Injasuti Developments

BEAVER CREEK SOLAR FARM

Municipality of Central Elgin, County of Elgin

DECOMMISSIONING PLAN

JULY 2011

IBI GROUP

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1. DECOMMISSIONING PLAN

1.1 Purpose

Decommissioning the solar farm means withdrawing a solar farm from active service and remediating the lands to pre-existing or compatible conditions. The plan describes the process and requirements for the removal of solar farm components at the end of their useful function for the production of renewable electrical energy or, alternatively, during construction due to unforeseen economic circumstances should the project cease operations. The objective is to remove any improvements to the land and restore it to the same or compatible function as existed prior to the construction of the solar farm. The cost of decommissioning will be borne by the solar farm owner and may be recovered through the sale, recycling or reuse of the project components.

Decommissioning involves the following actions:

1. Removal of the photo voltaic panels and all electrical appurtenances;
2. Removal of foundations and any access roads not wanted for future farming purposes.
3. Replacement of surface materials to a depth of surrounding disturbed lands and plant with suitable native species dependent upon time of year and in consultation with solar farm operator;
4. Ensure that no environmental impacts occur due to decommissioning activities.

It is expected that decommissioning procedures will proceed in a timely fashion once they are started.

2. DECOMMISSIONING PROCESS DESCRIPTION

The following indicates the procedure for the disassembling of the Beaver Creek Solar Farm's infrastructure; and is applicable to decommissioning both during construction and after operations have ceased. The proposed decommissioning process may vary at such time that it is undertaken pending changes in technologies, applicable regulations and other relevant considerations:

Physical Works/Activities	Description of Actions
Solar Panel and Mast Disassembly	The solar panels and masts would be disassembled using a crane and removed from the site via truck. Panel frames and masts will be sold for their recyclable resource value. Photovoltaic pieces will be disposed of at a landfill.
Removal of electrical appurtenances	Electrical equipment will be removed from the site via trucks for salvage based on their value as a recyclable resource.
Removal of Access Roads	A permanent access road may be maintained for farming purposes if so required by the landowner. The main gravel access road pre-existed the solar farm. Access roads allow farmers continued access to their crop fields. This decision will be left to the landowner at the time of decommissioning. An unwanted access road would be restored as per method used for decommissioning concrete foundations described below. Any aggregate removed from on-site will be disposed of at a recycling facility or, if unavailable or impractical, at a licensed landfill in the Province of Ontario.
Removal of Concrete Foundations	The concrete foundations will be broken up by heavy machinery and removed by dump truck to a depth of approximately 1.0m and filled with subsoil to rebuild the grade. Surface materials may be imported on-site by dump truck and replaced over the area with an appropriate soil type (loam, sandy loam) and to an approximate depth of adjacent horizontal topsoil depths. The areas will be left for cultivation or seeded for erosion control, depending on the preference of the landowner and timing during the calendar year. Concrete will be disposed of at a licensed landfill or recycling facility in the Province of Ontario.
Removal of Distribution Lines	The distribution lines and any underground conduit will be terminated and removed from the ground. Trenches and areas where conduit has been removed will be backfilled with subsoil and other suitable substrates to rebuild the grade and stabilize the subsurface conditions for continued use for drainage purposes. Clean topsoil would be replaced over the area of a soil type (loam, sandy loam) and to an approximate depth of adjacent horizontal topsoil depths. Conduit will be disposed of at a licensed landfill in the Province of Ontario, and distributions lines will be sold as scrap metal to a local recycler.

3. SITE RESTORATION

3.1 Existing Conditions

All lands that will be occupied by project infrastructure are currently reclaimed mineral aggregate extraction lands with a small component of agricultural lands used for growing field crops. The activities described in Section 2 of this report will ensure that the project area is returned to its pre-construction state of reclaimed extraction lands, agricultural fields and field drainage. Overall drainage conditions are to be maintained, and restoration may include additional naturalization.

3.2 Water Resources

There are no expected decommissioning activities that require, or relate to, water resources. No water resources, other than the man-made pond resulting from the mineral extraction process, are found in the lands which require decommissioning activities. No stormwater surface runoff prevention measures are required due to the distance from any significant water bodies. No open ditches or swales that would affect surface water movement will be encountered during decommissioning activities.

