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solar energy centre

WELCOME!

Thank you for coming to the First Public Meeting Under the Renewable Energy Approval (REA) Process for the **Pendleton Solar Energy Centre!**

We are here to share new information about this clean, **renewable energy** project with you. Keep in mind that we are still completing various studies and reports, as well as project design. Today's intent is to collect additional input from the community to incorporate into our design.

Please review the display boards and feel free to ask us any questions you may have.

We want to hear from you!

Please complete a comment form to share your feedback!
If you would like to be added to the Project mailing list, please sign up at the front desk.

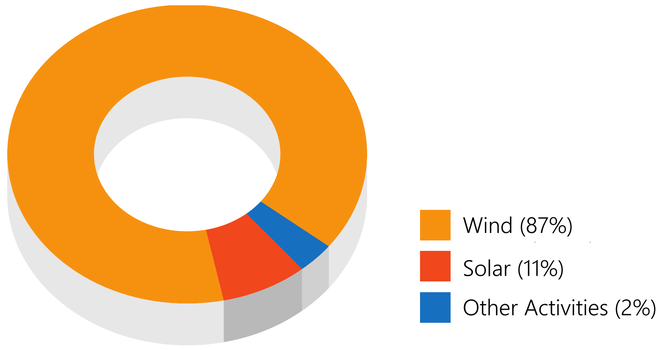
EDF EN

A LEADER IN RENEWABLE ENERGY

Among the Top 10 Global Players

GENERATION ACTIVITY

- **8 989 MW**
  gross installed
- **1 620 MW**
  gross under construction*
- **10.4 billion kWh**
  of green electricity generated in 2015



COMPLEMENTARY ACTIVITIES

- **3 201 MW**
  developed, built and commissioned
- **14 323 MW**
  in operations and maintenance*

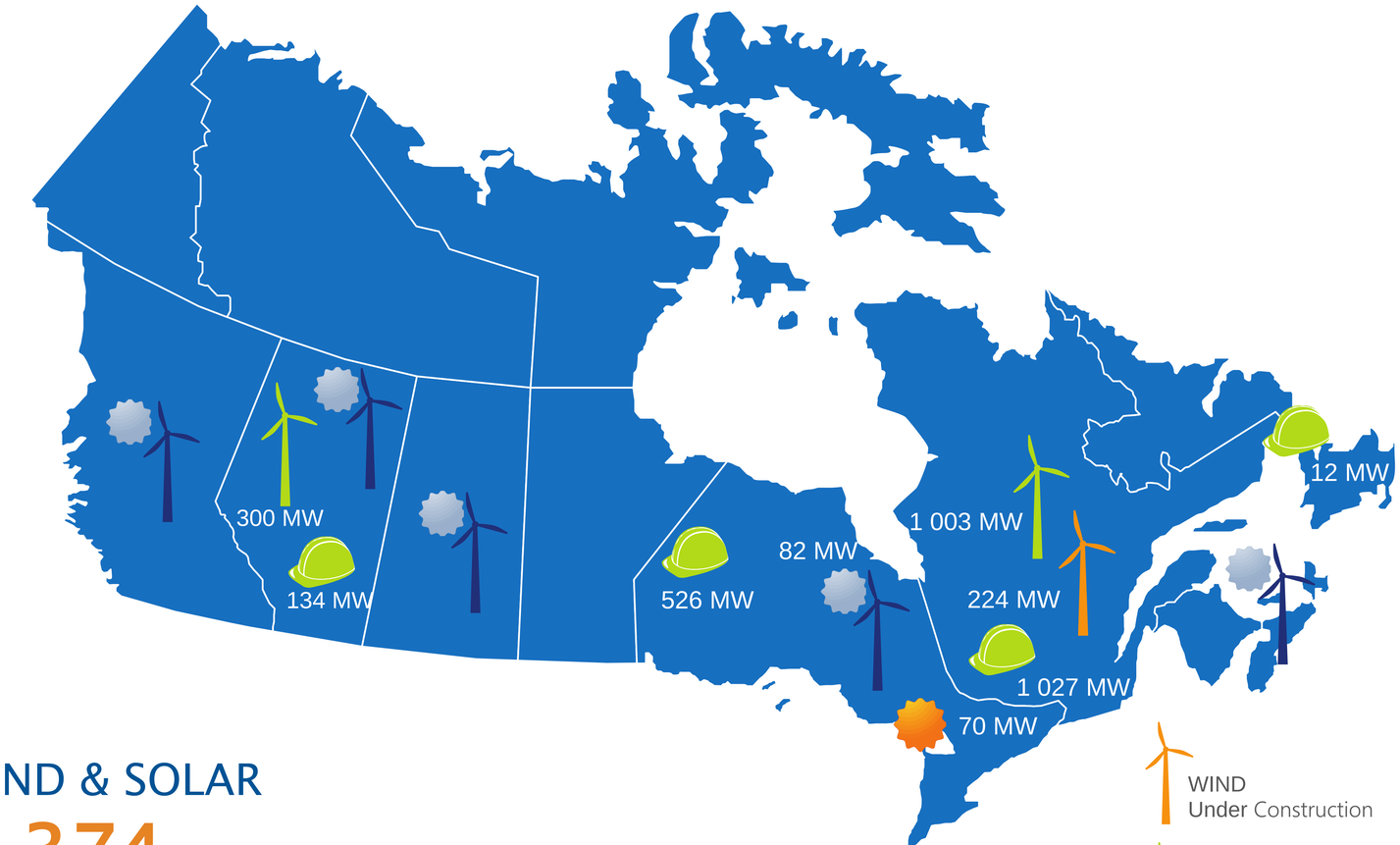
** For own account and for third-parties*

