With the most experienced renewable energy development team in the country, BluEarth's mission is to be the renewable energy leader by owning and operating a diverse portfolio that optimizes people, planet, and profit. In 2016, the BluEarth project portfolio grew to over 170 MW of operating capacity. Within this capacity, the BluEarth owns and operates 48.5 MW_{AC} of solar power generation. Additionally, BluEarth has another 54W_{AC} in development through a contract with Ontario's LRP 1 initiative.

The Project schedule is anticipated to be as follows.

Table 1 - Proposed Project Schedule

Project Activity	Date
Public Meeting (completed)	November 24, 2015
Public Consultation	Ongoing
Alberta Utilities Commission Application Submission	February 2017
AESO Interconnection process complete	May 2017
Municipal Zoning & Development Permit Process	January 2017 – February 2017
Project Construction	June 2017 to January 2018
Commercial Solar Power Operations	January, 2018

POWER PLANT APPLICATION

This Application addresses the information requirements outlined within the Alberta Utilities Commission (“AUC”) Rule 007 *Applications for Power Plants, Substations, Transmission Lines and Industrial System Designations and Hydro Developments*, and specifically those required under Section 3 (*Power Plant Applications 1 Megawatt (MW) or Greater*) (hereinafter “PP” requirements).

Note that since the Project is proposed to be distribution connected and does not require a transformer substation, Rule 007, Section 7 (*Transmission Line / Substation Applications*) is not applicable and is therefore not included herein.

PP1) Identify the sections of the *Hydro and Electric Energy Act* under which the application is made.

SunEEarth brings this Application under Sections 11 of the *Hydro and Electric Energy Act*, R.S.A. 2000, c. H-16 (the “*HEEA*”), as amended.

PP2) Identify any other acts (e.g., *Environmental Protection and Enhancement Act*, *Water Act*, and *Wildlife Act*) that may affect the project.

The following provincial and federal statutes may affect the Project:

- *Electric Utilities Act*, S.A. 2003, c. E-5.1;
- *Municipal Government Act*, R.S.A. 2000, c. M-26;
- *Wildlife Act*, R.S.A. 2000, c. W-10;
- *Historical Resources Act*, R.S.A. 2000, c. H-9;
- *Public Highways Development Act*, R.S.A. 2000, c. P-38;
- *Migratory Birds Convention Act, 1994*, S.C. 1994, c. 22;
- *Species At Risk Act*, S.C. 2002, c. 29;
- *Environmental Protection and Enhancement Act*, R.S.A. 2000, c. E-12;
- *Safety Codes Act*, R.S.A. 2000, c. S-1;
- *Alberta Utilities Commission Act*, S.A. 2007, c. A-37.2; and
- *Water Act*, R.S.A. 2000, c. W-3.

PP3) State the approvals that are being applied for from the Commission, and provide a draft of the approval being requested.

SunEEarth applies for an approval pursuant to Section 11 of the *HEEA*, an order approving the construction and operation of the Project. In support of this power plant application, SunEEarth relies on the information provided herein and in the appendices to this Application. A draft of the approval is provided in Attachment 1.

PP4) Provide a list of existing approvals for facilities directly affected by this project, if any.

There are no known existing approvals for facilities directly affected by the Project.

PP5) Provide details and outcome of consultation with local jurisdictions (e.g., municipal districts, counties).

The Project is within the municipal jurisdiction of the County of Forty Mile (“County”). SunEEarth has maintained a positive ongoing dialogue with the County since August, 2014 which has included several in-person meetings to review the Project. Both Reeve Hutchison and Councillor Timmons attended the Project public meeting on November 24, 2015 and were supportive of the Project.

In consultation with SunEEarth, the County has developed and approved a land use by-law that allows the establishment of a new Solar Energy Facility District. SunEEarth is in the process of making an application under the by-law. As part of the application, SunEEarth will, among other things, conform to setbacks from municipal roads and provide visual simulations from several viewsapes identified by the County. It is anticipated that development permits will be issued in early 2017, subject to the County’s approval.

PP6) Provide a list of parties that may be affected by your project, confirm that these parties have no concerns regarding your application, and indicate which other agreements are necessary to carry out your project.

Notification and consultation with landowners and other interested parties is described in sections PP18 to PP24. Industry stakeholders within 2 km were provided notifications by mail or email. Industry stakeholders with land holdings within 800 m of the Project were consulted directly and a summary of these consultations is found in Table 2.

Table 2 – Industry Stakeholder Consultation

Industry Stakeholder	Summary of Consultation
Signalta Resources	Discussed Project noise study and permitting and approval process. No concerns noted.
St. Mary Irrigation District	Discussed permitting and approval process. Representative attended public open house meeting. No concerns noted.
Altalink	Provided Project materials. Altalink requested notification when work is to occur within 300m of their facility.
Canadian Pacific Railway	Discussed location of Project. No concerns noted.

