

# **SOUTHGATE SOLAR PROJECT**

Southgate Solar LP

## **FIRST PUBLIC MEETING**

July 17<sup>th</sup>, 2014

6:00 PM – 8:00 PM

# **WELCOME!**





# Making Ontario Greener

In 2007, in their Climate Change Action Plan, the Ontario government established firm targets to reduce greenhouse gas (GHG) emissions to 15% below 1990 levels by 2020 and 80% by 2050. Ontario is the only province to regulate a phase-out of coal-fired electricity. This bold action represents one of the largest single GHG reduction measures in North America and will reduce our carbon footprint from electricity generation by 75%.

The Green Energy and Green Economy Act (2009) was created to support these targets and has made it possible to quickly replace coal-based electricity with renewable energy sources. The proposed 50 megawatt (MW) Southgate Solar Project will use solar photovoltaic (PV) technology and will produce enough clean electricity in one year to provide power to approximately 6,000 homes.

Renewable energy projects are subject to the Renewable Energy Approval (REA) process outlined in Ontario Regulation 359/09 under Part V.0.1 of the Environmental Protection Act. This process coordinates approvals across government ministries to encourage renewable energy while ensuring that the environment, health and natural resources are protected.

Renewable energy projects bring economic benefits to both local communities and municipalities throughout Ontario. They:

- generate new manufacturing jobs in Ontario;
- provide local jobs during construction and maintenance; and
- increase the municipal tax base.

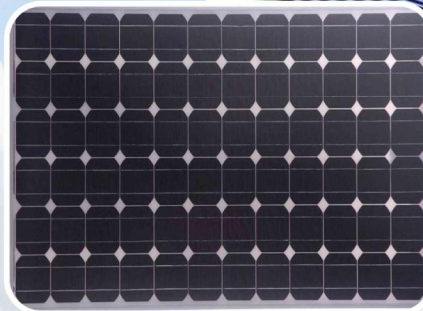
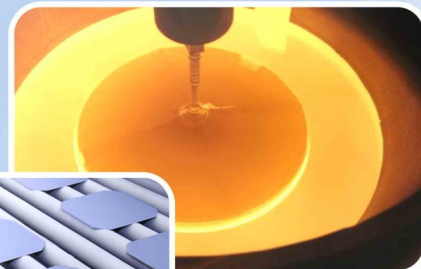




# Solar PV Technology – *How it Works*

**A solar panel works by grouping a set of cells together into a panel that converts energy from the sun.**

1. Molten silicon is moulded into blocks from which photovoltaic (PV) wafers are cut.
2. Wafers are then shaped, coated with phosphorous and heated.
3. The wafers are then put together to create a solar cell.
4. The solar cells are then soldered together and laminated between glass and a backing sheet to create panels. Frames allow for mounting.



Solar cells collect solar radiation from the sun and actively convert it into electricity. When solar cells are exposed to sunlight, energy is generated from photons that strike the surface of the solar panel and allow electrons to be released. Electric fields in the solar cells pull these free electrons in a directional current. When light shines on a cell, it frees electrons from the semiconductor wafers creating electricity.





# Solar Energy – *Environmental Benefits*

The following are some of the environmental benefits of solar energy:

## **NO POLLUTION AND EMISSIONS**

An operational solar facility produces no air pollution or emissions. Unlike fossil-fuel energy plants, solar energy does not contribute to smog (which causes many health-related problems) or acid rain (which impacts water bodies). Most importantly, the production of solar energy does not contribute to climate change because no greenhouse gas emissions are produced from using the sun's energy for power.

## **NO HAZARDOUS OR TOXIC WASTES**

An operational solar facility produces no waste. Unlike a nuclear facility, which must dispose of radioactive spent fuel, or a coal facility which must dispose of toxic ash and sludge, a solar facility only produces clean electricity.

## **NO USE OF VALUABLE RESOURCES**

The fuel source for solar arrays is the sun. The operation of a solar facility does not need the ongoing input of resources. In contrast, fossil fuel-powered facilities require continual inputs of coal or natural gas which must be mined and nuclear facilities require large amounts of a more precious resource: water. Solar facilities need only the sun, a renewable and non-depletable resource.





# About Southgate Solar LP and the Southgate Solar Project

The Southgate Solar Project is a 50 MWac solar facility to be located within the Township of Southgate, in the County of Grey, approximately 11 kilometres north of the community of Mount Forest. The proposed project location, consisting of multiple privately-owned parcels, is to be leased by Southgate Solar LP for 20 years with an option to extend the lease.

