Appendix D.8 Greenhouse Gas Assessment

Environmental Review Report

East Windsor Generation Facility Expansion

Capital Power Corporation

SLR Project No.: 241.030524.00024

July 2024

Greenhouse Gas Assessment

East Windsor Generation Facility Expansion Project

Capital Power Corporation

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SLR Project No.: 241.030524.00024

July 2024

Revision: 1

Revision Record

Revision	Date	Revision Description
0	April 11, 2024	Draft report issued for external review
1	July 2024	Report issued for public review

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Executive Summary

Capital Power Corporation (Capital Power), through its affiliate East Windsor (Expansion) L.P., is proposing the East Windsor Generation Facility Expansion (the Project) in the City of Windsor, Ontario. The Project is responsive to the Independent Electricity System Operator's (IESO's) call for additional natural gas generation capacity and will provide up to approximately 107 megawatts (MW) of additional gross generation capacity to the Windsor-Essex area and provincial electricity grid. The proposed Project is being designed to provide dependable capacity at peak times when Ontario's other generation sources are not capable of meeting demand.

The objective of this Greenhouse Gas (GHG) Assessment Report is to quantify the estimated GHG emissions, in carbon dioxide equivalent units (CO_2e) per year, associated with the Project. The assessment incorporates a Project-specific dispatch profile (developed by Capital Power) based on the IESO-forecast demand. Analytical software was utilized to model a variety of complex market inputs to predict how the Project will likely be dispatched by the IESO under future market conditions. This report has been prepared in support of the Environmental Review Report (ERR) to meet the requirements of the Environmental Screening Process for Electricity Projects (ESP).

Based on projections, the estimated direct (Scope 1) annual GHG emission totals for the Project peak at approximately 4,032 tonnes per year of CO_2e in 2027. Based on the analysis undertaken and presented in this GHG Assessment Report, the Project is not expected to exceed the 10,000 tonnes of CO_2e per year reporting threshold identified in Ontario's *Environmental Protection Act* and the *Canadian Environmental Protection Act*. However, since the Project is an electricity generation facility, it is a designated facility under Schedule 2 of Ontario Regulation 241/19 under the *Environmental Protection Act* and is required to report under the Provincial requirements, including the Emission Performance Standards Program.

The Project will result in increased GHG emissions. However, the Project is predicted to contribute ≤0.07% annually to the IESO's GHG projections for the Ontario Electricity Sector based on IESO's 2024 Annual Outlook. With the increasing electricity demand in the province as well as the reduced capacity of nuclear electricity generation, the IESO will be relying on natural gas electricity generation facilities to increase output to meet the increased demand in the short-term. The Project will assist in meeting IESO forecasted increased demand, while contributing a small percentage of overall provincial electricity sector generated GHGs.

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Acronyms and Abbreviations

BAU	Business-as-Usual
CEPA	*Canadian Environmental Protection Act, 1999*
CER	*Clean Electricity Regulations*
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CH_4	methane
ECA	Environmental Compliance Approval
ECCC	Environment and Climate Change Canada
ESP	Environmental Screening Process
EWCC	East Windsor Cogeneration Centre
GE	General Electric
GSU	Generator Step-Up
GHG	Greenhouse Gas
GWh	Gigawatt-hour
GWP	Global Warming Potentials
HFC	hydrofluorocarbon
IESO	Independent Electricity System Operator
IPCC	Intergovernmental Panel on Climate Change
MECP (MOE)	Ministry of the Environment, Conservation and Parks (formerly Ministry of the Environment)
MW	megawatt
MWh	megawatt-hour
Mt	megatonne
NF_3	nitrogen trifluoride
N_2O	nitrous oxide
NIR	National Inventory Report
O. Reg.	Ontario Regulation
PFCs	perfluorocarbons
SF_6	sulphur hexafluoride
t	tonnes
TWh	terawatt-hour
yr	year

1.0 Introduction

1.1 Project Overview

Capital Power Corporation (Capital Power), through its affiliate East Windsor (Expansion) L.P., is proposing the East Windsor Generation Facility Expansion (the Project) in the City of Windsor, Ontario. The Project is responsive to the Independent Electricity System Operator's (IESO's) call for additional natural gas generation capacity and will provide up to approximately 107 megawatts (MW) of additional gross generation capacity to the Windsor-Essex area and provincial electricity grid. The proposed Project is being designed to provide dependable capacity at peak times when Ontario's other generation sources are not capable of meeting demand.