PP7) For wind power plants, provide a copy of approval from Transport Canada for any structures 20 metres or taller and an evaluation from NAV Canada.

This application is not for a wind power plant. However, the Project is proposed to have an up to 30m tall communication tower for the purposes of transmitting operational data and, if required, interfacing with AESO. Should the communications tower require approval from Transport Canada or NAV Canada, the required applications will be filed.

PP8) For wind power plants, provide a copy of an assessment from Environment Canada regarding the potential for interference with weather radars. For assessments in which Environment Canada has identified the potential for significant interference with a weather radar, also provide a copy of a mitigation agreement to be concluded with Environment Canada prior to operation of the wind power plant. No wind power plant will be permitted within a five-kilometre radius, or as otherwise agreed to by Environment Canada, of a federal weather radar station due to the significant interference to Environment Canada’s ability to accurately forecast the weather.

Not applicable as the Application is for a solar power plant.

PP9) Provide a copy of the approval from Alberta Transportation if a wind powerplant that is within 300 metres of a numbered highway is being applied for.

Not applicable as the Application is for a solar power plant and the Project will not be within 300 metres of a numbered highway.

PP10) Confirm that an application to AEP has been made, if applicable, and list all other government departments and agencies from which approval is required. For all power plant applications, a local AEP wildlife biologist must be consulted unless the project is located within an urban area with no nearby wildlife habitat. The Commission requires a sign-off from AEP prior to processing any new wind power or solar power applications.

AEP has reviewed the Environmental Evaluation which was prepared for the Project. See PP17 for details. AEP provided a Wildlife Renewable Referral Report (“Referral Report”) on October 26, 2016 (Attachment 2). Further to receiving the Referral Report, SunEEarth engaged Hemmera Envirochem Inc. (“Hemmera”) to assist with determining additional environmental mitigations to address concerns noted by AEP in the report. The enclosed Memorandum dated January 16, 2017 (Attachment 3), details the subsequent discussions with AEP and the additional proposed mitigations to address potential wildlife impacts. See PP17 for more details.

A *Water Act* Approval & Notifications are in the process of being filed with AEP.

A *Historic Resources Act* approval was received on October 19, 2016. Please see Attachment 4.

As noted in PP7, depending on the height of the proposed communication tower, a permit may be required by NAV Canada and Transport Canada.

No other government agency approvals are required for the Project.

PP11) With respect to new facilities or alterations that may have historical, archaeological or paleontological impacts, confirm that a *Historical Resources Act* approval has been obtained or is being applied for. If a historical impact assessment is required, briefly describe any historical, archaeological or paleontological sites close to the power plant site. Please ensure that any summary provided protects the confidential location of any historical, archaeological or paleontological resources.

A *Historic Resources Act* approval was received on October 19, 2016. Please see Attachment 4.

PP12) Provide the ISO-assigned asset identification code, if available.

The AESO-assigned asset identification code is Project 1696.

PP13) Provide the legal description of the proposed power plant site (legal subdivision [LSD], Section, Township, Range, Meridian and/or Plan, Block, Lot, municipal address for urban parcels) and connection point, if applicable.

The legal land description of the site is SE-15-10-12-W4. The connection point will be immediately adjacent to the site at the Burdett 368S substation.

PP14) For wind power plant applications, provide the longitude and latitude coordinates for the centre of each structure supporting a wind-powered generator. If, after approval is granted, the location of any supporting structure has to be relocated more than 50 metres from the coordinates stated in the application, the power plant proponent must reapply to the Commission for approval to relocate the structure prior to construction. For movement of less than 50 metres, the applicant is not required to reapply unless there is an adverse impact on the permissible sound level or wildlife setback distances.

The application is for a solar power plant. The exact final location of the equipment has not been determined, but will be confirmed after a detailed engineering design has been undertaken. With the possible exception of a short connection line to the adjacent Burdett 368S substation, all Project infrastructure will be located within SE-15-10-12-W4. The anticipated location of inverters has been included in the Noise Impact Assessment. See Attachment 5 for Project design details.

As part of the Participant Involvement Program, residents were notified that the final locations of equipment within quarter section SE-15-10-12-W4 may be subject to change. Any material changes will be communicated to residents within 800 m of the Project.

PP15) Describe the number of generating units and the total capability (kilovoltampere [kVA], or megavolt-ampere [MVA]) for the project.

The Project is proposed to consist of ten generators. An array of 70,000 320 W solar panels connected to a maximum of ten up to 2,200 kV inverters (generators) for a total nameplate capacity of up to 20MW. The exact type of solar panels and inverter technology has yet to be confirmed and will be determined through additional engineering and procurement processes. However, specifications for the currently proposed solar panels are included in PP29. Should the final design differ from these assumptions, the Commission will be consulted to determine if an amended Application is required. Any material changes will be communicated to residents within 800 m of the Project.

