

**ENVIRONMENTAL COMPLIANCE APPROVAL**

NUMBER A-500-4130410774

Version: 1.0

Issue Date: April 20, 2022

*Pursuant to section 20.3 of the Environmental Protection Act, Revised Statutes of Ontario (R.S.O.) 1990, c. E. 19 and subject to all other applicable Acts or regulations this Environmental Compliance Approval is issued to:*

EAST WINDSOR COGENERATION LP

224 CADILLAC STREET  
WINDSOR ONTARIO  
N8Y 2S7

*For the following site:*

224 Cadillac Street , Windsor, Ontario.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s) 0473-82DSZK, issued on June 3, 2020.

*You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:*

- Two (2) natural gas fired gas turbine generators (GTGs), each with a nominal output rating of 42 megawatts of electrical power, with a maximum heat input capacity of 151.32 gigajoules per hour and equipped with dry low-NOx burners, each exhausting into the atmosphere through its own stack, having an exit diameter of 3.22 metres, extending 13.4 metres above the roof and 27.4 metres above grade; and
- Two (2) screw type fuel gas compressors, each rated at 800 kilowatts;

All in accordance with the Application for Approval (Air & Noise), dated May 14, 2021, and signed by Casey Chan of East Windsor Cogeneration LP, and all other supporting information, including the ESDM Report and the Acoustic Assessment Report.

## **DEFINITIONS**

*For the purpose of this environmental compliance approval, the following definitions apply:*

1. "Acoustic Assessment Report" means the report, prepared in accordance with Publication NPC-233 submitted in support of the application, that documents all sources of noise emissions and Noise Control Measures present at the Facility. It also means the acoustic assessment report prepared by Dillon Consulting Limited, dated May 2021 and signed by Amir Iravani;
2. "Approval" means this Environmental Compliance Approval, including Schedules 1, 2 and 3, the application and supporting documentation listed above;
3. "CEM System" means the continuous monitoring and recording system used to monitor and record the operation of the Combustion Turbine Facility, as described in the Company's application, this Approval, including Schedule 3, and in the supporting documentation referred to herein, to the extent approved by this Approval;
4. "Combustion Turbine Facility" means the two (2) gas turbines (GTs) described in the Company's application,

this Approval and in the supporting documentation referred to herein, to the extent approved by this Approval;

5. "Commencement of Commercial Operation" means the date when the Company first achieves Commercial Operation with the Ontario Power Authority as defined under section 2.6 of the Ontario Power Authority Combined Heat & Power (CHP) Contract dated October 16, 2006;
6. "Company" means East Windsor Cogeneration LP that is responsible for the construction or operation of the Facility and includes any successors and assigns in accordance with section 19 of the EPA;
7. "District Manager" means the District Manager of the appropriate local district office of the Ministry, where the Facility is geographically located;
8. "EPA" means the *Environmental Protection Act*, R.S.O. 1990, c.E.19, as amended;
9. "Equipment" means the Combustion Turbine Facility described in the Company's application, this Approval and in the supporting documentation referred to herein, to the extent approved by this Approval;
10. "ESDM Report" means the Emission Summary and Dispersion Modelling Report which was prepared in accordance with section 26 of O. Reg. 419/05 and the Procedure Document by Dillon Consulting Limited, dated May, 2021, submitted in support of the application, and includes any changes to the report made up to the date of issuance of this Approval;
11. "Facility" means the entire operation on the property where the Equipment is located;
12. "Fuel Flow Rate" means the flow rate of the fuel, expressed in cubic metres per second at standard temperature and pressure, or kilograms per second;
13. "Heat Output" means the total useful heat energy recovered from the Combustion Turbine Facility as heat, expressed in megawatts;
14. "Lower Heating Value" means the energy released during combustion of the fuel, excluding the latent heat content of the water vapour component of the products of combustion, expressed in megajoules per cubic metre at standard temperature and pressure, or megajoules per kilogram;
15. "Manual" means a document or a set of documents that provide written instructions to staff of the Company;
16. "Ministry" means the ministry of the government of Ontario responsible for the EPA and includes all officials, employees or other persons acting on its behalf;
17. "Noise Control Measures" means measures to reduce the noise emission from the Facility and/or Equipment including, but not limited to silencers, acoustic louvers, enclosures, absorptive treatment, plenums and barriers. It also means the noise control measures outlined in the Acoustic Assessment Report;
18. "NOx" means nitrogen oxides, including nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>);
19. "Power Output" means the electricity from the shaft power production (GTGs) of the Combustion Turbine Facility, expressed in megawatts;
20. "Publication NPC-233" means the Ministry Publication NPC-233, "Information to be Submitted for Approval of Stationary Sources of Sound", October, 1995, as amended;
21. "Publication NPC-300" means the Ministry Publication NPC-300, "Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning, Publication NPC-300", August 2013, as amended;
22. "Thermal Efficiency" means the thermal efficiency of the Combustion Turbine Facility calculated according to the formula described in Schedule 2 of this Approval;