The Project consists of the construction and operation of a new simple cycle natural gas generation facility located adjacent to the existing East Windsor Cogeneration Centre (EWCC)[1]. The Project will make use of some existing infrastructure, including tying into the existing EWCC high-voltage interconnection line to avoid the need for a new connection to the provincial electricity grid. Ancillary project components include an equipment building, storage building, stormwater management system and site servicing. Additional areas for temporary staging and laydown will be required during the Construction phase.

The Project will be located within the existing EWCC fenceline, primarily on lands owned by Capital Power. These lands represent a series of parcels, municipally known as 228 to 276 Cadillac Street (hereby referred to as the Project Site). These parcels, along with others on the west side of Cadillac Street, were formerly residential properties that were acquired, and residences removed, as part of the original development of the EWCC. The Project Site is approximately 0.61 hectares (ha; 1.49 acres) in size and is currently used for site access, parking, mowed and landscaped areas, and formerly storage (removed at the City's request) (**Figure 1-1**).

[1] The EWCC is located on the land leased from Ford Motor Company of Canada Ltd. In addition to generating electricity, the facility used to provide steam to the neighbouring Ford Motor company for their Ford Windsor engine plant. Since the closure of the engine plant in 2018, Ford has terminated the Steam Supply Agreement with EWCC, and EWCC now operates in simple cycle mode as a peaking plant.

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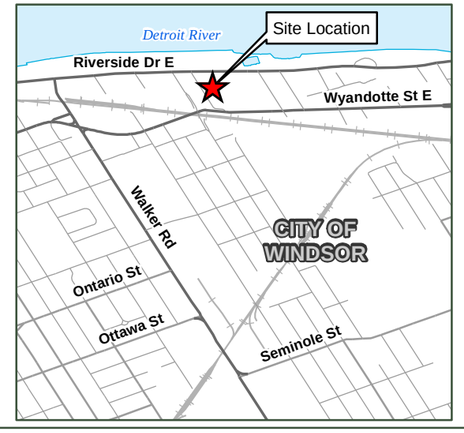
LEGEND:

- Capital Power Lands - Owned
- Capital Power Lands - Leased
- Project Site
- Parcel Fabric (City of Windsor)
- Railway

NOTES:
PARCEL FABRIC, CITY OF WINDSOR OPEN DATA CATALOGUE, ACCESSED NOVEMBER, 2022.
IMAGERY: COUNTY OF ESSEX; 2023



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THIS MAP IS FOR CONCEPTUAL PURPOSES ONLY AND SHOULD NOT BE USED FOR NAVIGATION

EAST WINDSOR GENERATION FACILITY EXPANSION

GREENHOUSE GAS ASSESSMENT

PROJECT LOCATION

SLR

FIGURE NO:
1-1

DATE: July 2024

PROJECT NO: 241.30524.00024

GIS PATH: G:_Projects\241_30524_CapitalPower\1_Maps\RPT\RPT_EA_Screening\EWC\241_30524_1_1_EWC_ERR_ProjectLocation_revM.mxd

1.2 Objective

The objective of this Greenhouse Gas (GHG) Assessment Report is to quantify the estimated GHG emissions in carbon dioxide equivalent units (CO_2e) per year associated with the Project. The assessment incorporated a Project-specific dispatch profile (developed by Capital Power) based on the IESO-forecast demand. Analytical software was utilized to model a variety of complex market inputs to predict how the Project will likely be dispatched by the IESO under future market conditions.

This report has been prepared in support of the Environmental Review Report (ERR) to meet the requirements of the Environmental Screening Process for Electricity Projects (ESP).

2.0 Project and Site Context

2.1 Site Context

The Project Site is located adjacent to the existing EWCC, on a series of parcels municipally known as 228 to 276 Cadillac Street. The Project will be located within the existing EWCC fenceline, primarily on lands owned by Capital Power. The EWCC is located on the Ford Powerhouse property, on land leased from the Ford Motor Company of Canada Ltd. The current EWCC facility fenceline encompasses the Project Site lands, which are currently used for site access, parking, landscaped areas, and formerly storage (removed at the City's request).

