

CLARINGTON TRANSFORMER STATION

Class Environmental Assessment
Environmental Study Report

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Environmental Services and Approvals
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EXECUTIVE SUMMARY

Introduction

The proposed Clarington Transformer Station (TS) project (herein referred to as the “Project”) is subject to the “Class Environmental Assessment for Minor Transmission Facilities” (Class EA) process, in accordance with the Ontario *Environmental Assessment Act* (*EA Act*). This Environmental Study Report (ESR) has been prepared in compliance with the requirements of the *EA Act* and describes the Class EA process that has been undertaken for the Project.

Proposed Project

The Project involves a new 500/230 kilovolt (kV) transformer station and the associated line work. The Project is to be located on Hydro One Networks Inc. (Hydro One) property, in the Regional Municipality of Durham, in the Municipality of Clarington, bordering the east side of the City of Oshawa, northeast of Concession Road 7 and Townline Road North.

The station will transform electricity voltages from 500 kV to 230 kV by connecting to two of four existing 500 kV circuits and to all five of the existing 230 kV circuits located on or adjacent to the proposed Clarington TS site. The station will consist of two 500/230 kV transformers, a 500 kV switchyard, a 230 kV switchyard, two relay buildings, one electrical panel building, the associated connection facilities and equipment. The station will be serviced by a 44 kV distribution circuit supplied from Wilson TS.

The previously approved Enfield TS (230 kV/44 kV) will also be constructed within the same property when it is required by local demand. Also, space has been reserved for two additional 500/230 kV transformers and associated facilities to be installed on the same property at a later date to accommodate for future demand.

Construction will begin in May 2014 to achieve the planned in-service date of late 2017.

Project Need

The Ontario Power Authority (OPA) has advised Hydro One that Ontario Power Generation's (OPG) Pickering Nuclear Generating Station (NGS) is approaching its final years of operation and will be retired between 2015 and 2020. Pickering NGS is the largest generation facility in the Greater Toronto Area (GTA) and currently supplies the GTA (including the Regional Municipality of Durham) with more than 25 percent of its peak electricity demand. When the generating station is removed from service, its 3,000 megawatts (MW) of capacity must be replaced by a corresponding amount of power through Hydro One's transmission system. The OPA recommended that Hydro One install the station by the spring of 2015 to address the possibility of the retirement of Pickering NGS by that time, thereby preventing unacceptable reliability to the eastern portion of the GTA under an early retirement scenario. However, since this recommendation, Pickering NGS has received an operational extension to 2018. Consequently, the in-service date of Clarington TS is now late 2017.

The Clarington TS property was acquired via expropriation in 1978 for the purpose of installing a 500 / 230 kV transformer station. It is Hydro One's understanding that installing the station facilities at Clarington TS property is the only reasonable alternative from a technical and economic perspective.

Class EA Process

The Class EA process for the proposed Clarington TS project included an assessment of the existing natural and social environment and their sensitivity to the Project, prediction of potential effects, identification of mitigation measures as well as public and agency consultation.

Project Consultation

Since May 3, 2012, Hydro One has conducted extensive public and government agency consultations to inform stakeholders about the Project, as well as identify and resolve any potential concerns. First Nations and Métis communities, government agencies and officials, interest groups, affected property owners and the public were consulted by way of meetings and/or written or telephone communications.

Public Information Centres (PICs) were held for the Project on May 23, 2012 and November 8, 2012. A Community Information Meeting was also held on September 11, 2012. The area residents and key interest groups were notified about the Project, PICs, and Community Information Meeting through public notices in local newspapers, letters via hand delivery and courier, and email. A Project website, www.HydroOne.com/Projects/Clarington, was also established to keep interested parties informed about the status of the Project.

Draft Environmental Study Report Review Period

Hydro One provided a 30-day review period to allow First Nations and Métis communities, government agencies and officials, affected property owners and interested public to review the draft Environmental Study Report (ESR). The draft ESR was made available for review and comment from Thursday November 15, 2012 to Monday December 17, 2012.

During the review period, comments and issues were received from stakeholders and the public regarding the Project. Both the issues raised by the stakeholders and Hydro One's responses are documented and summarized in **Chapter 4.0** of this ESR.

Part II Order Requests

Hydro One received Part II Order requests during the 30 day review period to elevate the project to an Individual EA. The Part II Order requests along with Hydro One's response can be found in **Appendix B9** of this ESR and are summarized in **Chapter 4.0**. The issues identified have been addressed throughout this report.