The proposed project location is contained within an area bounded in the north by Southgate Road 24, Southgate Road 14 to the south, Southgate Sideroad 47 to the east, and Highway 6 to the west.

## **The project will consist of the following components:**

- Approximately 200,000 solar panels (290-305 watts each) mounted on fixed racking systems which are secured to the ground;
- Medium Voltage (MV) Stations housing inverters and MV transformers;
- Underground/overhead collection cables connecting the MV Stations to a high-voltage sub-station transformer;
- One interconnection high-voltage substation transformer to step up the collector system voltage to the provincial transmission grid voltage;
- Access roads within the project location;
- Perimeter fence;
- Temporary construction/storage areas for equipment and components during construction; and
- An operations and maintenance building (temporary or permanent).







**SOUTHGATE SOLAR PROJECT**

**FIGURE 1  
GENERAL PROJECT LOCATION**



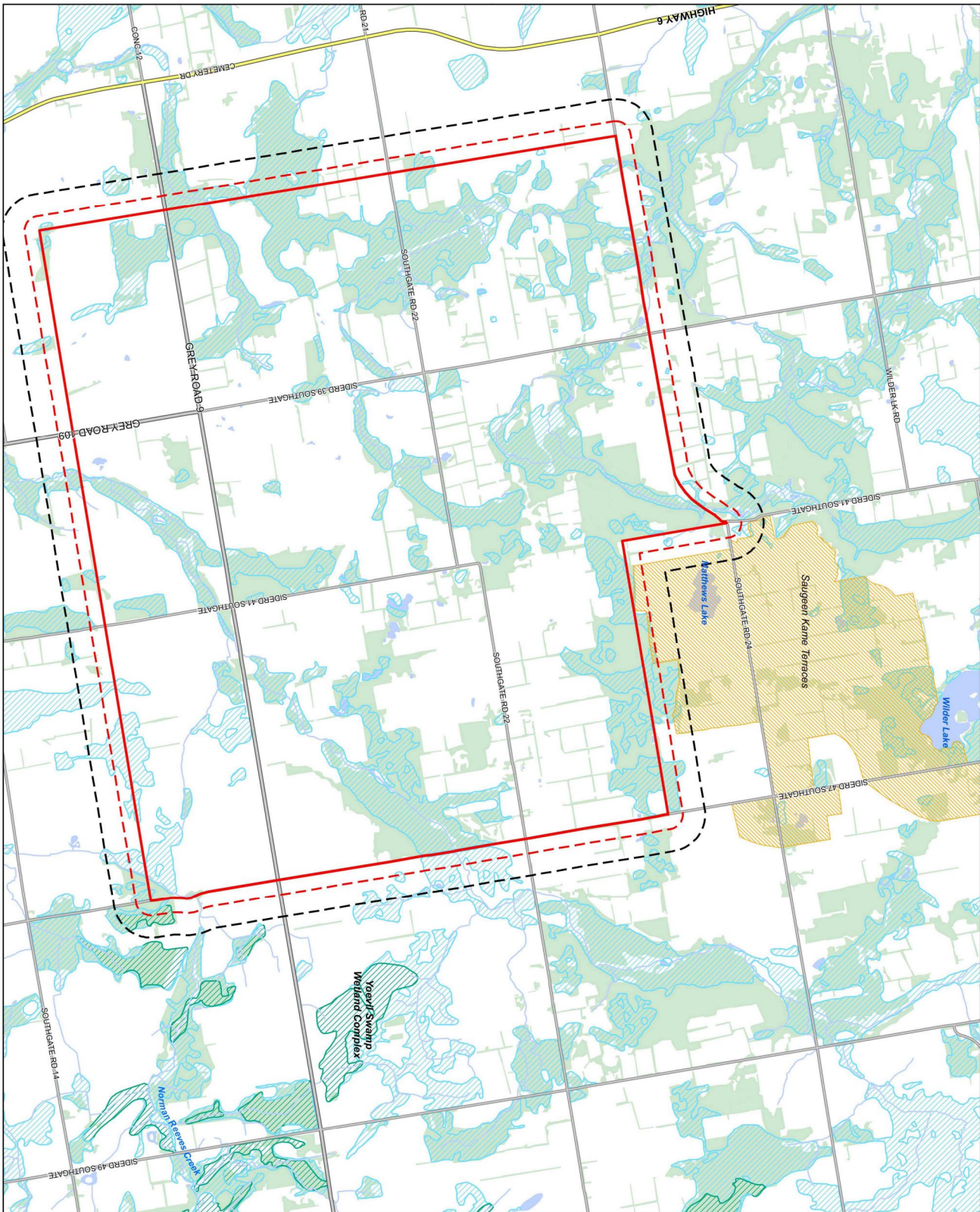
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DATA PROVIDED BY AMR  
MAP CREATED BY: CH  
MAP CHECKED BY: MB  
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: I:\GIS\149154 - Semung Southgate\mxd\PRJ