PP16) Describe the existing environmental and land use conditions in the local study area, and discuss potential siting and land use issues. Also, describe the regional setting of the development including regional land use plans in force (e.g., the Lower Athabasca Regional Plan). If applicable, include maps showing important environmental features and sensitive areas in the local study area.

The Project is proposed to be located within a single quarter section of land (SE-15-10-12-W4) which is a cultivated field adjacent to other cultivated areas and roads. The Project is not sited in native prairie. The Burdett 368S substation occupies a portion of the southwestern corner of the quarter section and this area is outside the boundary of the area proposed for the Project. See Attachment 5 for design details.

An Environmental Evaluation was prepared to determine potential environmental effects of the Project. Refer to PP17 for details and mapping. No rare plants or rare ecological communities were observed. The proposed Project footprint within the quarter section will remove one Class III wetland and partially remove one Class I and one Class II wetland. Four other wetlands in the Project area will be retained (one Class I, one Class III and two Class IV). As per the AEP Wildlife Renewable Referral Report (Attachment 2), a *Water Act* Application is being made for

those wetlands not retained and a compensation plan will be confirmed prior to Project construction.

A Noise Impact Assessment was conducted in accordance with AUC Rule 012 and is provided in Attachment 6. The Noise Impact Assessment concludes that the predicted comprehensive noise impact from the Project including all other third-party energy related facilities in the area is in compliance with AUC Rule 012 noise limits.

As noted in PP11, a *Historic Resources Act* approval was received on October 19, 2016.

PP17) At a level of detail commensurate with the size and type of potential effect(s) of the project, complete and submit an environmental evaluation of the project and provide a sign-off from AEP addressing the environmental aspects of the project that AEP is satisfied with.

An environmental evaluation describes and predicts a project's effects on the environment before the project is actually carried out, and the measures to avoid or mitigate the project's predicted adverse environmental effects and any monitoring proposed to evaluate the efficacy of those measures. The purpose of an environmental evaluation is to ensure that enough information is provided by the applicant to inform the public and government agencies about the applicant's understanding of the consequences of its project, and to help the AUC determine if the project is in the public interest. The environmental evaluation should be conducted or overseen by an individual or individuals who possess appropriate environmental experience related to the type and scale of development. An environmental evaluation should:

- describe the present (pre-project) environmental conditions in the local study area**
- identify and describe the project activities and infrastructure that may adversely affect the environment**
- identify what specific ecosystem components (i.e., terrain and soils, surface water bodies and hydrology, groundwater, wetlands, vegetation species and communities, wildlife species and habitat, aquatic species and habitat, air quality and environmentally sensitive areas) within the local study area may be adversely affected by the project**
- describe the potential adverse effects of the project on the ecosystem components during the life of the project**
- describe the mitigation measures the applicant proposes to implement during the life of the project to reduce these potential adverse effects**
- describe the predicted residual adverse effects of the project and their significance after implementation of the proposed mitigation**

describe any monitoring activities the applicant proposes to implement during the life of the project to verify the effectiveness of the proposed mitigation

describe the methodology used to identify, evaluate and rate the adverse environmental effects and determine their significance, along with an explanation of the scientific rationale for choosing this methodology

If the power plant project requires preparation of a federal environmental assessment report or a provincial environmental impact assessment report, then that report should be submitted as an appendix to the application as required by PP38, and a separate environmental evaluation report satisfying the requirements of PP17 need not be prepared for the project. In such cases, the federal environmental assessment or the provincial environmental impact assessment report is sufficient to also satisfy the environmental requirements outlined in PP17.

An Environmental Evaluation (“EE”) was prepared in accordance with the requirements set out above (see Attachment 7). The EE takes into consideration findings of both the Wildlife Assessment Report and Wetland Assessment Report which were completed for the Project. Both are enclosed within the EE. To complete these reports, Stantec was engaged to conduct a desktop review and suite of field studies consisted of breeding birds, burrowing owls, amphibian, raptor nest wetland and rare plant surveys.

Table 3 indicates where the required components can be found within the EE document.

Table 3 – Environmental Evaluation Concordance with PP17

PP17 Requirement	Applicability to Project	Report Section
Environmental conditions	Baseline conditions were examined through wildlife and wetland assessments during Spring and Summer 2015.	Appendix A and B
Project activities & infrastructure	Project activities and infrastructure have been described.	Section 2.1
Ecosystem components <ul style="list-style-type: none"> ○ Terrain & soils ○ Surface water bodies & hydrology ○ Groundwater ○ Wetlands ○ Vegetation species & communities ○ Wildlife species & habitat ○ Aquatic species & habitat ○ Air quality ○ Environmentally sensitive 	Ecosystem components included in this Environmental Evaluation are outlined.	Table 2

areas		
Potential adverse effects	Potential adverse effects have been considered and evaluated.	Section 4
Mitigation measures	Mitigation measures were examined within wildlife and wetland assessment reports and summarized.	Section 4
Predicted residual effects	Predicted residual effects have been considered and are described.	Section 4
Monitoring	A post-construction monitoring plan has been developed in consultation with AEP.	Section 5
Methodology	Methods used to identify, evaluate and rate adverse effects are described.	Section 3

Table 4 below from Section 4.2 of the EE identifies the potential effects, mitigations, predicted residual effects and significance of effects.