2.2 EWCC Context

The existing EWCC commenced commercial operations in 2009. The EWCC operates its existing generators in simple cycle mode to produce electricity using two Gas Turbine Generators (GTGs). Electricity is generated and directed to the provincial grid when dispatched by the IESO.

The existing EWCC is a peaking power plant that operates its existing generators in simple cycle mode to produce electricity using two Gas Turbine Generators (GTGs). Electricity is generated and directed to the provincial grid when dispatched by the IESO.

2.3 Project Context

Key project components include one General Electric (GE) 7E.03 simple cycle gas turbine generator, and all associated infrastructure including an inlet air filter, exhaust stack, fuel gas compressor, natural gas handling system, instrumentation and control systems, and a Generator Step-Up (GSU) transformer. Ancillary project components include an equipment building, storage building, stormwater management system and site servicing. The Project will be operated and dispatched independently of the existing EWCC.

3.0 Regulatory Framework

As part of the Ontario *Environmental Assessment Act* (the Act), the Ministry of the Environment Conservation and Parks (MECP) requires proponents to consider climate change as part of an environmental assessment (EA) when evaluating potential environmental effects of a proposed project. MECP has issued the *Considering climate change in the environmental assessment process* guide for proponents and practitioners to consider the potential effects of a project on the atmosphere through the emission of greenhouse gases (Government of Ontario 2017).

The MECP guidance document serves to outline the expectations for considering climate change in the preparation, execution, and documentation of environmental assessment studies and processes.

The guidance specifically notes that a quantitative assessment approach is warranted for projects where emissions of carbon dioxide are anticipated, with a natural gas-fired generating station provided as an example within the document.

3.1 Federal Regulatory Context

Substances released from Canadian emission sources that have the potential to impact air quality are regulated under the *Canadian Environmental Protection Act*, 1999 (CEPA). Section 46 of the CEPA requires operators of facilities that emit ≥10,000 tonnes of GHGs (expressed as CO_2e) per year to report their emissions to Environment and Climate Change Canada (ECCC). The federal GHG Reporting Program collects information on GHG emissions annually from facilities across Canada to inform decision makers on Canada's overall emission levels.

The federal government has established *Regulations Limiting Carbon Dioxide Emissions from Natural Gas-fired Generation of Electricity* (SOR/2018-261; GOC 2018). Under these regulations, natural gas-fired electricity generation units have emission intensity compliance limits. The prescribed emission intensities are expressed in tonnes of CO_2 per gigawatt-hour (GWh) of electricity produced. Under this Regulation, a new combustion engine larger than 25 MW using more than 30% of its heat input from natural gas and sells or distributes more than 33% of its potential electrical output to the electric grid is subject to emission intensity limits.

The federal draft Clean Electricity Regulations (CER) are currently being developed, with an anticipated release date targeted for 2024. The CER will have statutory authority under CEPA and aim to transition the Canadian electricity sector to net-zero as an enabler for broader decarbonization of the economy. When implemented, the CER would limit carbon emissions produced by electricity generated using fossil fuel and ultimately eliminate emitting sources of supply connected to public electricity grids in Canada. During the transition to net zero by 2050, natural gas-fired electricity generation projects are able to support the transition in the short term by meeting the electricity demand as a result of population growth in urban areas as renewable energy projects are developed.

3.2 Provincial Regulatory Context

Ontario Regulation (O. Reg.) 390/18 – Greenhouse Gas Emissions: Quantification, Reporting and Verification has statutory authority under Ontario's *Environmental Protection Act, 1990*. Ontario facilities that emit ≥10,000 tonnes of CO_2e per year are subject to the GHG emission reporting requirements of the regulation.

As of January 2022, industrial facilities in Ontario that emit ≥50,000 tonnes of CO_2e per year or are a designated industry in Schedule 2 of the Regulation are subject to the requirements of O. Reg. 241/19 – Emissions Performance Standards, with statutory authority under the Ontario *Environmental Protection Act, 1990*. The Emissions Performance Standards Program is intended to determine GHG emissions limits as defined in Schedule 2 of O. Reg. 241/19, that the facilities must meet annually. The standards become stricter every year and require emitters to either reduce their emissions or pay for exceeding the limits. Facilities that emit between 10,000 and 50,0000 tonnes of CO_2e per year may opt into the program.