## TERMS AND CONDITIONS

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*You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:*

### 1. OPERATION AND MAINTENANCE

1. The Company shall ensure that the Equipment is properly operated and maintained at all times. The Company shall:
  - a. prepare, prior to Commencement of Commercial Operation of the Equipment, and update, as necessary, a Manual outlining the operating procedures and a maintenance program for the Equipment, including:
    - i. routine operating and maintenance procedures in accordance with good engineering practices and as recommended by the Equipment suppliers;
    - ii. emergency procedures;
    - iii. procedures for any record keeping activities relating to operation and maintenance of the Equipment;
    - iv. procedures for recording of and responding to environmental complaints,
    - v. a list of personnel responsible for the operation of the Equipment, and
  - b. implement the recommendations of the Manual.

## **2. PERFORMANCE REQUIREMENTS:**

The Company shall ensure compliance with the following performance requirements:

1. The concentrations of NO<sub>x</sub>, carbon monoxide and sulphur dioxide in the undiluted gas emitted from the Combustion Turbine Facility are not greater than the limits specified in Schedule 1 .
2. The Thermal Efficiency of the Combustion Turbine Facility is not less than the efficiency specified in Schedule 1 .
3. The Company shall ensure:
  - a. at all times, that the noise emissions from the Facility comply with the limits set in Ministry Publication NPC-300; and
  - b. the Noise Control Measures are properly maintained and continue to provide the acoustical performance outlined in the Acoustic Assessment Report.

## **3. MONITORING:**

The Company shall monitor the emissions and operation of the Combustion Turbine Facility as follows:

1. Continuous Emission Monitoring: The Company shall install and maintain operational a CEM System, prior to Commencement of Commercial Operation of the Combustion Turbine Facility to continuously monitor and record the concentrations of nitrogen oxides, carbon monoxide and oxygen in the undiluted flue gases leaving the Combustion Turbine Facility stacks. The locations and the specifications of the CEM System are outlined in Schedule 3.
2. Thermal Efficiency Calculation Procedure: The Company shall determine the Thermal Efficiency of the Combustion Turbine Facility not later than September 30, 2010 and once every two (2) calendar years thereafter. The Company shall:
  - a. determine the parameters described in Schedule 2 during the Thermal Efficiency test for the Combustion Turbine Facility;
  - b. calculate the Thermal Efficiency of the Combustion Turbine Facility according to the formula described in Schedule 2;
  - c. prepare a summary of the results of the Thermal Efficiency test no later than three (3) months after completing the test. The summary shall indicate the Thermal Efficiency of the Combustion Turbine Facility and include all parameters described in Schedule 2; and
  - d. if the measured Thermal Efficiency is less than the anticipated Thermal Efficiency specified in Schedule 1

(with a tolerance of 0.05 multiplied by the anticipated Thermal Efficiency), notify the Ministry so that the concentration limits specified in Schedule 1 could be revised accordingly.

#### **4. RECORD RETENTION**

1. The Company shall retain, for a minimum of two (2) years from the date of their creation, all records and information related to or resulting from the recording activities required by this Approval, and make these records available for review by staff of the Ministry upon request. The Company shall retain:
  - a. all records on the maintenance, repair and inspection of the Equipment;
  - b. all records obtained by the CEM system;
  - c. all records obtained in the Thermal Efficiency testing; and
  - d. all records of any environmental complaints, including:
    - i. a description, time and date of each incident to which the complaint relates;
    - ii. wind direction at the time of the incident to which the complaint relates; and
    - iii. a description of the measures taken to address the cause of the incident to which the complaint relates and to prevent a similar occurrence in the future.

#### **5. NOTIFICATION OF COMPLAINTS**

1. The Company shall notify the District Manager, in writing, of each environmental complaint within two (2) business days of the complaint. The notification shall include:
  - a. a description of the nature of the complaint; and
  - b. the time and date of the incident to which the complaint relates.

## **REASONS**

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*The reasons for the imposition of these terms and conditions are as follows:*

1. Condition No. 1 is included to emphasize that the Equipment must be maintained and operated according to a procedure that will result in compliance with the EPA, the Regulations and this Approval.
2. Condition No. 2 is included to provide the minimum performance requirements considered necessary to prevent an adverse effect resulting from the operation of the Facility.
3. Condition No. 3 is included to require the Company to gather accurate information so that the environmental impact and subsequent compliance with the Act, the regulations and this Approval can be verified.
4. Condition No. 4 is included to require the Company to keep records and to provide information to staff of the Ministry so that compliance with the EPA, the Regulations and this Approval can be verified.
5. Condition No. 5 is included to require the Company to notify staff of the Ministry so as to assist the Ministry with the review of the site's compliance.