21 countries throughout North America, South America, Europe, Africa, the Middle East, and India

> 3 000 employees

EDF EN CANADA

1 600+ MW OF WIND AND SOLAR ACROSS CANADA



WIND & SOLAR

1 374 MW (350 000 homes) Commissioned Capacity

224 MW (54 900 homes) Under Construction

82 MW (20 100 homes) In Development

OPERATIONS & MAINTENANCE

1 173 MW Wind

526 MW Solar

>$3.5 billion invested in Canada since 2008

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PROJECT OVERVIEW

PROJECT NAME: Pendleton Solar Energy Centre

PROJECT OWNERS: EDF EN Canada and the Algonquins of Pikwàkanagàn First Nation

HOST MUNICIPALITY: Township of Alfred and Plantagenet

RENEWABLE FUEL: Non-Rooftop Solar

CONTRACT CAPACITY: 12 MWac

PROPOSED CONNECTION POINT

Located within the Township of Alfred and Plantagenet, on the existing distribution grid west of the site adjacent to County Road 19.

CONNECTION LINE

A very short (~20 m) Connection Line will run across County Road 19 from the Site to the distribution line.

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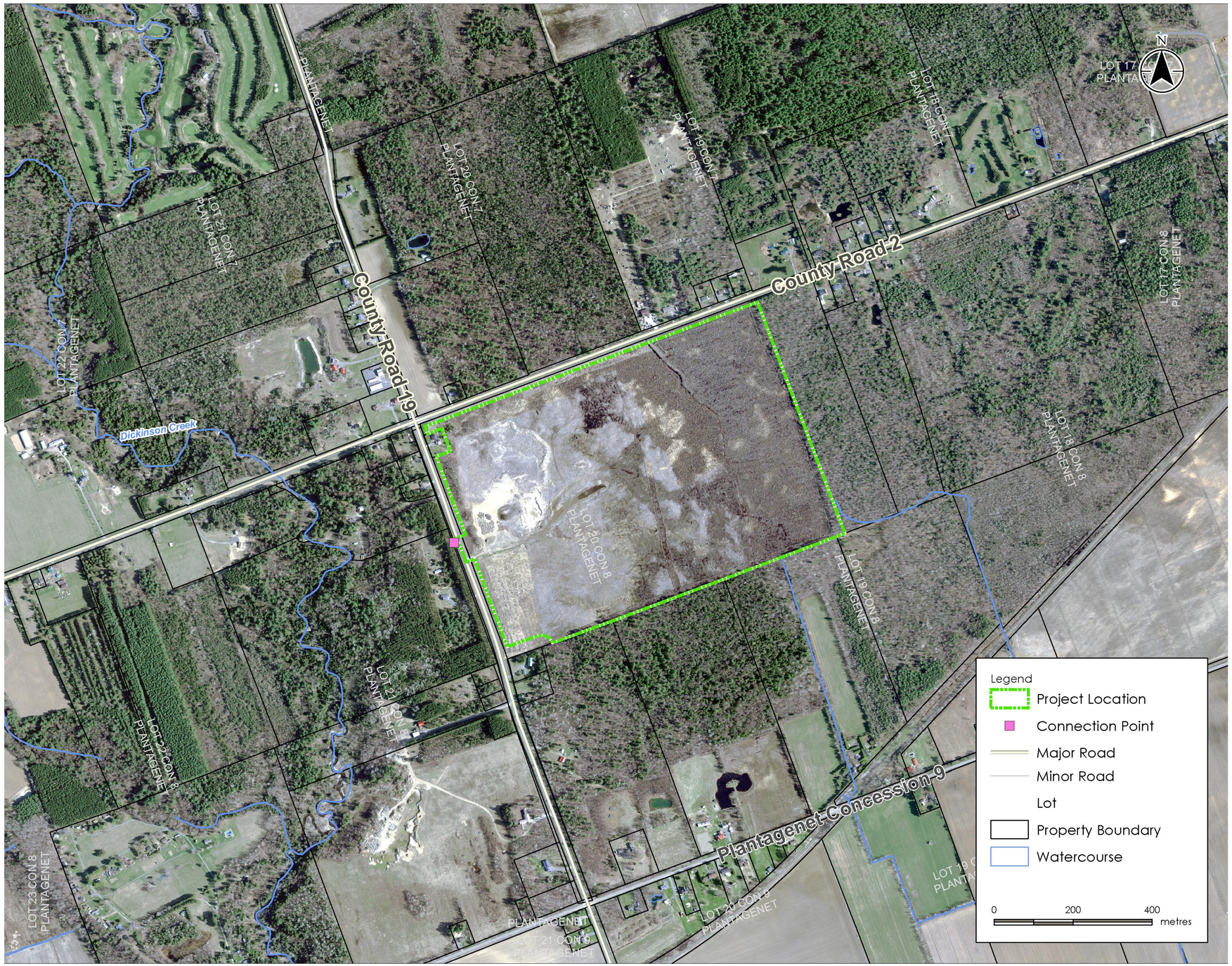
PROJECT LOCATION

Located on 140 acres of privately owned land, in the Township of Alfred and Plantagenet.



