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**Renewable Energy Approval (REA)
 Project Description Report
 s. 13 (Table 1, Item 10) of Ontario Regulation 359/09**

Project Description Report (PDR)

[The numbers in brackets refer to sub-sections of "Technical Bulletin One" PIBS 7436e.]

April 21, 2010

(Revised July 5, 2011)

Section 1 – General Project Information and Contacts

Project Name [3.1]	Penn Energy – S. Glengarry_St. Lawrence-1 Penn Energy – S. Glengarry_St. Lawrence-1 (i-1)
Project Description [3.1]	10 MW Solar PV Renewable Energy Generation Facility ("REGF"); 9,333 kW base with additional 667 kW incremental application pending with OPA
Project Location [3.1]	18423 & 18461 County Road 19 (west of Nine Mile Road); South Glengarry, United Counties of Stormont, Dundas & Glengarry, Ontario
OPA FIT Application No.	FIT-F3AP3XM (base) and FIT-FS6SMFB (incremental)
Applicant [3.2]	Penn Energy Renewables, Ltd. 1 Yonge Street, Suite 1801, Toronto, ON M5E 1W7
Project Contact [3.2]	Max Frable Max@PennEnergyRenewables.com Penn Real Estate Group, Ltd. 620 Righters Ferry Road, Bala Cynwyd, PA, USA 19004 Office: 610-668-0300 x1007 Fax: 610-668-0365

Section 2 – Are Any Related Authorizations Required?

Conservation Authority (CA) [3.3]	<p>No. The Raisin Region Conservation Authority (RRCA) reviewed their records in respect of the proposed REGF project location and identified a watercourse ("<i>the Woods Drain – a Class C fish habitat, meaning warm water & baitfish species and some riparian vegetation</i>") running West to East, roughly through the middle of the subject parcels. Other RRCA observations included:</p> <ul style="list-style-type: none"> • <i>No floodplain data, organic soils or wetlands were observed.</i> • <i>Any work in or around the drain would require a fishery review under S. 35 of the Federal Fisheries Act.</i> • <i>If all the work is to take place south of Woods Drain, the RRCA would have no adverse comments or concerns other than maintaining a vegetated buffer adjacent the drain.</i> • <i>A 15 to 30 m setback from the drain for any site alterations and development would be preferable.</i> <p>Following this consultation with the RRCA very early in the project's design phase, the REGF's footprint was substantially modified by removing it entirely from the</p>
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	<p>woodlands to the North of the Woods Drain and by establishing a 30 m setback from the southern extent of the Drain. In fact, the project footprint was subsequently reduced <u>a second time</u> in order to avoid a newly identified wetland and to provide a 30 m buffer from it. These modifications resulted in the project's location being at least 120 m from the Woods Drain (which actually placed it outside of the prescribed "study area" of lands in or within 120 m of the project location.)</p> <p>Bowfin Environmental Consulting of Cornwall, ON has confirmed:</p> <ul style="list-style-type: none"> • <i>there are no water bodies in or within 120m of the REGF project location;</i> • <i>there will be no alterations to watercourses; and</i> • <i>no fish or fish habitat will be impacted by this project.</i>
Ministry of Natural Resources (MNR) [3.3]	No. MNR's Kemptville District Manager has confirmed the findings of the Natural Heritage Assessment and Environmental Impact Study Report prepared by Bowfin Environmental Consulting of Cornwall, ON. <i>See Section 4 for more details.</i>
Ministry of Tourism & Culture (MCI) [3.3]	No. The MTC has reviewed the Stage 1 and 2 Archaeological Assessment Report prepared by Northeastern Archaeological Associates of Port Hope, ON. An Archaeology Review Officer has stated that the MTC believes this assessment complies with the Ontario Heritage Act and that the Ministry is satisfied with the recommendations included therein. In respect of Protected Properties, Unterman McPhail Associates (UMA) of Toronto, ON has screened the property and verified that the proposed project is not located on nor does it abut any protected properties as described in Column 1 of the Table to section 19 of O.Reg. 359/09. UMA also verified there are no other heritage resources at the project location (in addition to defined protected properties).
Ministry of Transportation (MTO) [3.3]	No. The MTO Corridor Management Planner for this area has confirmed "the subject site is outside of the MTO permit control area, and as such the Ministry has no concerns with this project."
Federal Involvement: [3.4]	
Canadian Environmental Assessment Agency (CEAA)	No federal authority is the proponent of the project or providing financial assistance to the proponent; no federal lands are being sold, leased or otherwise disposed; no requirement for a federal permit, license or other approval is necessary.
Pending or Decided Federal Environmental Assessments (EA)	There are no known Federal EA regimes related to this site.
Fisheries & Oceans Canada (DFO) <i>Fish and Fish Habitat impacts requiring review beyond local CA; Fisheries Act authorization; or under jurisdiction of Canadian Environmental Assessment Act (CEAA), or Species at Risk Act (SARA)</i>	No. As previously indicated, Bowfin Environmental Consulting of Cornwall, ON has confirmed: <ul style="list-style-type: none"> • <i>there are no water bodies in or within 120m of the REGF project location;</i> • <i>there will be no alterations to watercourses; and</i> • <i>no fish or fish habitat will be impacted by this project.</i>
Environment Canada <i>Migratory Birds and/or Habitat</i>	No. Bowfin Environmental Consulting of Cornwall, ON has indicated there are no anticipated negative impacts to migratory birds and/or their habitat due to the proposed project.
Parks Canada <i>Federal Lands owned by Parks Canada</i>	This REGF does not occur on or over federal land owned by Parks Canada. Unterman McPhail Associates of Toronto, ON has verified that the REGF will have no negative impact on any national parks, reserves, historic sites, historic canals or national marine conservation areas.
Natural Resources Canada (NRCan) <i>Funding assistance</i>	No funding is being sought from NRCan for this project.