4.0 Provincial Context

In December 2022 and March 2024, the IESO released its Annual Planning Outlook which identified a significant need for new power supply in the province (IESO 2022a, 2024). At the system level, the IESO is projecting a generation capacity deficit starting as early as 2025. After many years of stable supply, and at times, a surplus, the projected shortfall is being driven by 1) increasing demand due to expanding electrification and increasing business investment in the province, 2) refurbishment of the Pickering Nuclear Generating Station (Government of Ontario 2024) and refurbishment schedules at the Bruce and Darlington nuclear facilities, and 3) expiring IESO contracts (IESO 2022a, 2024). To address the projected shortfall, the IESO has identified that Ontario requires an additional 4,000 MW of new power supply between 2025 and 2027 (IESO 2022a, 2024).

While the need for new capacity is clear at the system wide level, the IESO has also identified several regions of the province with particularly pressing needs for new power supply. The Windsor-Essex area, representing the region west of London including City of Windsor, is one of these regions, with the IESO forecast suggesting local demand will outstrip capacity as early as 2025.

The IESO's Resource Eligibility Interim Report, dated October 7, 2022, stated that without a limited amount of new natural gas in the near term, the IESO would be reliant on emergency actions such as load curtailments or rotating blackouts (IESO 2022b). The IESO's Pathways to Decarbonization (IESO 2022c) and Resource Eligibility Interim Report indicate that a moratorium on new natural gas generation would not be possible under the current demand forecast. The IESO has recommended procurement of a limited amount of natural gas-fired generation to help fuel the energy transition and maintain reliability.

The continued use of natural gas in a limited way will allow businesses and consumers to advance electrification plans and decarbonize Ontario's electricity system. Overall, the use of natural gas for electricity purposes from 2026 through 2040 will increase GHG emissions from the electricity generation sector over existing conditions.

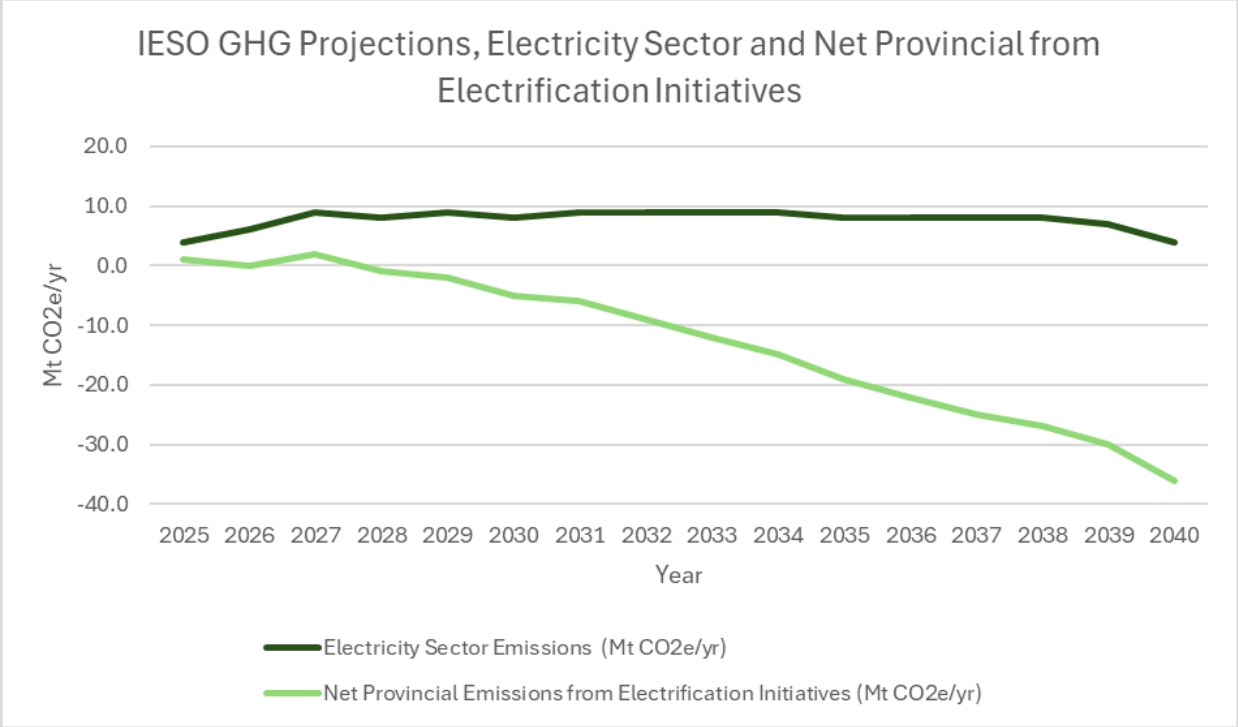
An increase in electricity sector emissions is not expected to translate to an increase in economy wide provincial GHG emissions. **Table 4-1** and **Figure 4-1** compare the IESO-forecasted electricity sector GHG emissions to the net provincial emissions associated with the implementation of future electrification initiatives. The IESO forecasts that two major electrification initiatives will impact the broader economy emissions: 1) increased usage of electric vehicles, and 2) electrification of industrial equipment (IESO 2022a, 2024). As a result of these initiatives, the overall GHG emissions for the province are projected to decrease with increased electricity usage. Therefore, even though emissions associated with electricity generation are forecasted to increase, there will be an overall, Province-wide, decrease in GHG emissions associated with the switch to using more electricity in vehicles and industrial equipment (IESO 2022c).