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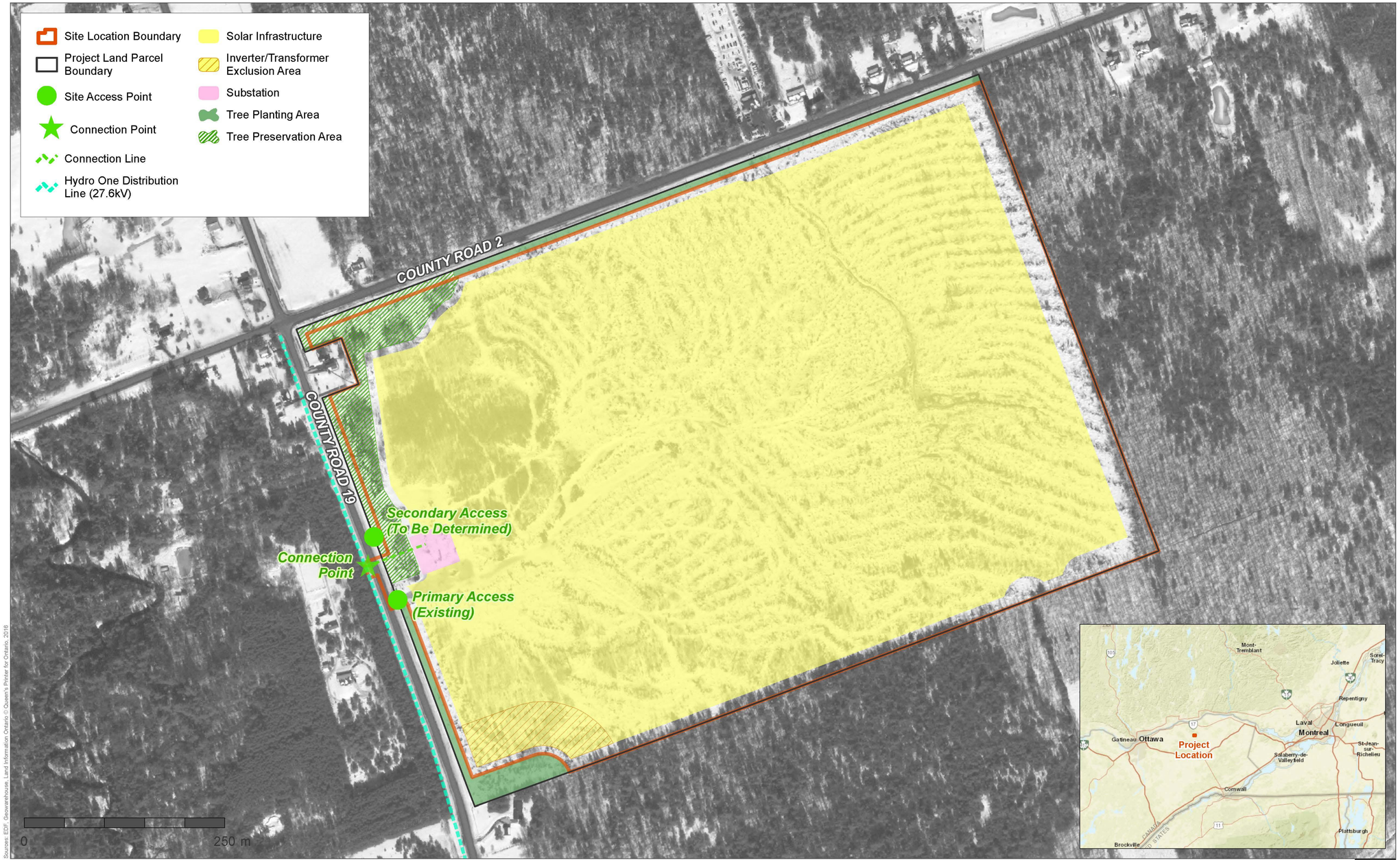
PRELIMINARY SITE PLAN



- Final locations for Project infrastructure will be considered through public consultation and engineering / environmental studies.

Sources: EDF, Geowarehouse, Land Information Ontario © Queen's Printer for Ontario, 2016

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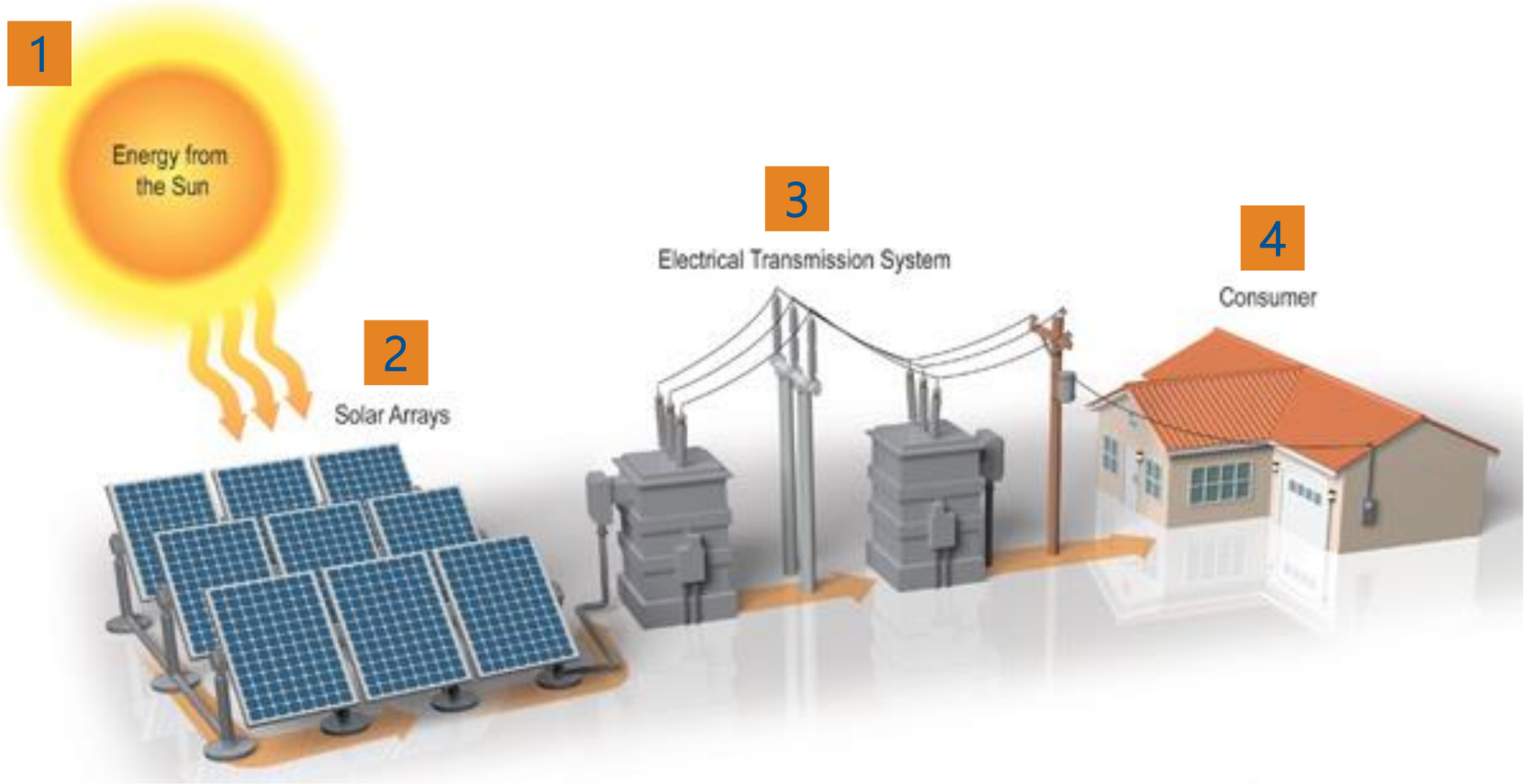
PRELIMINARY SITE PLAN
Pendleton Solar Energy Centre | Ontario