Section 3 – Specific Project Information

Facility Class [4.3]	Class 3 Solar PV (Ground-mounted, >10 kW)
Nameplate Capacity [4.5]	10,000 kW (AC) total (9,333 kW plus 667 kW incremental)
Energy/Fuel Sources [4.1]	the Sun (No fuel or raw material is required; no by-products, waste or pollution are generated during the process.)
Electricity Generation Components [4.2] <i>Since supplier contracts remain to be finalized, this information is subject to change. We anticipate components will not substantially differ from those listed herein.</i> [1 mW (AC) = approx.5,800 panels]	A single photovoltaic (PV) module is approximately 1m x 1.5m or 1m x 2m and consists of numerous crystalline-silicon cells arranged in a grid and laminated between electrodes and enclosed within a glass and aluminum frame. Modules are grouped into arrays (each with 8-24 modules) which are aligned in long rows; the rows are separated by access aisles, approximately 6m in width. The array field (“project area”) for this site will consist of approximately 41,850-54,000 PV modules and will include 10-15 collection houses (small modular structures that contain inverters and transformers). Power generated by PV modules is low-voltage, direct current (DC) and will be collected and converted into alternating current (AC) by an inverter . The AC power flows through one or more transformers to increase its voltage to match the electricity distribution system (typically 44 kV or 27.6 kV). Metering and safety equipment is required and allows the distribution/ transmission operators to remotely control the power grid interconnection to ensure safe and reliable operation – especially during power outages and disruptions.
Associated Facilities/Equipment [4.2]	The entire project area will be enclosed with a security/safety fence; a perimeter driveway will be located adjacent to (inside) the fence; additional driveways will pass through the array field and provide access to the collection houses. Collection and distribution lines (i.e. “transmission”) will consist of underground and/or overhead lines and will connect to the power grid at a nearby distribution line. No office buildings are proposed; neither natural gas nor sanitary sewer service are required; no water crossings are anticipated.
Project Activities: [4.4]	
Describe any regulated activities (construction, installation, use, operation, changing and retiring)	The solar module arrays will be mounted on a series of metal framing elements that are sloped (facing south) to maximize exposure to the sun (maximum height is approximately 4 meters above the ground). The foundation system consists of similar framing elements that are pile-driven, screwed, or cored-and-grouted into the ground (depending upon existing soil conditions). As mentioned above, a network of driveways surrounds the project area and provides access throughout the array field and to all the collection houses. (Only minor re-grading is anticipated.) Grasses/groundcover will grow beneath and between the rows of solar arrays, which will minimize erosion and enhance infiltration of precipitation into the soil. Because there are gaps between the arrays, rain and snow-melt passes through between the arrays. Therefore little, if any, impact to the existing natural storm-water drainage is anticipated. Besides construction of driveways, installation of panels, framing, foundations and the collection houses, the remaining work is mostly electrical (collection lines, inverters, transformers, etc.). Once construction & installation is complete (including testing and commercial operation initiation), very little maintenance is required. The site will normally be