Table 4 – Environmental Evaluation of Potential Effects, Mitigations, Predicted Residual Effects and Significance of Effects

Potential Effect and Effect Pathways	Mitigation Measures	Predicted Residual Effects	Significance of Effects
Wildlife mortality during construction <ul style="list-style-type: none"> • ground disturbance resulting in destruction of key habitat features (e.g., nests, dens, hibernacula) • vehicle and equipment movement, and ground disturbance resulting in accidental mortality of small, less-mobile species or individuals (e.g., amphibians) 	Siting considerations – Project was not sited on native prairie. Project Area contains low to negligible quality wildlife habitat. Should construction be scheduled to occur within restricted activity periods (e.g., breeding season for birds and amphibians), pre-construction nest sweeps and nocturnal acoustic amphibian surveys will be conducted immediately prior to any ground disturbance activities to mitigate any potential wildlife concerns. For a full list of mitigation measures see Environmental Evaluation, Appendix B, Table 4.	As the Project is located within cultivation and the area of disturbance is small, the potential for direct mortality is greatly reduced. Given the incorporation of mitigation and appropriate timing of construction the Project is anticipated to have a low potential for effects on wildlife during construction.	Not significant
Bird mortality during operation	None recommended at this time.	Given the small size of the proposed Project and the fact that habitat suitable for waterbirds is limited (and observed to be dry in 2015) in the proposed footprint but abundant in the landscape,	Not significant

		<p>mortality effects are expected to be low.</p> <p>Additionally, wetlands within the Project Area are not suitable to support waterbirds because of the lack of surface water. Considering this, the Project is expected to have low potential effects on bird mortality.</p>	
<p>Change in wildlife habitat availability or suitability during construction</p> <ul style="list-style-type: none"> • direct habitat loss or alteration through vegetation clearing 	<p>Project was not sited on native prairie.</p> <p>Project Area contains low to negligible quality wildlife habitat. Project Area also contains low to negligible quality wetland habitat (see Environmental Evaluation, Appendix B).</p>	<p>Given the low to negligible quality of upland and wetland habitat, Project effects on wildlife habitat are expected to be low to negligible.</p>	<p>Not significant</p>
<p>Changes to wetland water quality or quantity during construction</p> <ul style="list-style-type: none"> • changes in surface water and groundwater flow and quality potentially affecting wetlands 	<p>No indirect effects to surrounding wetlands are expected. For a full list of mitigation options see Environmental Evaluation, Appendix B, Table 4.</p>	<p>Mitigation should be effective at managing effects to wetland water quality.</p>	<p>Not significant</p>
<p>Loss of wetlands during construction</p> <ul style="list-style-type: none"> • alteration or loss of wetland area or class through vegetation clearing 	<p>Wetland loss (three wetlands totaling 0177 ha) resulting from the development of the Project will be compensated through a wetland compensation plan.</p>	<p>The Project will result in a loss of three wetlands; however, significant residual effects are not anticipated as the loss will be compensated.</p>	<p>Not significant</p>

The EE concludes that the potential effects from the Project can be mitigated with standard environmental protection measures and compensation for wetlands loss. Consequently, residual adverse effects are predicted to be not significant.

AEP reviewed the EE and provided a Referral Report on October 26, 2016 (Attachment 2). The Referral Report noted that a 100m setback from Class III wetlands in sensitive amphibian habitat was not being observed. Subsequently, SunEEarth retained Hemmera to help identify further

environmental mitigations to address this concern and to assist with additional consultation with AEP.

A teleconference with AEP was held on December 19, 2016, to review AEP's comments in the Referral Report. AEP discussed how the 100m setback from wetlands was desired, in part, to protect emerging amphibians from being crushed by vehicles. To address this concern, SunEEarth committed to investigating additional mitigation measures and reviewing the location of the access roads to determine if they could be relocated to be 100m or more from wetlands.

A Memorandum (Attachment 3) was developed by Hemmera for the purpose of summarizing the discussion with AEP as well presenting the additional mitigations and Project design modifications meant to address the desired 100m setback.

As described in the Memorandum, the Project design was altered to relocate access roads to be outside the 100m setback from Class III wetlands. The Project design was also altered to only partially remove rather than fully remove two wetlands (one Class I and one Class II).