# APPEAL PROVISIONS

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In accordance with Section 139 of the *Environmental Protection Act*, you may by written notice served upon me and the Ontario Land Tribunal within 15 days after receipt of this notice, require a hearing by the Tribunal. Section 142 of the *Environmental Protection Act* provides that the notice requiring the hearing ("the Notice") shall state:

- I. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
- II. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the *Environmental Protection Act*, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

- I. The name of the appellant;
- II. The address of the appellant;
- III. The environmental compliance approval number;
- IV. The date of the environmental compliance approval;
- V. The name of the Director, and;
- VI. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

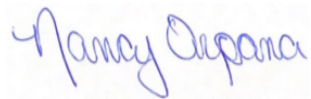
This Notice must be served upon:

Registrar* Ontario Land Tribunal 655 Bay Street, Suite 1500 Toronto, Ontario M5G 1E5 OLT.Registrar@ontario.ca	and	The Director appointed for the purposes of Part II.1 of the <i>Environmental Protection Act</i> Ministry of the Environment, Conservation and Parks 135 St. Clair Avenue West, 1st Floor Toronto, Ontario M4V 1P5
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**\* Further information on the Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or [www.olt.gov.on.ca](http://www.olt.gov.on.ca)**

The above noted activity is approved under s.20.3 of Part II.1 of the *Environmental Protection Act*.

Dated at Toronto this 20th day of April, 2022



Nancy Orpana

Director

appointed for the purposes of Part II.1 of the Environmental Protection Act

c: Casey Chan, EAST WINDSOR COGENERATION INC.

Patrick McGrath, Dillon Consulting Limited  
Jillian Hicks-McClary, Dillon Consulting Limited

The following schedules are a part of this environmental compliance approval:

# SCHEDULE 1

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## Emission and Thermal Efficiency Limits

<b>Parameter</b>	<b>Limit (1)</b>
Nitrogen Oxides (2)	32.6 ppmv (3)
Carbon Monoxide	60.0 ppmv (3)
Sulphur Dioxide	133.5 ppmv (3)
Thermal Efficiency	39.6 percent (4)

(1) The limits in this column apply to the operation of the natural gas turbine generators in the simple cycle scenario and are based on a 24 hour rolling average concentration.

(2) "Nitrogen oxides" means oxides of nitrogen, including nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>).

(3) "ppmv" means parts per million by volume on a dry basis normalized to 15 per cent oxygen.

(4) The calculated Thermal Efficiency shall be converted to Reference Conditions, which refers to a reference state of an ambient temperature at 15 degrees Celsius, 60 percent relative humidity and 101.3 kilopascals barometric pressure.

## SCHEDULE 2

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### THERMAL EFFICIENCY CALCULATIONS

#### PARAMETERS:

1. Power Output
2. Heat Output
3. Fuel Flow Rate
4. Lower Heating Value
5. (a) ambient air temperature (expressed in degrees of Celsius)  
(b) barometric pressure (expressed in kilopascal)  
(c) relative humidity (expressed in per cent)
6. Date, time and duration of test

#### FORMULA:

$$\text{Thermal Efficiency} = \frac{(\text{Power Output} + \text{Heat Output}) \times 100\%}{\text{Fuel Flow Rate} \times \text{Lower Heating Value}}$$

#### NOTE:

Thermal Efficiency testing should be conducted at maximum rating or at the maximum load achievable at the time of testing and shall employ an averaging time of not less than three hours.



# SCHEDULE 3

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## A - CONTINUOUS NITROGEN OXIDES MONITOR AND DATA RECORDER

**INSTALLATION:** The continuous nitrogen oxides monitor shall be installed at an accessible location where the measurements are representative of the actual concentrations of nitrogen oxides in the undiluted flue gases leaving the Combustion Turbine Facility stacks and shall meet the following installation specifications:

1. Range (parts per million, ppm): 0 -100
2. Calibration Gas Ports: close to the sample point

**PERFORMANCE:** The continuous nitrogen oxides monitor shall meet the following minimum performance specifications for the following parameters:

1. Span Value: (nearest ppm equivalent) 80% - 100% of Full Scale (FS) for each range
2. Relative Accuracy: the greater of  $\leq 10$  percent of mean value of reference method test data or PG7 low level relief (8 ppm)
3. Calibration Error: the greater of  $\leq 2$  percent of FS or 2.5 ppm absolute difference
4. System Bias: the greater of  $\leq 5$  percent of FS or 5 ppm average difference value
5. Procedure for Zero and Span Calibration Check: all system components checked
6. Zero Calibration Drift (24-hour): the greater of 2% of FS or 2.5 ppm absolute difference
7. Span Calibration Drift (24-hour): the greater of 2.5% of FS or 2.5 ppm absolute difference
8. Response Time (90 percent of full scale):  $\leq 200$  seconds
9. Operational Test Period:  $\geq 168$  hours without corrective maintenance

**CALIBRATION:** Daily calibration drift checks on the monitor shall be performed and recorded when the Combustion Turbine Facility is operating in accordance with the requirements of Report EPS 1/PG/7.