SOLAR ENERGY: HOW DOES IT WORK?



1 Energy from the sun falls onto the earth's surface each day in the form of sunlight.

2 The sunlight is absorbed by the solar panels, converting sunlight into electricity.

- Solar cells are small, square-shaped silicon semiconductors. Each solar cell is connected into a network of many other solar cells to create a PV (photovoltaic) module or panel. A solar facility is comprised of thousands of panels.

3 The absorbed sunlight is transformed into usable energy by way of an inverter that turns direct current (DC) energy into alternating current (AC) electricity. AC is the form of power used in homes and businesses.

4 Electricity generated travels though distribution lines to homes and businesses.

SOLAR PARK EQUIPMENT

Install Piles and Racking

Mount Panels

A few inverters/transformers condition power to be compatible on local electricity grid

Substation includes necessary equipment to connect to the local electricity grid

Finished Product (view from sky)

Finished Product (view from ground)

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SOLAR PARK EQUIPMENT

Solar Panels Mounted on Tracker System
Panels Track the Sun from East to West
Source: http://www.exosun.net/references/photo-gallery

Fixed Tilt System
Solar Panels do not Move

- Final technology not yet determined. Either solar panels mounted on a single axis tracker system (left), or solar panels mounted on a fixed tilt system (right).
- Four to six inverters / transformers will be scattered within the site to convert electricity from direct current to alternating current and raise the voltage from ~1 000 volts to 27 600 volts.
- Cabling connecting 1) solar panels to inverters/transformers and 2) inverters/transformers to substation usually buried underground.

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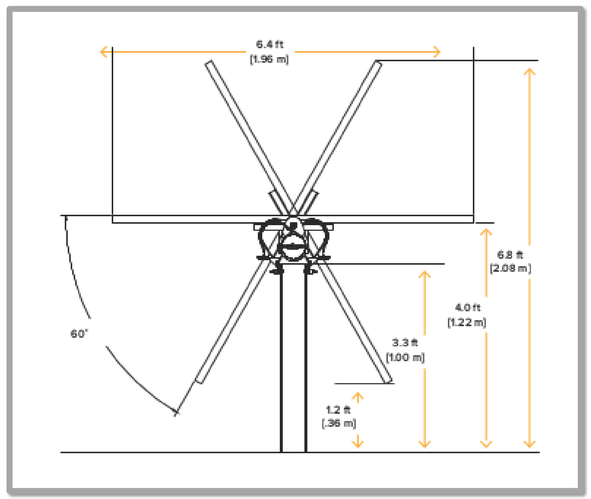
TRACKING SOLAR PANELS:

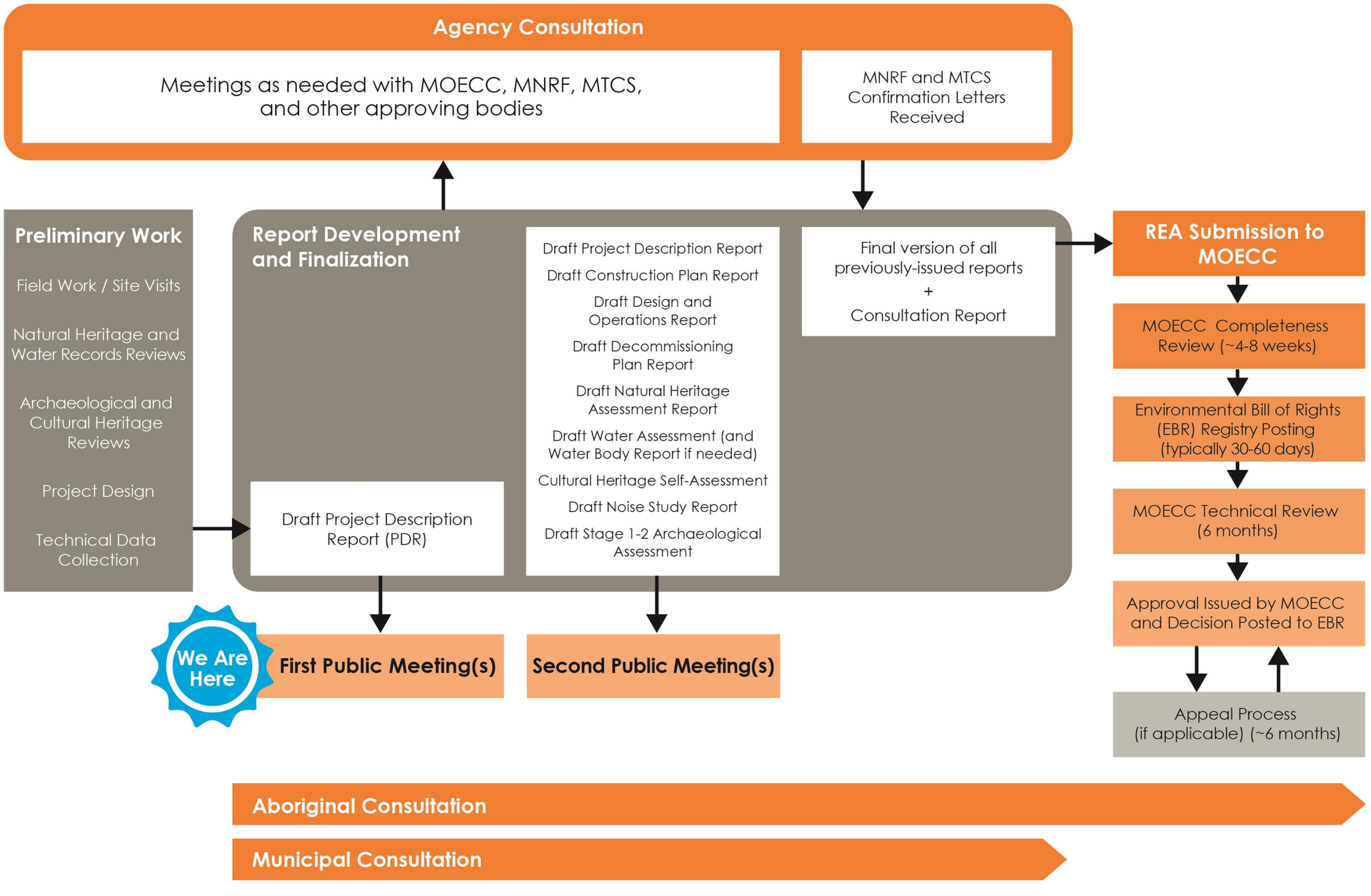
HOW DO THEY WORK?



- A tracker is a type of racking system that follows the sun as it arcs through the sky – ensuring the panels always face the sun.
- The motors are solar powered, thereby eliminating the need for external power.
- The panels are mounted in rows on a north/south axis. A tracking motor is located in the middle of each row.
- Wireless communication between each row controls the movement of the panels and alerts operators to any errors.

THE RENEWABLE ENERGY APPROVAL PROCESS

Overview of Renewable Energy Approval Process



- Issued under Ontario Regulation 359/09 under the Environmental Protection Act.
- Stringent environmental approval process that needs to be satisfied before construction.
- Specifies how the Project will be designed, built, operated and decommissioned so that the environment is protected.

ENVIRONMENTAL AND TECHNICAL ACTIVITIES UNDERWAY

Solar Collection

Meteorological (MET) station erected at site to monitor amount of energy from the sun at site to help with estimating potential electricity production over the life of the Project.

Geotechnical Assessment

Determine the type of soils and depth to bedrock to better understand how the foundations will be designed and built.

Environmental & Cultural Field Work

The following technical studies help us to understand the local environment and to avoid or mitigate potential impacts of the Project: wildlife & wildlife habitat, waterbodies and aquatic resources, woodlands, wetlands, and other vegetation communities, archaeological resources, cultural heritage features, socio-economic features.

Interconnection Assessment

Interconnection studies are performed by Hydro One Networks Inc. (HONI) and the Independent Electricity System Operator (IESO) to ensure the safe and reliable integration of solar energy. The assessments confirm the ability to connect to the grid.

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DESCRIPTION OF POTENTIAL ENVIRONMENTAL EFFECTS

Natural Heritage Resources

- The Project Location is situated within an active agricultural area and not within a natural feature.
- Natural heritage features located within 50 m of the Project Location are assessed for significance. Appropriate mitigation measures are planned for any anticipated environmental effects.
- The Project Location is not located within 50 m of a Provincial Park, Conservation Reserve, or an Area of Natural and Scientific Interest.

Heritage & Archaeological Resources

- Heritage and archaeological studies were completed according to the requirements of the Ministry of Tourism, Culture and Sport.
- No heritage resources or protected properties were identified.
- No evidence of archaeological sites/resources were found within the Project Location.
- No effects to archaeological or heritage resources are anticipated as a result of the Project.

Water Resources

- Waterbodies were identified at and within 120 m of the Project Location.
- Further assessment to document existing conditions and assess potential impacts to waterbodies will be completed this fall.
- Groundwater investigations and/or monitoring requirements will be verified during the REA process.
- The project will be located, designed, constructed and operated in a way that protects water resources.