Other Project infrastructure (i.e. fencing, panel areas) are proposed to remain up to 30m from Class III wetlands and up to 15m from Class I and II wetlands. As these areas do not have infrastructure with moving parts and are not regularly used by maintenance vehicles, the potential for amphibian mortality is very low. Furthermore, according to the *Recommended Land Use Guidelines for Protection of Selected Wildlife Species and Habitat within Grassland and Parkland Natural Regions of Alberta* (ASRD 2011), the 100m setback noted in the Referral Report only applies to Class III wetlands on native prairie habitat and for northern leopard frog breeding ponds. There is no native prairie habitat on the proposed Project site and there is negligible quality habitat for northern leopard frog due to the long-term cultivation disturbance.

As also noted in the Memorandum, additional mitigation measures have been proposed such as imposing vehicle speed limits, implementing employee amphibian observation training, suspending vehicle operations when amphibians are detected, addition of temporary exclusion fencing (silt fence) around wetlands when amphibians are detected, and the development of a stormwater management plan.

The Memorandum presents a rationale for the proposed setbacks and mitigation measures and concludes that based on the low quality of amphibian habitat, the lack of confirmed presence of sensitive amphibians within wetlands, and the mitigation measures proposed, no adverse significant effects to amphibians or amphibian habitat are expected for the retained wetlands.

PP18) If the project site occurs within the plan boundaries of a regional land use plan in force:

i. Confirm that the proposed project is being developed in accordance with the applicable regional land use plan

ii. Confirm if the proposed project is in a conservation area or provincial recreation area established in the applicable regional land use plan. Provide submissions describing how the activity may be considered incidental to a previously-approved activity.

iii. Indicate what, if any, management frameworks in place under the applicable regional land use plan are applicable to the project, the reason why any management frameworks are not applicable to the project, and summarize discussions held with AEP and any other government department required to be consulted under the management frameworks regarding the project and its impacts in terms of the management frameworks. Include details on any actions or mitigation measures recommended as a result of the discussions and describe how these actions or mitigation measures will be incorporated into the project.

The Project is proposed to be located in an area subject to the South Saskatchewan Regional Plan (SSRP). The South Saskatchewan Region is large and diverse, bordered by the Rocky Mountains to the west, the Canada-USA border to the south, the Alberta-Saskatchewan border to the east and the northern municipal boundaries of Bighorn and Rocky View and Wheatland, Newell and Cypress counties. The SSRP encourages robust growth, the development of vibrant communities and a healthy environment within the region over the next 50 years while identifying strategic directions for the region over the next ten years.

The Project is being developed in accordance with the SSRP through demonstrating that:

- The SSRP endorses opportunities for the responsible development of the region's renewable energy industry in support of Alberta's commitment to greener energy production and economic development (the Project falls under the renewable energy category);

- The SSRP seeks to maintain terrestrial and aquatic biodiversity (the Project has been sited on cultivated land and aquatic biodiversity is not affected); and
- The SSRP seeks to maintain intact native grassland and habitat (the Project has been sited on cultivated land with low to negligible quality wildlife habitat).

The South Saskatchewan Region Air Quality Management Framework within the SSRP focuses on managing ambient air quality with respect to ambient concentrations of nitrogen dioxide (NO₂), ozone (O₃) and fine particulate matter (PM_{2.5}). Some particulate matter may be released during construction as a result of operation of construction vehicles and equipment and dust generation. However, the duration of construction is limited and best management construction practices will be implemented to mitigate the extent of any release.

Other than minor, infrequent and time-limited emissions associated with facility maintenance (e.g. vegetation management and light vehicle usage), the Project will not emit NO₂, O₃ or PM_{2.5} during operation and therefore will not contribute cumulatively to their release in the region. Over the long term, solar energy projects will help reduce these constituents through the displacement of polluting forms of energy generation. As such, the Project aligns with the framework's objective to ensure that development can continue and air quality is maintained or improved to support a healthy population.

Furthermore, the Project is not being developed within a conservation or provincial recreation area.

PP19) Describe the participant involvement information. (See Appendix A1– Participant involvement program guidelines).

This section describes the participant involvement information activities that have been conducted to date. SunEEarth implemented a participant involvement program (“PIP”) to:

- a) Distribute project-specific information in order to inform stakeholders of the proposed Project and to convey associated information in a way that was clear and to ensure all technical details were presented in a manner that the public was able to comprehend;

- b) Provide stakeholders with opportunities to ask questions and express concerns about the Project and have those questions and concerns addressed in an honest and timely manner; and
- c) Based on those stakeholder questions and/or concerns, discuss options and measures to mitigate the concerns.