Table 4-1: IESO's 2025-2040 Electricity Sector and Net Provincial GHG Emissions Forecast

Year	Projected Ontario GHG Emissions*	
	Electricity Sector GHG Emissions (Mt CO_2e year)	Net Provincial GHG Emissions Considering Electrification Initiatives (Mt CO_2e year)
2025	4	1
2026	6	0
2027	9	2
2028	8	-1
2029	9	-2
2030	8	--5
2031	9	-6
2032	9	-9
2033	9	-12
2034	9	-15
2035	8	-19
2036	8	-22
2037	8	-25
2038	8	-27
2039	7	-30
2040	4	-36

* IESO (2024)

Figure 4-1: Greenhouse Gas Emissions for the Ontario Electricity Sector 2025-2040



Source: IESO 2024

5.0 Methods

The methods used to quantify GHG emissions (CO_2e) for the Project followed O. Reg. 390/18 - Greenhouse Gas Emissions - Quantification, Reporting and Verification (MECP 2022); and Canada's Greenhouse Gas Quantification Requirements (ECCC 2022). These quantification methodologies align with the GHG Protocol developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WRI 2015) and ISO-14064-1 and 14064-2.

Annual GHGs, expressed as carbon dioxide equivalent units (CO_2e), associated with the Project were quantified using the Project specific, and dispatch profile (developed by Capital Power) based on the IESO-forecasted demand. For the Project specific dispatch profile, analytical software was utilized to account for a variety of complex market inputs to predict how the Project will be dispatched in the IESO market under future conditions. Market inputs include supply, demand, gas prices, carbon prices, and imports/exports.

5.1 Assessment Boundaries

The GHG assessment quantified direct emissions of GHG (CO_2e) from the Project, using the methods described above under **Section 5.0**. The assessment of GHG emissions considered the Project's direct GHG emissions from sources that are owned or controlled by East Windsor (Expansion) L.P. and are within the Project Site for the operation phase of the project. For the purpose of the assessment, direct emissions are referenced to as Scope 1 (direct) emissions (WRI 2015). Direct GHG Scope 1 emissions were selected as the appropriate comparative within the context of the projected Ontario GHG emissions for the Electricity Sector, and regulatory reporting requirements.

Scope 2 (indirect) and Scope 3 (value chain) emissions have not been included in this assessment as they are not required under provincial or federal reportable GHG emissions regulations and are captured under other facility or activity Scope 1 emissions. No carbon sinks have been identified as being modified/affected in relation to this Project. No GHG removals have been identified for this assessment.

All GHG emissions originate within the Project Site boundary, therefore the spatial boundary for GHG quantification aligns with the extents of the Project Site (**Figure 1-1**). To assess the net GHG emissions, the Ontario electricity sector GHG emissions were used to compare against the Project GHG (CO_2e) emissions.

For the purposes of this assessment, temporal boundaries assume that the Project will be operational by 2026. The forecasted demand for the Project is presented to the year 2040, which is the duration of the contract for electricity generation under the IESO contract. GHG emissions associated with construction equipment were not assessed as they are significantly less than operational emissions. Operational emissions were the focal point of the assessment to determine the incremental change in GHG emissions compared to Business-as-Usual emissions.