Further details on potential environmental effects are available in the draft Project Description Report, accessible on the project website (http://www.edf-en.ca/projects/pendleton-solar-energy-centre/)

COST EFFECTIVE & COMPETITIVE PRICING

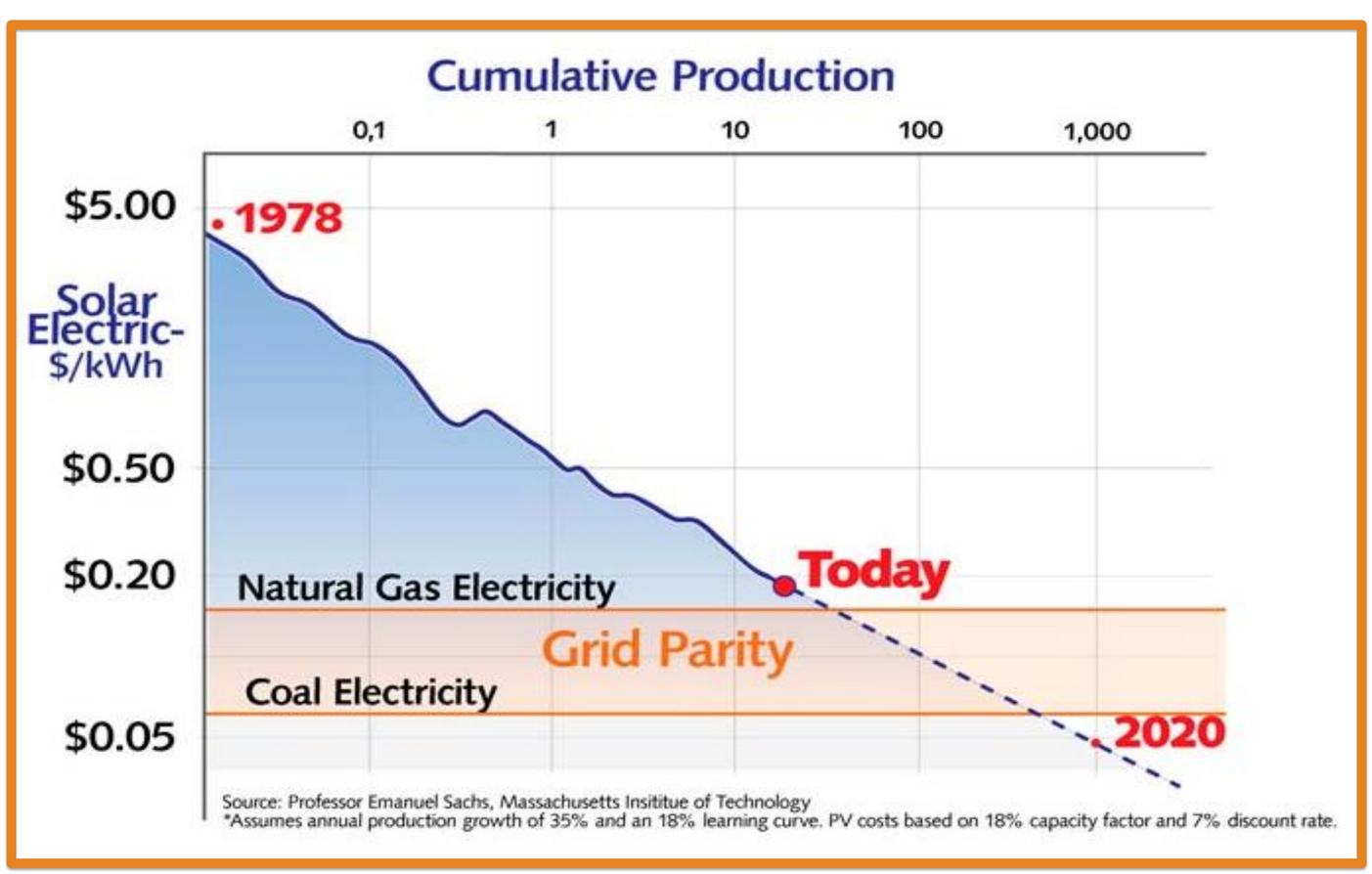
Cost Effective

Solar-generated electricity is becoming more and more competitive with traditional sources of electricity.
Solar contracts offered in 2016 (avg. price $0.157/kWh)

Cheaper than current Ontario residential peak price (~$0.18/kWh) and cheaper than hydro power contracts offered in 2016 (avg price of $0.176/kWh)

Predictable Pricing

Price paid for solar electricity is determined at the time of contract award and will not increase over its 20 year term.



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LOCAL ECONOMIC BENEFITS

EDF EN Canada values the long-term benefits of working with the local community. We have entered into a **Community Benefit Agreement** that will contribute **$480 000 over the life of the project.**

Funds will allow community to support local initiatives such as:

INFRASTRUCTURE IMPROVEMENTS • RECREATIONAL FACILITIES • ENVIRONMENTAL PROJECTS • EDUCATIONAL PROGRAMS

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MUNICIPAL AND LOCAL COMMUNITY BENEFITS

- **$24,000 per year Community Benefit Agreement**
  Contributing funds to the Township of Alfred and Plantagenet;
- **Additional Estimated $20,000 per year in property tax revenues**

$24,000 community benefit
+ $20,000 property taxes
$44,000 total annually

X 20 years = $880,000

- **Construction jobs**
  About 100 construction jobs anticipated at the peak of construction;
- **Long-term operator positions**
  Possible full-time position within the local community to support and service the facility;
- **Local investment**
  Significant investments into the local economy during the development, construction and operation phases of the Project.

BEING A GOOD NEIGHBOUR

Initial Planting
(2 years prior to construction)

Vegetation After 5 Years
(i.e. 3 years after construction)

Vegetation After 10 Years
(i.e. 8 years after construction)

- EDF EN Canada properly integrates projects into the local community through thorough community engagement.
- South Nation Conservation Authority, the Township of Alfred and Plantagenet and neighbors were engaged to design a visual barrier around the site perimeter. More than 1 000 trees (3’ to 6’ tall) anticipated to be planted in the fall of 2016 – almost two years prior to construction.
- Much of the land beneath and around the solar panels will remain unused and can accommodate vegetation in the form of grasses, clover or cultural meadow.