PROJECT: 149154  
STATUS: DRAFT  
DATE: 4/15/2014





## SOUTHGATE SOLAR PROJECT

**FIGURE 2  
PROJECT LOCATION AND  
NATURAL FEATURES**

- Project Location
- 120 m Project Location Setback
- 300 m Project Location Setback
- Watercourse
- Water Body
- ANSI, Earth Science
- Provincially Significant Wetland
- Unevaluated Wetland
- Woodland

1:30,000  
0 0.5 1 km



MAP DRAINING JURISDICTION:  
DATA PROVIDED BY ANR  
MAP CREATED BY: GMR  
MAP CHECKED BY: GMR  
MAP PROJECTION: NAD 1983 UTM Zone 17N

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PROJECT: 149154  
STATUS: DRAFT  
DATE: 5/30/2014



# Land Use and the Solar Facility

## **Land Use Designation:**

The Southgate Solar Project will be located on lands currently zoned by the Township of Southgate for agriculture, aggregate extraction, wetland protection and environmental protection. The County of Grey designates the lands as agricultural, hazard lands and rural. As the project continues through the REA process, the project location boundary will be refined to avoid significant natural features where possible.

## **Current Land Use:**

The Southgate Solar Project lands are currently used for agricultural purposes. Agricultural usage includes cash crops and/or pasture.



## **Solar Facility Operation:**

While the solar facility is in operation it will temporarily remove lands from agricultural production or aggregate extraction use. However, the facility will not damage the soils for future agricultural use or aggregate extraction.



Short native vegetation may be grown beneath and between the panel rows but several options for ground cover are being considered.

The proposed facility would have a low height profile and would be non-obtrusive to the surrounding community. Visual impact studies will be conducted, as necessary, and appropriate vegetative screening may be installed.

## **Future Land Use:**

The land will be temporarily borrowed for generating clean energy before, being restored for agricultural or aggregate extraction uses.





# Authorizations

In addition to the REA issued by the Ministry of the Environment, other authorizations may be required for the project from the following:

- Department of Fisheries and Oceans Canada (DFO)
- Transport Canada
- Industry Canada
- Electrical Safety Authority
- Hydro One Networks Incorporated (HONI)
- Independent Electricity System Operator (IESO)
- Ontario Power Authority
- Ontario Energy Board
- Ontario Ministry of Natural Resources
- Ontario Ministry of Tourism, Culture and Sport
- Ontario Ministry of Transportation
- Saugeen Valley Conservation Authority
- Township of Southgate
- County of Grey

This list will be refined as studies take place and as information is received from agencies.





# Site-Specific REA Studies

A number of studies are required and are currently ongoing. These include:

## **NATURAL HERITAGE ASSESSMENT**

This report identifies natural features at or near the proposed project location, including areas of natural and scientific interest (ANSIs), wetlands, woodlands, wildlife habitat, provincial parks, and conservation areas. The assessment is completed through a records review, site investigation, and evaluation of significance of features identified. Results of the assessment will be used to refine the project location to minimize impacts to natural features and to prepare an Environmental Impact Study Report (if needed) to identify mitigation measures to reduce potential impacts (if identified).

## **WATER BODY STUDIES**

A Water Assessment identifies water bodies at or near the proposed project location through a background desktop review of relevant information, followed by a site visit to confirm the findings of the review. If water bodies are identified a Water Body Report is prepared that characterizes the existing conditions of the water bodies and identifies potential negative impacts and any mitigation measures required to minimize negative impacts on the water bodies from construction and operation of the facility. These may include modification of construction practices or refining project boundaries and layout.

## **ARCHAEOLOGICAL ASSESSMENTS**

These assessments identify any areas of archaeological significance at or near the proposed project location. Undertaken by a licenced archaeologist, they can involve up to four stages: a desktop review, site investigation (visual inspection or test pits), localized excavation, and implementation of conservation strategies. Progression to each stage is dependent on the results of the preceding stage. Currently a Stage 1 (desktop study) and Stage 2 (field study) are being undertaken for the Southgate Solar Project to ensure areas of significance will not be adversely affected through implementation of the project.