3.3 Soils

Canada Land Inventory (CLI) mapping identified a portion of the solar farm as 'unclassified' due to the former aggregate extraction use. The remainder of the project lands are a mix of Class 1 and Class 2 soils, but are identified with 60% moderate limitations due to undesirable soil structure and topography, and with 40% moderately severe topographic limitations. The soil series is mainly Beverly (loamy phase) loam (60% portion) that is imperfectly drained and Brantford (loamy phase) loam (40% portion) that is moderately well drained. All areas impacted by surface infrastructure will be replaced with similar loam soil types to an approximate depth of 1.0 metres. The areas will be left for cultivation, where applicable, by the landowner if decommissioning occurs during the spring months, or seeded for soil erosion control with cover crops during any other times during the calendar year. The subject lands are classed as very gentle slope (2.0 – 5.0%) to gentle slopes (5 to 9%) and quickly reseeding the lands with cover crops will control any soil erosion.

4. EXCESS MATERIALS AND WASTE MANAGEMENT

All excess materials and waste will be transported off-site by flatbed trailer or dump truck. These materials and waste include:

- Panel, masts, electrical appurtenances and wiring – sold for scrap value to a licensed scrap metal facility within the Province of Ontario;
- Photovoltaic cells – disposed of at an appropriately licensed landfill facility within Ontario in accordance with Ontario Regulation 347 or its succeeding regulation. If financially and technically feasible at a future date, the photovoltaic cells may be recycled;
- Concrete and Aggregate – sent to recycling facility approved to receive construction building components within the Province of Ontario.

Any hazardous wastes that are used and/or stored on site, such as lubricating oils, will be removed in accordance with Ontario Regulation 347 and disposed of at a registered facility in Ontario. All wastes will be transported by a registered hauler.

5. MANAGING IMPACTS OF DECOMMISSIONING

A key aspect of decommissioning will be on the minimization of environmental effects. The following table shows the environmental effects and mitigation plans of the decommissioning activities:

Type of Environmental Effect	Description
Residual Impacts	Disassembly will result in no residual impacts.
Aquatic Environment	There are no environmental effects expected from the decommissioning of the Beavercreek solar farm as no materials from the solar farm site are expected to enter the water since good construction practices will be adhered to (e.g. proper disposal of waste off-site).
Agricultural Impacts	Agricultural land use will be restored to existing conditions as a result of rehabilitation of equipment disturbance areas.
Terrestrial Vegetation	There will be minimal disturbance to plant communities in the area from decommissioning activities as trucks and construction equipment will be able to use existing roads used during the operations' phase of the solar farm.
Terrestrial Wildlife (Including Birds)	Sensory disturbance of wildlife and birds for short term due to use of trucks and equipment for removal of the project components. There are minimal environmental effects expected from the decommissioning of the solar farm.
Noise Levels	Noise levels associated with decommissioning would be similar to, or less than, those associated with construction. Therefore no significant adverse effects are expected beyond the approximate 2 month period of decommissioning.
Cultural Resources	There are no archeological or heritage effects that would result from the decommissioning of the solar panels.
Social	The decommissioning of the solar farm may create a temporary nuisance from a visual perspective. Since the nuisance effects would be very short term, minimal environmental effects would be expected.

During decommissioning, the Environmental Impact Study recommended that:

1) A Biologist should walk the project location to search for any significant natural heritage features (if any are noted, appropriate setbacks and mitigation will be developed according to the natural heritage feature or function noted);
2) A sediment and erosion control plan should be developed to protect the natural heritage features to the west of the project location (plan to be similar or equivalent to the sediment and erosion control identified during project's construction phase); and that
3) A construction barrier be installed on the north, south and east sides of the project location, once the security fence is removed to maintain setback distances to identified significant natural heritage features.

6. EMERGENCY RESPONSE AND COMMUNICATIONS PLAN

The proposed *Emergency Response and Communications Plan* for the decommissioning phase of the project will follow the same procedures outlined in the Design and Operations Report. In addition, the proposed notification procedure for any decommissioning activities outlined in this report will follow the same procedures outlined in the *Emergency Response and Communications Plan.*

7. OTHER APPROVALS

Based on consultation efforts to date, and uncertainty regarding the regulatory timeframe under which the project will be decommissioned, the only known required approvals for project decommissioning would include demolition permits from the Municipality. The Province may require: a *Record of Site Condition* under the Environmental Protection Act; financial assurance of the decommissioning activities as proposed in this report; and conditions of approval to ensure that such proposed activities are implemented.