The PIP was developed in accordance with the requirements provided in Appendix A of AUC Rule 007 and consisted of the following activities:

- A Project website (www.bluearth.ca/burdett) was established prior to the commencement of the PIP in November 2015, which provided a Project description, the PIP notices and information about the public meeting. The website remains active with current information about the Project.
- November 2015: all occupants, residents, landowners and industry stakeholders within 2000 m radius from the edge of the Project site boundary were notified of the Project via information packages (see Attachment 8). Since the 2000 m radius encompassed only a portion of the village of Burdett, it was decided to expand the notification area to capture all of Burdett. A total of 179 stakeholders were notified of the proposed Project.
- November 10, 2015: a notification regarding the proposed Project and public open house meeting was published in the local newspaper, the Bow Island Commentator (Attachment 9)
- November 24, 2015: public meeting was held in Burdett at the Burdett Community Hall. Over 30 people attended over a three-hour period. Three representatives from SunEEarth were present to discuss the project and address questions and concerns. Poster boards were displayed that described various aspects of the Project. See Attachment 10 for the information presented. Note that this meeting also presented

information for the SunEEarth Yellow Lake Solar Project for which an application to the Commission will be filed separately.

- November to December 2015: personal consultations were conducted with occupants, residents, landowners and industry stakeholders that were within 800 m from the edge of the reduced Project site boundary. In all, a total of 13 of these stakeholders were personally consulted and the results are provided in Attachment 11.
- November, 2016: a project update letter was sent to occupants, residents, landowners and industry stakeholders within 2000 m radius. See Attachment 12.

PP20) List all occupants, residents and landowners on lands within the appropriate notification radius as determined using Appendix A1– Participant involvement program guidelines, as well as other interested persons that were consulted as part of the participant involvement program. If there are populated areas just outside the minimum notification distance, applicants should consider including those areas in the participant involvement program.

Please see Attachment 13 for a listing of all parties within 800 m and 2000 m of the Project.

PP21) Supply a list of mailing addresses, with corresponding land locations and two sets of printed mailing labels of those parties mentioned in PP20, above.

Please see Attachment 14 for mailing labels associated with PP18.

PP22) Identify any persons who expressed concerns about the project and the specifics of their concerns.

Please see consultation table in Attachment 11. No concerns were presented by persons outside the 800 m consultation area.

PP23) Summarize discussions held with potentially directly and adversely affected persons.

Table 5 summarizes the concerns and discussions held with potentially affected persons.

Table 5 – Summary of Concerns and Discussions

Concern	Summary of Discussion	Outcome
Weed control	Discussed how weed management is important to the project and that weed control is primarily done through mechanical means with selective herbicide applications if needed	No outstanding concerns.
Visual impact and glare potential	Discussed low height of panels as compared to other structures on the landscape. Reviewed lines of sight from residence. Discussed the low potential for reflections/glare because of the colour and low reflectivity characteristics of the panels.	No outstanding concerns. The solar panels face south. The only residence that have the potential to be affected by glare is approximately 850m to the south and has existing vegetation screening around the house.
Water flow management	Discussed how a stormwater management plan will be implemented to ensure water flows are maintained and not increased or decreased because of the solar facility	No outstanding concerns.
EMF	Noted that the project will connect to the adjacent Burdett substation which minimizes or avoids the installation of any additional distribution lines. Discussed how the project would not contribute to EMF at any local residences	No outstanding concerns.
Noise	Discussed that the project will conform to AUC noise level requirements. Also, that the project will not be operating during night-time hours	No outstanding concerns.
Use of farmland	Noted that solar development constraints, particularly avoidance of native grassland, meant that development opportunities are mostly limited to agricultural areas. The solar facility can be completely decommissioned after its life span and the land returned to previous agricultural use	No outstanding concerns.

PP24) If potentially directly and adversely affected persons raised any concerns, describe how these concerns were dealt with or are being dealt with.

Please refer to PP22 for discussion of stakeholder feedback and resolution of concerns.

PP25) For those potentially directly and adversely affected persons identified above, include a confirmation of resolution of the concerns, if applicable.

Please refer to PP22 for confirmation of resolution of concerns. To date, no additional concerns have been raised.

PP26) If the power plant is to be located within an oil and gas facility, confirm the power plant will comply with the standards outlined in Section 8.090 of the *Oil and Gas Conservation Rules*.

The power plant will not be located within an oil and gas facility.

PP27) Provide a noise impact assessment, in accordance with the current Rule 012.

Based on the preliminary Project design, Aercoustics Engineering Ltd. developed the “Noise Impact Study” to demonstrate compliance with the requirements of the current (April 1, 2013) version of the AUC Rule 012: Noise Control. See Attachment 6. The assessment shows that the predicted comprehensive noise impact from the Burdett Solar Project including all other third-party energy related facilities in the area is in compliance with AUC Rule 012 noise limits.

PP28) For an application where no changes to the major components of the power generating equipment are contemplated after filing the application, provide details of the power generating equipment and associated facilities, such as make, model and nominal capability.

Changes to the power generating equipment (solar panels and inverters) are possible once a detailed design and procurement phase has been completed. The power generating components currently proposed are listed in PP29. As part of the Participant Involvement Program, residents were notified that the final locations of equipment within quarter section SE-15-10-12-W4 may be subject to change.