5.2 Selected Parameters

A GHG is any atmospheric gas that absorbs and re-emits infrared radiation, thereby acting as a thermal blanket for the planet and warming the lower levels of the atmosphere. GHGs are released to the atmosphere from several natural and anthropogenic (human activity) sources (IPCC 2021). The Project is an industrial activity (generating electricity using fossil fuels) defined in Schedule 2 of O. Reg. 241/19, and therefore GHG quantification is required.

As per the MECP Guideline, the GHG assessment considered all GHGs tracked through the Canadian National Inventory Report (NIR), including:

- Carbon dioxide (CO_2);
- Methane (CH_4);
- Nitrous oxide (N_2O);
- Perfluorocarbons (PFCs);
- Hydrofluorocarbons (HFCs);
- Sulphur hexafluoride (SF_6);
- Nitrogen trifluoride (NF_3).

CO_2, CH_4, and N_2O were parameters selected for inclusion in this assessment. The remaining gases listed above have been excluded as they will not be emitted during operation of the Project.

Final reported emissions were converted into CO_2e by multiplying each GHG by their global warming potentials (GWP) from the 2023 provincial and federal reporting guidance (ECCC 2023; Government of Ontario 2023). The GWP for each GHG used in this assessment are summarized in **Table 5-1.**

Table 5-1: Global Warming Potential (GWP) Multiplier Used

GHG	GWP
CO_2	1
CH_4	28
N_2O	265
Note: GWP deferred to 2023 provincial and federal reporting guidance (ECCC 2023; Government of Ontario 2023)	

5.3 Emission Sources

The single General Electric (GE) 7E.03 gas turbine generator operating in simple cycle mode is the only significant direct source of emissions associated with the Project; therefore, only emissions from the gas turbine have been assessed. The Project will have HVAC systems and emergency generators; however, these sources are not directly related to the process, are intermittent, and not significant in terms of GHG emissions. As such, these sources have been excluded from this assessment.

5.4 GHG Emissions Data Sources and Calculations

Estimates of GHG emissions resulting from the Project (when in operation) were prepared based on the information provided by Capital Power and calculated based on the number and type of equipment, fuel consumption, and GHG emission factors. Emission factors were obtained from the NIR (ECCC 2023) and Guideline for Quantification, Reporting and Verification of Greenhouse Gas Emission (MECP 2022). Estimated Project GHG emissions from 2026 to 2040 were modelled against the Project-specific dispatch profile (developed by Capital Power) and the IESO-forecasted facility demand. The GHG emission factors used for the 7E.03 gas turbine generator are provided in **Table 5-2.**

Table 5-2: GE 7E.03 Simple Cycle GHG Emission Factors

Source	Fuel Type	GHG	Emission Factor (g/m^3)
Combustion Turbine	Natural Gas	CO_2	1,921
		CH_4	0.49
		N_2O	0.049

Note:
Emission factors obtained from NIR (ECCC 2023) and Guideline for Quantification, Reporting and Verification of Greenhouse Gas Emission (MECP 2022).

5.5 Assumptions and Limitations

Assumptions for the projected GHG emissions from the Project include:

- Projected GHG emissions based on an intensity of 0.051tCO2e/GJ, which is derived from ECCC emission factors and typical gas composition supplied to the site.
- Project GHG emissions from 2026 to 2040 are based on forecasted fuel consumption/energy needs to meet IESO targets, as forecasted by Capital Power.

6.0 Results

6.1 Forecasted Business-as-Usual GHG Emissions

Project GHG emissions were assessed against comparable and functionally equivalent GHG emissions that would occur in the absence of the Project. This is referred to as the Business-as-Usual (BAU) scenario, which was used to determine if the operation of the Project would result in a net increase or decrease in GHG emissions.

Analytical software was utilized to account for a variety of complex market inputs to predict how the existing EWCC facility will be dispatched by the IESO under future market conditions. Market inputs include supply, demand, gas prices, carbon prices, and imports/exports. The BAU emissions scenario assumed the existing EWCC facility would continue to operate in its current configuration, without the proposed Expansion Project, under future IESO dispatch conditions.

BAU emissions are represented by the forecasted direct GHG emissions from the operations at the existing EWCC facility and represent the scenario against which the Project's emissions were compared.

The 2026-2040 forecasted GHG emissions for the BAU scenario are presented in **Table 6-1**.