In a letter dated January 2, 2014, the Minister of the Environment informed Hydro One of the decision that an Individual EA is not required. The Minister's decision also included six (6) conditions for further study and consultation to be undertaken by Hydro One during the detailed design and construction of the Project. The Minister's letter can be found in **Appendix B11** of this ESR.

Hydro One will fully comply with the requirements of the Class EA process and with the conditions imposed by the Minister in his decision to deny the Part II Order requests. Once the Final ESR has been filed with the Ministry of the Environment, the Project will be considered acceptable and Hydro One will proceed with the undertaking as outlined in the ESR and the Minister's conditions. Prior to beginning construction, Hydro One will seek all other regulatory approvals, licenses, and permits required for the Project, and will hold a construction related PIC for the community.

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ACRONYMS AND MEASUREMENT UNITS

Acronyms

AANDC	Aboriginal Affairs and Northern Development Canada
ANSI	Area of Natural and Scientific Interest
ASI	Archaeological Services Inc.
BSC	Bird Studies Canada
Class EA	Class Environmental Assessment for Minor Transmission Facilities
CLI	Canada Land Inventory
CLOCA	Central Lake Ontario Conservation Authority
MOE Code	MOE Code of Practice for Preparing, Reviewing and Using Class Environmental Assessments in Ontario
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
COSSARO	Committee on the Status of Species at Risk in Ontario
DFO	Department of Fisheries and Oceans Canada
DNA	Deoxyribo Nucleic Acid
Durham Region	Regional Municipality of Durham
<i>EA Act</i>	<i>Environmental Assessment Act</i>
EA	Environmental Assessment
EAAB	Environmental Assessment and Approvals Branch
EA Guide	Guide to Environmental Assessment Requirements for Electricity Projects
ECA	Environmental Compliance Approval
EEA	Enniskillen Environmental Association
EMF	Electric and magnetic fields
EMS	Emergency Medical Services
<i>EPA</i>	<i>Environmental Protection Act</i>
ERP	Emergency Response Plan
ESA	Environmental Sensitive Area
ESR	Environmental Study Report
FPTRPC	Federal Provincial Territorial Radiation Protection Committee
GDP	Gross Domestic Product
GS	Generating Station

GTA	Greater Toronto Area
GTAA	Greater Toronto Airports Authority
Hydro One	Hydro One Networks Inc.
IESO	Independent Electricity System Operator
IGF	Information Gathering Form
IO	Infrastructure Ontario
IPSP	Integrated Power System Plan
JCT	Junction
KNHF	Key Natural Heritage Features
LDC	Local distribution company
MAA	Ministry of Aboriginal Affairs
MAH	Ontario Ministry of Municipal Affairs and Housing
MNR	Ontario Ministry of Natural Resources
MOE	Ontario Ministry of the Environment
MTCS	Ontario Ministry of Tourism, Culture and Sport
MTO	Ontario Ministry of Transportation
NGS	Nuclear Generating Station
NHIC	Natural Heritage Information Centre
OEB	Ontario Energy Board
OGS	Ontario Geological Survey
OMAFRA	Ontario Ministry of Agriculture, Food and Rural Affairs
OP	Official Plan
OPA	Ontario Power Authority
OPG	Ontario Power Generation
ORMCP	Oak Ridges Moraine Conservation Plan
ORTAC	Ontario Resources and Transmission Assessment Criteria
OWES	Ontario Wetland Evaluation System
<i>OWRA</i>	<i>Ontario Water Resources Act</i>
PIC	Public Information Centre
PIF	Partners in Flight
POR	Point of Reception
PPF	Project Participation Form

PPS	Provincial Policy Statement
PSW	Provincially Significant Wetland
Project	Clarington TS Project
PTTW	Permit-To-Take-Water
ROW	Right-of-way
SAR	Species at risk
<i>SARA</i>	<i>Species at Risk Act</i>
SARO	Species at Risk in Ontario
SWMHYMO	Stormwater Management Hydrologic Model
TS	Transformer station
USEPA	United States Environmental Protection Agency

Measurement Units

%	percent
AMSL	above mean sea level
dBa	A-weighted decibel
ha	hectare
km	kilometre
km ²	square kilometre
kV	kilovolt
L	litre
m	metre
MVA	mega volt-ampere
MW	megawatt
V	volt