## **CULTURAL HERITAGE ASSESSMENT**

This study identifies resources of cultural heritage value or significance at or near the proposed project location. Resources can include buildings, structures, landscape features, or other property features. Assessments include a desktop review of historical documentation, and a visual inspection of the properties, as well as consultation with municipalities. Should the assessment identify resources of value, mitigation measures will be developed and implemented to preserve and/or document the cultural heritage features.

## **NOISE STUDY**

This study identifies stationary noise sources and models levels of noise for those sources to ensure that regulatory limits are met. Noise generated through operation of solar facilities is typically from the MV Stations and high voltage transformer (main substation). The study models the worst-case noise scenarios, and considers existing noise receptors (e.g., homes), vacant lots zoned for future development, adjacent noise-generating facilities, and project-specific equipment. If required, recommendations are made for mitigation measures, such as noise barriers.





# Potential Environmental Effects

FEATURE	POTENTIAL IMPACT	MITIGATION EFFORTS
Archaeological & Cultural Heritage Resources	Stage 1 & 2 Archaeological Assessments and a Cultural Heritage Assessment are underway to identify any potential heritage resources and impacts.	It is not expected that the project will negatively impact either archaeological or cultural heritage resources. Mitigation measures such as salvage or avoidance will be implemented as necessary if resources are identified.
Natural Heritage Resources	Natural features and wildlife habitat in the project area include a mixture of meadows, agricultural fields, woodlands, and wetlands. The Yoevil Swamp Wetland Complex is a provincially significant wetland (PSW) located to the south of the project location. Various woodlands are also mapped within and surrounding the project location. The Saugeen Kame Terraces Earth Science Area of Natural and Scientific Interest is located immediately north of the project location.	Site-specific impacts to natural features will be determined through field work. Appropriate mitigation and/or monitoring measures will be developed to minimize identified impacts. Where possible, the project will be design in a manner that avoids natural features.
Water Bodies	No lakes are within the project location or within 300 m of the project location. There are various potential water bodies located within the project location; however are unnamed. The potential water bodies will be assessed for potential impacts during site investigation field work.	Appropriate mitigation and/or monitoring measures will be developed to minimize identified impacts to water bodies.
Air, Odour & Dust	Some dust, odour and vibration will be experienced during construction and maintenance in the immediate area, but effects will be localized and temporary.	Appropriate air quality mitigation measures will be used during construction (e.g., no idling of machinery).
Noise	Noise from operational MV Stations and the high voltage transformer (main substation) will be modeled to ensure that levels meet the regulated requirements.	If required, noise barriers or other noise mitigation measures will be used to meet regulated noise levels.
Provincial & Local Infrastructure	Possible traffic disruptions may occur along Southgate Road 24, Southgate Road 22, Grey Road 9, Grey Road 109/Southgate Sideroad 39, Southgate Sideroad 14, and Southgate Sideroad 47, and possibly other local roads during construction. Local roads may experience additional wear from construction traffic.	The Township of Southgate will be consulted on matters of infrastructure and servicing. Appropriate measure will be taken in consultation with the Township to ensure that road conditions are maintained.
Public Health & Safety	Potential impacts to public health and safety include those associated with construction projects. Once operational, potential impacts are minimal and avoidable.	Mitigation measures such as appropriate signage, flagging, fencing and other safety measures will be implemented. An Emergency Response and Communications Plan will be prepared.



# REA Requirements & Next Steps

Over the next few months, studies, consultation and reporting will be ongoing. Draft reports of the following will be produced and provided for public review at least 60 days prior to the second public meeting:

- Project Description Report
- Construction Plan Report
- Design and Operations Report
- Decommissioning Plan Report
- Noise Study Report
- Cultural Heritage Screening/Assessment
- Archeological Assessments
- Natural Heritage Assessment
- Water Reports
- Preliminary Stormwater Management Plan

The documents will be available on the project website and in hard copy for review at the Township of Southgate Main Office (185667 Grey County Road 9, Dundalk), Grey County Main Office (595 9<sup>th</sup> Avenue E., Owen Sound), Southgate Library (80 Proton Street West, Dundalk), and Holstein General Store (392046 Grey Road 109, Holstein).

After the second public meeting (anticipated to be in January 2015), the reports will be finalized and a Consultation Report will be prepared. The reports will be submitted with a REA application to the Ministry of the Environment. The Ministry will review the submission for completeness and begin a 6-month technical review.