Table 6-1: 2026-2040 Estimated BAU GHG Emissions

Year	Estimated BAU GHG Emissions (t CO_2e /year)
2026	3,864
2027	3,627
2028	2,472
2029	2,820
2030	1,676
2031	3,283
2032	2,144
2033	990
2034	1,003
2035	989
2036	1,164
2037	1,072
2038	1,096
2039	1,195
2040	1,251

6.2 Project GHG Emissions

The 2026-2040 projected Scope 1 (Direct) GHG emissions for the operation phase of the Project are presented as tonnes of CO_2e per year in **Table 6-2**.

Table 6-2: 2026-2040 Estimated Project GHG Emissions (Scope 1 [Direct] Emissions)

Year	Estimated Project GHG Emissions (t CO_2e /year)
2026	3,568
2027	4,032
2028	3,141
2029	2,800
2030	1,998
2031	1,937
2032	2,614
2033	2,316
2034	1,844
2035	1,902
2036	1,950
2037	2,403
2038	2,788
2039	2,613
2040	2,860

Based on projections, the estimated direct annual GHG emission totals for the Project peak at approximately 4,032 tonnes per year of CO_2e in 2027. Based on the analysis undertaken and presented in this GHG Assessment Report, the Project is not expected to exceed the 10,000 tonnes of CO_2e per year threshold identified in Ontario's *Environmental Protection Act* and the *Canadian Environmental Protection Act*, as described in **Section 3.0**. However, since the Project is an electricity generation facility, it is a designated facility under Schedule 2 under Ontario Regulation 241/19 under the *Environmental Protection Act* and is required to report under the Provincial requirements, including the Emission Performance Standards (EPS) Program. Due to the Project's limited use, it will not meet the criteria of selling more than 33% of its total potential output and, therefore, is exempt from the Regulation's emission intensity limit.

When considered within the provincial context (**Section 4.0** and **Table 4-1)**, the Project is predicted to contribute between 0.02% and 0.07% annually to the projected Ontario GHG emissions for the Electricity Sector between 2026 and 2040.

6.3 Cumulative GHG Emissions

Cumulative (site wide) GHG emissions for the Project and the existing EWCC will increase overall GHG emissions and are presented in **Table 6-3**. However, due to the short-term need of natural gas-fired electricity generation required by the IESO to meet provincial electricity demand, the increase in GHG associated with electricity generation is expected to increase province-wide, in the short-term, until other sources of generation can be stabilized (**Figure 4-1).**

The predicted cumulative GHG emissions for the combined Project and EWCC case, do not meet the mandatory GHG reporting threshold of 10,000 tonnes CO_2e. However, since the facility is a designated facility (Electricity Generation), it will continue to report GHG to the provincial EPS program.

Table 6-3: 2026-2040 Estimated Cumulative (Site-Wide) GHG Emissions (Project + EWCC)

Year	Estimated EWCC GHG Emissions (t CO_2e /year)	Estimated Project GHG Emissions (t CO_2e /year)	Estimated Cumulative GHG Emissions (t CO_2e /year)
2026	3,719	3,568	7,287
2027	2,936	4,032	6,968
2028	2,299	3,141	5,439
2029	2,715	2,800	5,515
2030	2,004	1,998	4,101
2031	1,457	1,937	3,394
2032	2,029	2,614	4,643
2033	1,056	2,316	3,372
2034	1,076	1,844	2,920
2035	1,003	1,902	2,906
2036	1,153	1,950	3,103
2037	1,072	2,403	3,475
2038	1,101	2,788	3,889
2039	1,190	2,613	3,804
2040	1,077	2,860	3,937

6.4 Uncertainty

The primary uncertainty in this assessment relates to the estimated GHG emissions based on the IESO electricity projections. The GHG emissions estimated for this assessment are based on projected IESO demand; however, future demands are subject to change (lower or higher) and dependent on local and regional constraints on the provincial electricity grid. These constraints may include, but are not limited to, changes in electricity sources, climate changes, and population changes. Future demand is based on IESO projections which are independent of Capital Power operations.