**DATA RECORDER:** The data recorder must be capable of registering continuously the measurement of the monitor with an accuracy of 0.5 percent of a full scale reading or better and with a time resolution of 2 minutes or better.

**RELIABILITY:** The monitor shall be operated and maintained so that accurate data is obtained during a minimum of 90 percent of the time for each calendar quarter during the first full year of operation, and 95 percent, thereafter when the Combustion Turbine Facility is operating.

## B - CONTINUOUS CARBON MONOXIDE MONITOR AND DATA RECORDER

**INSTALLATION:** The continuous carbon monoxide monitor shall be installed at an accessible location where the measurements are representative of the actual concentrations of carbon monoxide in the undiluted flue gases leaving the Combustion Turbine Facility stacks and shall meet the following installation specifications:

1. Range (parts per million, ppm): 0 -100
2. Calibration Gas Ports: close to the sample point

**PERFORMANCE:** The continuous carbon monoxide monitor shall meet the following minimum performance specifications for the following parameters:

1. Span Value: (nearest ppm equivalent) 80% - 100% of Full Scale (FS) for each range
2. Relative Accuracy: the greater of  $\leq 10\%$  of mean value of reference method test data or PG7 low level relief (8 ppm)
3. Calibration Error: the greater of  $\leq 2\%$  of FS or 2.5 ppm absolute difference
4. System Bias: the greater of  $\leq 5\%$  of FS or 5 ppm average difference value
5. Procedure for Zero and Span Calibration Check: all system components check
6. Zero Calibration Drift (24-hour): the greater of 2% of FS or 2.5 ppm absolute difference
7. Span Calibration Drift (24-hour): the greater of 2.5% of FS or 2.5 ppm absolute difference
8. Response Time (90 percent of full scale):  $\leq 90$  seconds

9. Operational Test Period:  $\geq 168$  hours without corrective maintenance

**CALIBRATION:** Daily calibration drift checks on the monitor shall be performed and recorded when the Combustion Turbine Facility is operating in accordance with the requirements of Report EPS 1/PG/7.

**DATA RECORDER:** The data recorder must be capable of registering continuously the measurement of the monitor with an accuracy of 0.5 percent of a full scale reading or better and with a time resolution of 2 minutes or better.

**RELIABILITY:** The monitor shall be operated and maintained so that accurate data is obtained during a minimum of 90 percent of the time for each calendar quarter during the first full year of operation, and 95 percent, thereafter when the Combustion Turbine Facility is operating.

### **C - CONTINUOUS OXYGEN MONITOR AND DATA RECORDER**

**INSTALLATION:** The continuous oxygen monitor shall be installed at an accessible location where the measurements are representative of the actual concentrations of oxygen in the undiluted flue gases leaving the Combustion Turbine Facility stacks and shall meet the following installation specifications:

1. Range (percentage): 0 - 20 or 0 - 25
2. Calibration Gas Ports: Close to the sample point

**PERFORMANCE:** The continuous oxygen monitor shall meet the following minimum performance specifications for the following parameters:

1. Span Value (percentage): 80% - 100% of Full Scale (FS) for each range
2. Relative Accuracy: the greater of  $\leq 10$  percent of mean value of reference method test data or PG7 low level relief (0.5% O<sub>2</sub>)
3. Calibration Error:  $\leq 0.5\%$  O<sub>2</sub>
4. System Bias: the greater of  $\leq 5$  percent of FS or 0.5% O<sub>2</sub> average absolute difference
5. Procedure for Zero and Span Calibration Check: all system components checked
6. Zero Calibration Drift (24-hour): 0.5% O<sub>2</sub>
7. Span Calibration Drift (24-hour): 0.5% O<sub>2</sub>
8. Response Time (90 percent of full scale):  $\leq 90$  seconds
9. Operational Test Period:  $\geq 168$  hours without corrective maintenance

**CALIBRATION:** Daily calibration drift checks on the monitor shall be performed and recorded when the Combustion Turbine Facility is operating in accordance with the requirements of Report EPS 1/PG/7.

**DATA RECORDER:** The data recorder must be capable of registering continuously the measurement of the monitor with an accuracy of 0.5 percent of a full scale reading or better and with a time resolution of 2 minutes or better.

**RELIABILITY:** The monitor shall be operated and maintained so that accurate data is obtained during a minimum of 90 percent of the time for each calendar quarter during the first full year of operation, and 95 percent, thereafter when the Combustion Turbine Facility is operating.