	<p>uninhabited. Occasional site visits will be conducted for minor site maintenance and inspection of electrical and non-electrical components. Additional visits will occur as necessary (e.g. to replace panels, wiring or other components).</p> <p>One extremely beneficial characteristic of this project is the installed components have almost no long-term or permanent impact on the site. In fact, they can all be removed after the solar panels have fulfilled their life-expectancy (20-30 years) and the site can be returned to its current state – very much as it exists today. This means the site could be utilized for any use deemed appropriate at that time. (Very little evidence, if any, that a solar farm ever existed would remain.)</p>
Describe facility phases and timing / scheduling of each phase (e.g. time of year, frequency and duration)	Entire REGF will be constructed & installed in one phase; anticipated duration is approximately 6 months and will likely commence in Spring or Summer.
Identify the nature of any solid, liquid or gaseous wastes, air and noise emissions likely to be generated; describe plans to manage any wastes	No solid, liquid or gaseous wastes, nor air emissions will be generated by the REGF. Minimal noise will be emitted from electrical conversion equipment (inverters and transformers), and an acoustic assessment will be conducted according to REA requirements in O.Reg. 359/09.
Describe disposal procedures for any toxic or hazardous materials to be used or byproducts to be generated	No toxic or hazardous materials will be used or generated, so disposal procedures are unnecessary.
Describe sewage and stormwater management	No sewage will be generated. Rain and snow-melt will be absorbed into topsoil at or near location it reaches the ground – very similarly to existing, undeveloped conditions; the exception is along interior driveways which will be constructed with pervious materials (e.g. gravel, aggregate, dirt) but will require minimal compaction for occasional vehicular traffic.
Describe any water-taking activity	Use of on-site well water for periodic cleaning of modules.

Section 4 – Potential (Negative) Environmental Effects

Land Ownership [4.6]	REGF site is privately owned (no Crown or Federal lands involved)
Legal description [4.6]	18423 CR-19 = Plan 107, part of Lot 40 (Concession 5IL, part of Lots 2 & 3) 18461 CR-19 = Plan 107, Lots 41 & 41a (Concession 5IL, Lot 1 & part of Lot 2)
Cultural Heritage & Archeological (MTC) [4.7.1]	None. In respect of Protected Properties, Unterman McPhail Associates (UMA) of Toronto, ON has screened the property and verified that the proposed project is not located on nor does it abut any protected properties as described in Column 1 of the Table to section 19 of O.Reg. 359/09. UMA also verified there are no other heritage resources at the project location (in addition to defined protected properties). Additionally, the MTC has reviewed the Stage 1 and 2 Archaeological Assessment Report prepared by Northeastern Archaeological Associates of Port Hope, ON. An Archaeology Review Officer has stated that the MTC believes this assessment complies with the Ontario Heritage Act and that the Ministry is satisfied with the recommendations included therein.
Natural Heritage (MNR) [4.7.2] <i>Woodlots, valleylands, wildlife habitat, provincial parks, conservation areas & reserves, flora/fauna species of concern & habitat, protected natural areas (e.g. ANSI), and locally important or valued ecosystems or vegetation...within 300m of RE project</i>	The REGF is not located within 120m of a Provincial Park or Conservation Reserve nor within 50m of ANSI-earth science. According to the Natural Heritage Assessment and Environmental Impact Study Report prepared by Bowfin Environmental Consulting of Cornwall, ON (and confirmed by MNR's Kemptville District Manager): <i>“The study area includes several natural features that were evaluated and determined to be significant: wetland, woodlands, and</i>