7.0 Summary of Findings

The Project will result in increased GHG emissions. However, the Project is predicted to contribute ≤0.07% annually to the IESO's GHG projections for the Ontario Electricity Sector based on IESO's 2024 Annual Outlook. With the increasing electricity demand in the province as well as the reduced capacity of nuclear electricity generation, the IESO will be relying on natural gas electricity generation facilities to increase output to meet the increased demand. The Project will assist in meeting IESO forecasted increased demand, while contributing a small percentage of overall provincial electricity sector generated GHGs.

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Nigel Taylor, M.Sc., EP
Principal

8.0 References

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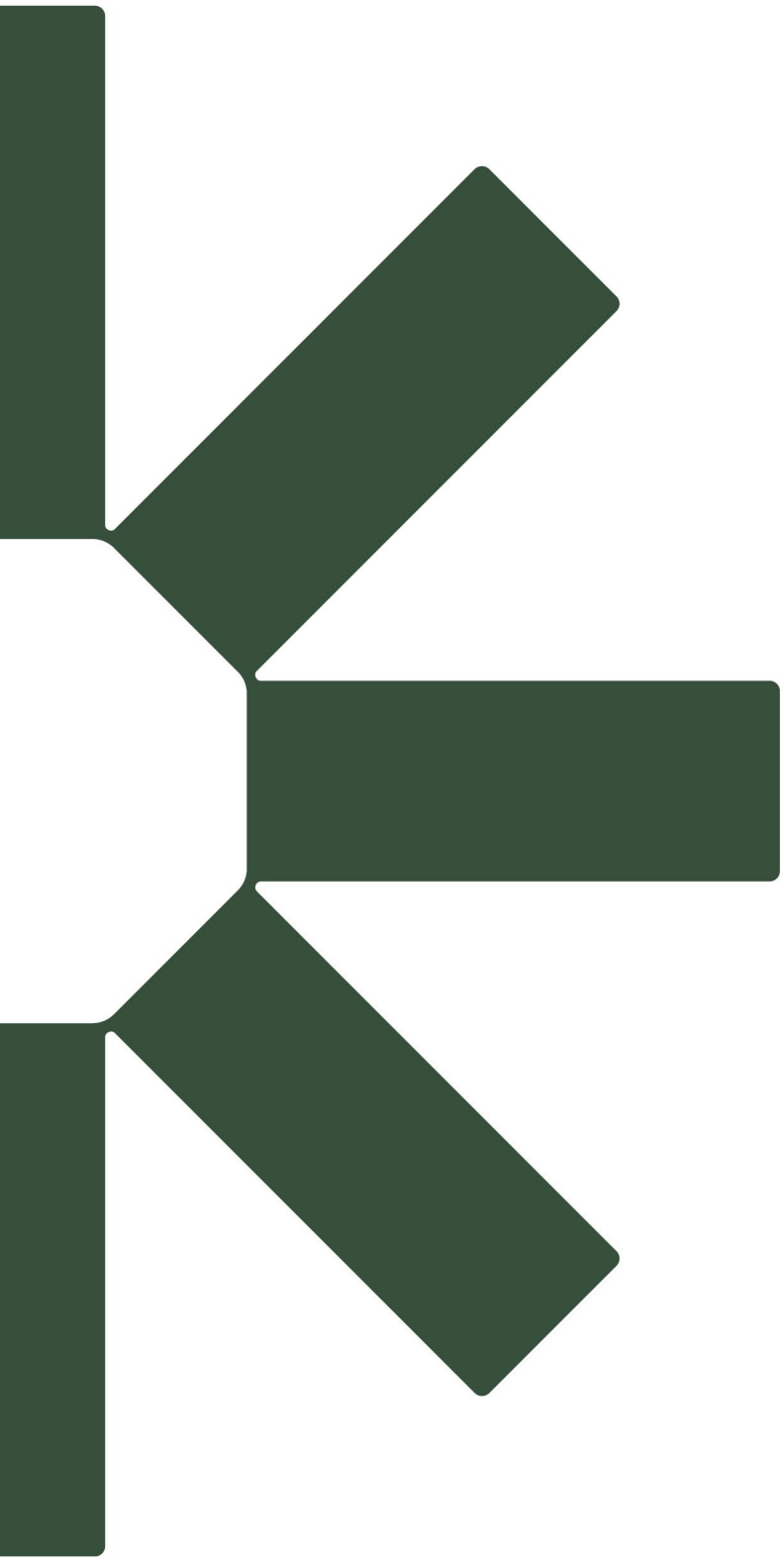

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