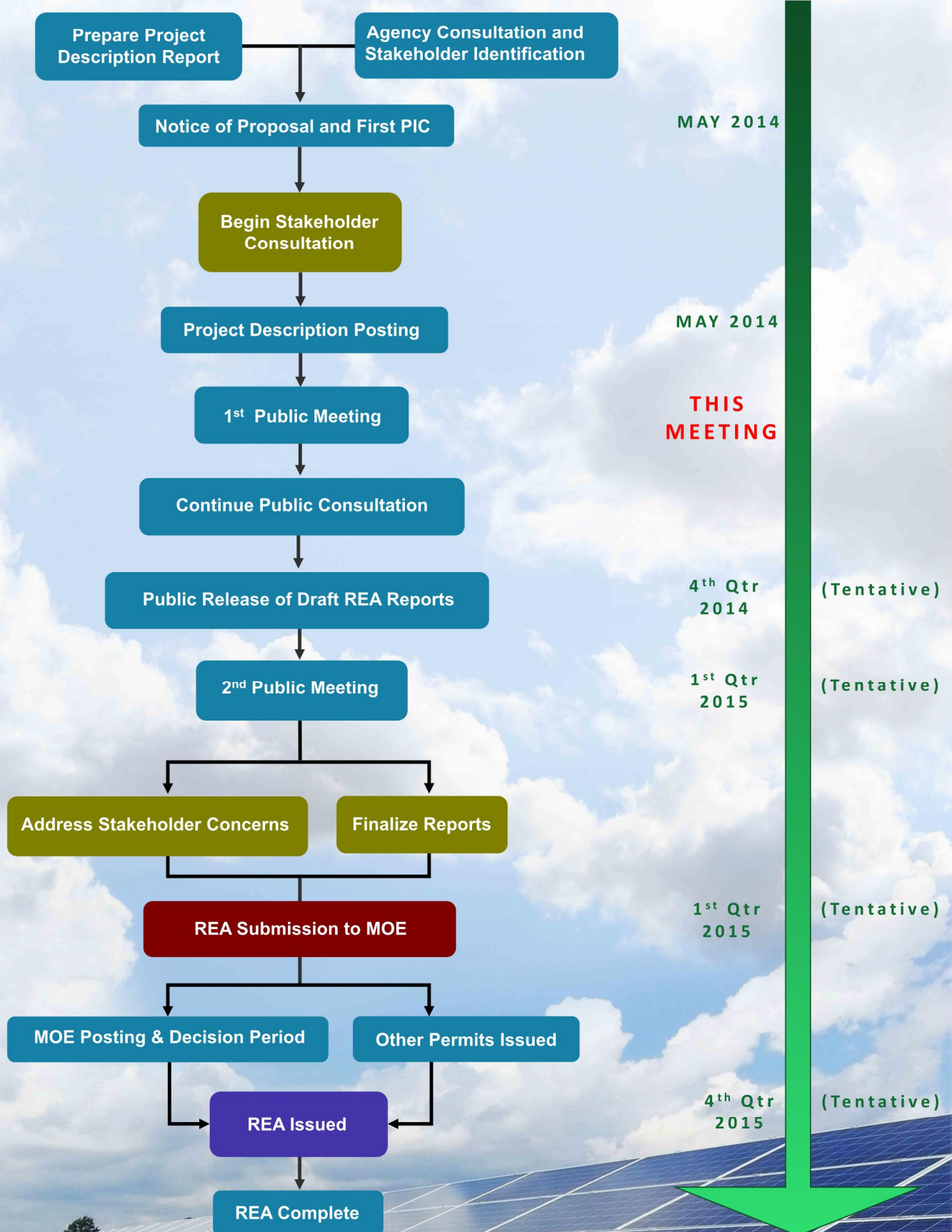
When the REA is issued for the project it will be posted on the Environmental Bill of Rights Registry ([www.ebr.gov.on.ca](http://www.ebr.gov.on.ca)) for public review and comment (anticipated to be late fall 2015).





# The REA Process

Renewable Energy Approval Process - Ontario Regulation 359/09



Project construction is expected to begin in 2016 upon successfully achieving the above milestones.



# Thank you for Attending Tonight

## BEFORE YOU LEAVE

- Please take handouts from the information table
- Sign the attendance sheet
- Ask questions you may have about this project (just look for someone with a nametag)

## WE WELCOME YOUR FEEDBACK

- Comment sheets are available at the sign-in table. Please fill in your thoughts, ideas, concerns and questions about this project.
- If you would like to be included in our mailing list (to be kept informed of project developments) please leave us with the necessary information on the comment sheet and/or sign-in sheet.

## CONTACT INFORMATION

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Documents are available on the project website at:  
<http://www.samsungrenewableenergy.ca/southgate>