PP29) For an application where vendors which are to supply the major components of the power generating equipment have not been selected, provide the nominal capability of the applied-for power plant and the design and maximum operating parameters, and characteristics specified for the power generating equipment and associated facilities.

Changes to the power generating equipment (solar panels, inverters, padmount transformers, etc.) and locations are possible once a detailed design and procurement phase has been completed. The operating parameters of the currently proposed power generation equipment are provided in Table 6.

Table 6 – Power Generating Equipment Operating Parameters

Inverter MPP Input Voltage Range	570 to 950 V
Inverter Operating Voltage $V_{DC\ max}$	1,000 V
Inverter Nominal AC Power Output	2,220 kW
Inverter Rated Power Factor	1 / 0.8 leading to 0.8 lagging
Inverter AC Power Frequency	50 Hz, 60 Hz
Inverter Extended Operating Temp Range	-40°C to 60°C / -40°F to 140°F
Panel Cell Type	Poly-crystalline, 6 inch
Panel Peak Power P_{max}	320 W
Panel Operating Voltage V_{mp}	36.8 V
Panel Operating Temperature Range	-40° C to + 85° C

The Project is proposed to consist of arrays totaling approximately 70,000 320 W panels and associated racking systems, 10 x 2200 kW(AC) inverters and 10 x 2200 KVA, 385 V/24.94 kV padmount transformers.

Additional Equipment Required for the Project Includes:

- **Collector System:** DC combiner and re-combiner boxes and cabling, 24.94 kV padmount transformers, and underground electrical collection cables that connect the inverters to the Point of Interconnection (POI)
- **Distribution System Point of Interconnection:** The Project will be interconnected to the local Fortis distribution system at 24.94 kV. The voltage of the Project collector system will

be designed to match the voltage of the Fortis distribution system such that a Project substation is not required. The Fortis connections are anticipated to be simple T-Taps followed by a Project pole mounted disconnect switch, pole mounted circuit interrupter, and pole mounted revenue metering and station service equipment. This equipment will be contained within the Project site

- **E-House Building:** An on-site building will house electrical controls, protection and monitoring systems. In addition, a remote computer based system will be used to control and monitor the generating equipment including such parameters as active and reactive power output, terminal voltage, ramp rates and also operational and safety alarms and shutdowns. The facility will also contain a battery backup system. The building will house operational data communication equipment used to monitor and operate the facility remotely. Fibre-optic cabling will be installed to connect the communication and monitoring equipment to remote monitoring stations and to FortisAlberta and AESO if required. It is not expected that a communication tower will be required as communication with FortisAlberta will be done with fibre-optic cabling. However, if a communication tower is required it will be mounted on or located in close proximity to the e-house building
- **Operations and Maintenance Building:** to house spare parts, vehicles and maintenance equipment as well as provide office and welfare facilities for site staff. The building may be located on- site or off-site in a nearby existing building
- **Perimeter chain link fencing and security cameras:** A chain link fence will surround the perimeter of the facility. The facility entrance will be gated and locked. Security cameras will be installed for remote site monitoring
- **Parking area for site operators:** A gravel parking area will be located at the Project site
- **Project Roads:** Gravel roads will be installed through the site as illustrated on Attachment 5 to allow access to the generating equipment for site maintenance and operations

PP30) Present the estimated power plant heat rates, efficiency of the power plant and details of the cooling system for the power plant.

Due to the nature of solar photovoltaic technology, plant heat rates are not applicable and no cooling system is required.

PP31) State the fuel requirements of the power plant, including type, source, method of handling, transportation, processing, storage and environmental effects.

The solar power plant does not require fuel other than sunlight to produce power.

PP32) Provide a legible plant site drawing showing all major equipment components.

A plant site drawing is included in Attachment 5.

PP33) Provide a legible map showing the power plant site boundaries and land ownership, including any residences and dwellings within the appropriate notification radius as determined using Appendix A1– Participant involvement program guidelines, as well as any additional energy-related facilities within the project area.

A map showing the above-noted information is provided in Attachment 15.

PP34) Provide a legible map of the project area suitable for use in a public notice.

A map suitable for use in a public notice is provided in Attachment 16.

PP35) Supply the expected in-service dates, and describe ramifications if the approval date cannot be met.

The expected in-service date (“ISD”) for the amended Project is January 31, 2018. If the approval date cannot be met, SunEEarth will need to request an ISD extension from Fortis who in turn will be required to apply for an extension with the AESO. Depending on the AESO’s assessment of the ISD extension request, they may require that the Engineering Study Report (ESR) be revised to reflect the new ISD. Fortis may also elect to revise their corresponding interconnection study depending on connection activity on their system.

A project construction schedule is provided in Table 7.