	<p>wildlife habitat. The footprint of the proposed REGF has been re-designed to take into account the sensitive nature of each feature and buffers have been established. As the proposed REGF facility will avoid the majority of the woodland and the wetland entirely and is designed to avoid impacting the wildlife movement corridor, it is anticipated that none of the project’s phases (construction, operation or decommissioning) will have a measurable negative impact on these features, provided that the recommended mitigation measures (such as standard sediment control, clear delineation of project work area, etc.) are properly implemented. No monitoring is required for this project unless construction occurs within the breeding bird timing window (as indicated within the above mitigation measures).</p> <p>It also states:</p> <p>“It should be noted that as the project’s design has evolved the REGF layout has been modified substantially. Each time significant natural features were identified, setbacks/buffers were established and the project footprint was pulled-back from those features in an effort to minimize or avoid any negative effects on approximately 36.4 ha of woodlands, wetlands, municipal drain and wildlife corridor. The clearing of land has been confined to plantations, grazing lands, crop lands and fallow fields. A 30 m setback has been established around the surveyed outer boundary of the wetland feature, which is the southern-most NHF and closest to the REGF project location. It is noted that many of the rock features (rock walls and rock piles) are located outside of the area to be disturbed but those within the project location will likely be removed.</p>
<p>Water Bodies (CA, MNR) [4.7.3]</p>	<p>Bowfin Environmental Consulting of Cornwall, ON conducted a Water Assessment and has confirmed through records review and site investigations that there are no water bodies in or within 120m of the project location, nor any lake trout lakes within 300m of the project location.</p>
<p>Air, Odour, Dust [4.7.4]</p>	<p>No odors or dust emissions are produced by solar power generation equipment.</p>
<p>Noise [4.7.5]</p>	<p>Minimal sound is emitted by the solar power generation process. The panels, racking and wiring – which comprise the majority of the REGF components – produce virtually no sound. The inverter and transformer, however, do produce some noise. This equipment was studied in accordance with O.Reg. 359/09 and by HGC Engineering of Mississauga, ON. Their acoustic assessment report was prepared according to Appendix A of the MOE’s “Basic Comprehensive Certificates of Approval (Air) – User Guide”, dated April 2004 and is submitted herewith. As evidenced in the report, the prescribed noise limits will be adhered to via careful siting of the suspect equipment adequately distanced from any receptors.</p>
<p>Land Uses [4.7.6] (past & present; onsite & nearby)</p>	<p>No negative effects on current land uses or resource availability are anticipated. The proposed REGF site is undeveloped – except for a couple of houses and barns – and currently under-utilized (only a small portion of the subject property is actively being used for livestock grazing and related agricultural purposes). Much of the land that had been cleared and used for agricultural purposes in the past (all of it on the southern side of Woods Drain) is in varying stages of artificial and natural re-vegetation with standard, well-established species that have nominal (if any) natural heritage value.</p> <p>With the exceptions of one residence on Nine Mile Road and numerous residences along CR-19, all adjacent land is also undeveloped – much of it is included in the Woodland area as designated in the Township’s Official Plan (Schedule B6</p>



	"Constraints Plan"); the balance is or has been farmed to varying extents.
Record of Site Condition [4.7.6] <i>(any potential for existing contamination?)</i>	There is no expectation that the site is contaminated, and the need to obtain a Record of Site Condition (RSC) is not anticipated. Based upon a comprehensive Title Search and review of a Custom Environmental Risk Information Report by EcoLog ERIS Ltd. of Toronto, ON, no potential for existing contamination has been identified.
Provincial & Local Infrastructure [4.7.7]	No negative environmental effect is anticipated on provincial and local services and infrastructure. The REGF requires no sewer or gas services. County Road 19 is a well-travelled arterial roadway. While there will be a temporary increase of truck traffic on CR-19 during the few months of construction, there will be almost no traffic generated by this REGF once construction is complete.
Public Health & Safety [4.7.8]	No negative environmental effect on public health and safety is anticipated. In fact, there are numerous <u>benefits</u> provided by generating solar power, which is why the provincial government is encouraging it. The facility will be surrounded by a fence for safety and security.
Provincial Plan Areas [4.7.9] <i>(Greenbelt, Oak Ridge Moraine, Niagara Escarpment, Lake Simcoe Watershed)</i>	Not Applicable, since the project is not within a PPA.

Section 5 – Project Location Map *(following page)*