Beehive installed by EDF EN Canada at Arnprior Solar in Ottawa area made possible by planting vegetation such as clover beneath solar panels.

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PROJECT TIMELINE

Project Timeline

July
Public Community Meeting

September
Project Submitted to IESO during LRP 1 RFP Process

August & September
Notice of a Proposal to Engage and Notice of Public Meeting released to public, agencies, municipalities and aboriginal communities

Draft Project Description Report released to public, agencies, municipalities and aboriginal communities

Municipal Consultation Form provided to Municipalities

Fall 2016
Install trees around project perimeter for visual buffering

February
Final Public Meeting

March
Submission of REA application to MOECC

November
REA issued by MOECC (anticipated)

Repowering/ Decommissioning

2015 | 2016 | 2017 | 2018 | 20 or more years after Commercial Operation Date

June
Initiate Renewable Energy Approval (REA) Process

May
REA technical studies and field programs commence, ongoing into fall

March
LRP contract award

December
Draft REA Reports to Public for 60 day Public Review & Comment

November
Draft REA Reports and Municipal Consultation Form provided to Municipalities (90 day review)

We Are Here

October
Public Meeting

December
Commercial Operation Date (COD)

March
Start of Construction

Ongoing consultation with municipal staff, landowners, aboriginal communities, government agencies, special interest groups and members of the community.

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WE WANT TO HEAR FROM YOU!

Please share your questions and comments with us by filling out a questionnaire. Feel free to take extra questionnaires with you and share them with your friends and family.

Copies of the display boards from this Public Meeting and the Draft Project Description Report are available on the website.

To learn more about the project proposal, public meeting, or to communicate your interests please contact us!

PendletonSolar@edf-en.ca
1-844-55-EDF-EN
Website: http://www.edf-en.ca/project/pendleton-solar-energy-centre/

Fabiola Oribe, Associate Project Developer and Stakeholder Relations
Pendleton Energy Centre Limited Partnership
53 Jarvis Street, Ste. 300, Toronto, ON M5C 2H2
Phone Number: 877.697.9997 (ext. 4146)

WHY SOLAR MAKES SENSE

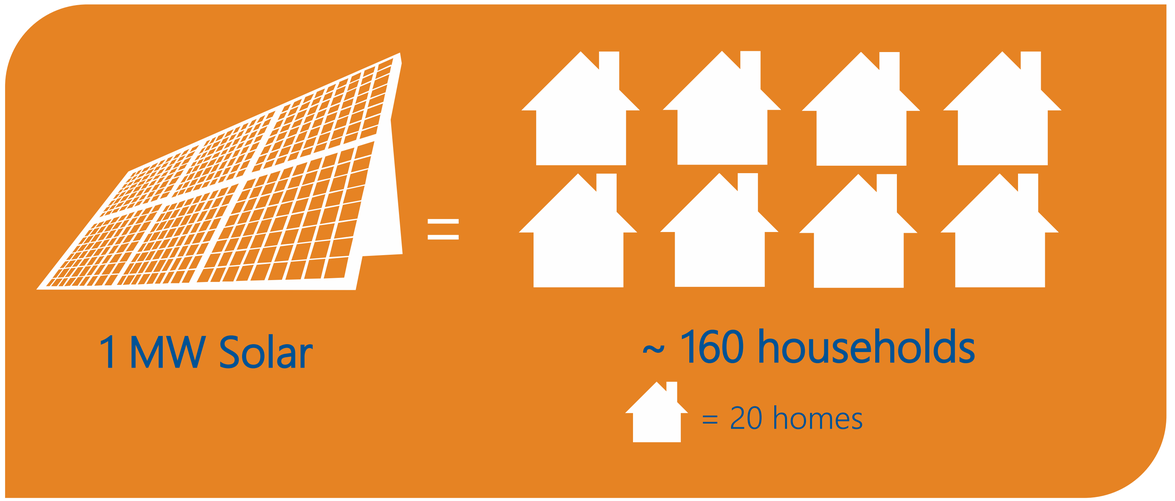
By 2020 solar will:

Produce approximately **1% of electricity** generation in Canada;

Employ a labour force of approx. **10,000 people/yr**;

Displace approx. **1.5 million tonnes** of greenhouse gas (GHG) emissions per year, the equivalent of removing **250,000 cars and trucks** off the road each year.

Source: CanSIA
http://cansia.ca/sites/default/files/cansia_roadmap_2020_final.pdf



Reduce dependence of fossil fuel — Solar energy reduces the dependence on other forms of electricity generation like natural gas and diesel that draw upon finite resources that contribute to greenhouse gas emissions.

Supply aligns with Demand — Solar panels produce electricity to Ontario customers at times during the day when power is most needed.

Clean energy — Solar energy emits no greenhouse gas or CO_2 to the air or ground during operation; water is not used for operation.

LOCAL ECONOMIC BENEFITS

Direct benefits

Surveying
Civil engineering
Mechanical work
Electrical work
Road construction
Transportation equipment

Earthwork activities
Maintenance of vehicle fleet
Maintenance paths
Snow removal
Other related services

Indirect benefits

Meals and accommodation for construction personnel
Products, services and supplies

POWERING PROGRESS WITH COMMUNITY PARTNERS

"Our community is very proud to be a part of such an important renewable energy project. There are tremendous economic benefits to our community including the more than 350 jobs that were created during construction and another 20 permanent operations and maintenance jobs."