Table 7 - Proposed Project Construction Schedule

Project Activity	Date
Permit and License Issued	June 2017
Access Construction	June 2017
Piles and racking installation	July to September 2017
Panel and inverter installation	July to November 2017
Collection line and combiner box installation	August to November 2017
Substation installation	October 2017
Commissioning	November 2017
Commercial Operations	December 01, 2017

PP36) Indicate the plant’s emission rates, in kilograms per megawatt-hour (kg/MWh) of nitrogen oxides (NO_x), sulphur dioxide (SO₂), and primary particulate matter, and state whether the emissions will comply with the current *Alberta Air Emission Standards for Electricity Generation* and any other emission standards or guidelines that are applicable to the proposed project.

The Project will not produce any emissions.

PP37) State whether the proposed plant will comply with the *Alberta Ambient Air Quality Objectives and Guidelines* and any other standards or guidelines that are applicable to the proposed project for ground-level concentrations of pollutants.

The *Ambient Air Quality Objectives and Guidelines* are not applicable to the Project as it will not produce any air pollutants.

PP38) Provide the federal environmental assessment or provincial environmental impact assessment as an appendix to the application, if one was required by a federal or provincial authority.

The applicant must obtain approval from AEP for thermal power plant facilities greater than one megawatt in total capability at one site. An environmental impact assessment is mandatory for thermal power plant facilities that use non-gaseous fuel and are greater than 100 megawatts in total capability; an environmental impact assessment may be required for other power plant facilities regardless of total capability. When an environmental impact assessment is not mandatory, AEP will determine if it is necessary, based on the specific nature of the project. The applicant should consult with the Commission and AEP in the initial stages of preparing its application to determine the level of detail required.

Not applicable as the Application is for a solar power plant and neither a federal or provincial environmental impact assessment is required. An Environmental Evaluation has been reviewed by AEP and a Wildlife Renewable Referral Report has been received (see Attachment 2).

PP39) If the power plant is to be connected to the Alberta Interconnected Electric System (AIES), irrespective of voltage level, provide the following information:

- **an electrical single-line diagram obtained from the ISO or sanctioned by the ISO showing the transmission development plan for the interconnection, and**
- **a map with one or more conceptual layouts showing possible routes and general land locations for facilities that would be used to interconnect the power plant to the Alberta Interconnection Electric System.**

The Project will be connected to the Fortis distribution system at 24.94 kV. For interconnection details, see the single-line diagram provided by Fortis Alberta in Attachment 17. The Project will be situated directly adjacent to the Burdett 368S Substation. Therefore, no additional interconnection routing will be required other than a short span (< 200 m) between the Project and feeder line to the existing Burdett 368S substation. Please refer to the figure provided in Attachment 18 for details.

PP40) If the power plant is to be connected at distribution voltage level to the Alberta Interconnected Electric System (generally less than 69 kV), the applicant must provide a statement from the distribution facility owner indicating that it is willing to connect the generating facilities.

The Project will be connected to the Fortis distribution system at 24.94 kV. Fortis Alberta has completed a high-level distributed generation study and provided a letter of non-objection for the Project. See Attachment 19.

PP41) For a municipality or a subsidiary of a municipality to hold an interest in a generating unit, documentation confirming compliance with Section 95 of the Electric Utilities Act is required.

Not applicable.

PP42) For a wind power plant application, provide legible maps and/or air photo mosaics upon which the proposed collector power line route or routes have been imposed and showing the residences, landowner names, and major land use and resource features (e.g., vegetation, topography, soil type,

existing land use, existing rights-of-way, and superficial and mineable resources).

The Project is not a wind power project. As stated in PP13, the Project will be contained within quarter section SE-15-12-W4 with the possible exception of a short connection line to the adjacent Burdett 368S substation. Please refer to Attachment 5 for site plan details.

ATTACHMENT 1
DRAFT APPROVAL

ATTACHMENT 2

**ALBERTA ENVIRONMENT AND PARKS RENEWABLE ENERGY REFERRAL
REPORT**

ATTACHMENT 3
AEP MEMORANDUM

ATTACHMENT 4

HISTORICAL RESOURCES ACT CLEARANCE

ATTACHMENT 5
PROJECT DESIGN MAP

ATTACHMENT 6
NOISE IMPACT STUDY

ATTACHMENT 7
ENVIRONMENTAL EVALUATION

ATTACHMENT 8

PIP INFORMATION PACKAGES

ATTACHMENT 9

PIP NEWSPAPER NOTICE

ATTACHMENT 10

PUBLIC MEETING INFORMATION BOARDS

ATTACHMENT 11
PIP CONSULTATION RESULTS

ATTACHMENT 12
PROJECT UPDATE LETTER

ATTACHMENT 13
PIP PARTICIPANT LISTING

ATTACHMENT 14

PIP MAILING LABELS

ATTACHMENT 15

PROJECT SITE AND LAND OWNERSHIP MAP

ATTACHMENT 16

PUBLIC NOTICE MAP

ATTACHMENT 17
SINGLE LINE DIAGRAM

ATTACHMENT 18
INTERCONNECTION MAP

ATTACHMENT 19
FORTISALBERTA LETTER