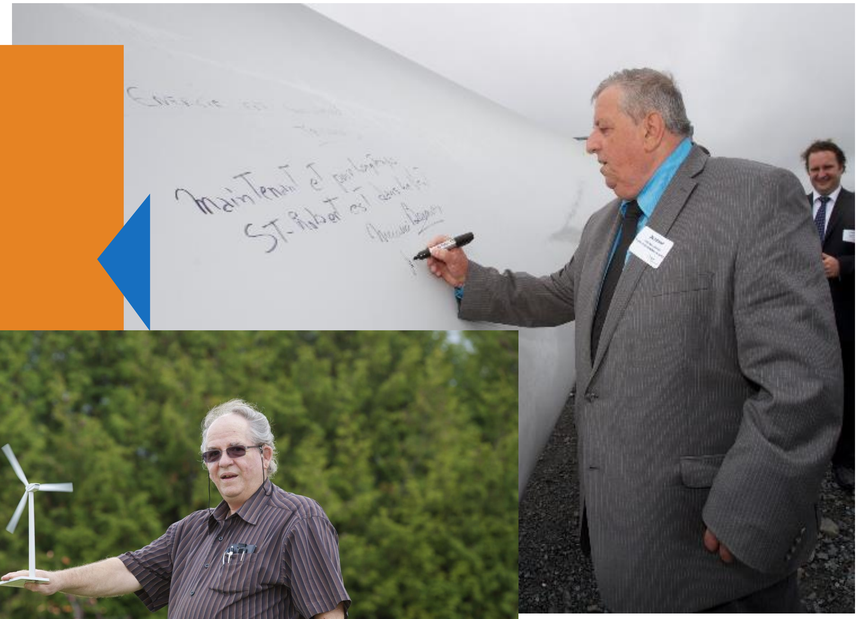
Kym Nichols,
Mayor of Carmangay, AB

Blackspring Ridge Wind Project (300 MW)

"EDF EN Canada has established an open and honest communication process. They shared with us their plans and have delivered exactly on their promise. This is the key to success."

Jeannot Lachance and Michel Polin,
Mayors of Saint-Robert-Bellarmin, QC

Saint-Robert-Bellarmin Wind Project (80 MW)
Le Granit Wind Project (24,6 MW)



"I consider the work done for this wind project to always have respected the important values of the MRC du Granit. Moreover, respecting the vision of the MRC, EDF EN Canada was able to put the citizens and the environment
at the heart of their priorities in the development and construction of this valuable wind project."

Maurice Bernier,
Prefect of Granit MRC, QC (2005-2014)

Le Granit Wind Project (24,6 MW)

VISUAL IMPACTS AND SOUND

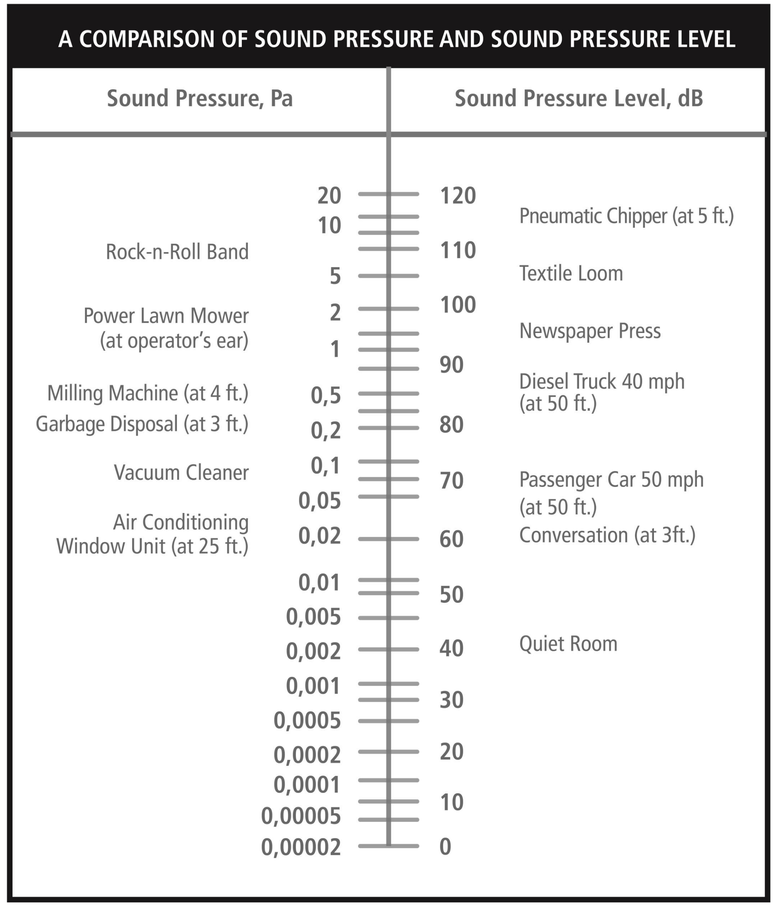
Visual Impacts

The solar panels are designed to absorb light to convert it into energy, rather than reflect it. This means there will be minimal visual impact caused by glare.

Sound

The solar panels do not emit any sound. However, the inverters (which convert electricity from direct current to alternating current electricity) and the transformers (which increase the voltage of the electricity to accommodate the local distribution grid) do emit some sound.

As part of our project design, we must meet the Provincial noise regulations that limit the noise at neighboring homes to 40 decibels (equivalent to a quiet room) measured at the outside of a home.



Source: Canadian Centre for Occupational Health and Safety, OSH Answers Fact Sheet
http://www.ccohs.ca/oshanswers/phys_agents/noise_basic.html