



Medium-Term 2 RFP Capacity and Energy Qualification Guidance Document

August 28, 2024

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Table of Changes

Version	Description of Change	Date
1	MT2 RFP Energy and Capacity Qualification Guidance Document	August 19, 2024
2	Description of the Must-Offer Obligation, under the definition of a Qualified Facility for the Capacity Stream (pp 2-3), revised to reflect the MT2 Capacity RFP	August 28, 2024

Introduction

After years of strong supply, the IESO's [Annual Planning Outlook](#) shows that Ontario is facing emerging electricity system needs as demand is forecast to increase steadily, generation contracts expire, nuclear refurbishments continue and the Pickering nuclear plant retires. Recognizing the necessity to address these needs in a timely, cost-effective and flexible manner, the IESO has engaged with stakeholders in the development of a [Resource Adequacy Framework](#). The IESO's Resource Adequacy Framework includes three mechanisms that will help address these needs in the short term, medium term, and long term; namely through the annual Capacity Auction, cadenced Medium-Term Requests for Proposals (RFP) and the Long-Term RFP.

Recently, the IESO concluded its first Medium-Term RFP (MT I RFP), Same Technology Upgrade, Expedited Long-Term 1 RFP (E-LT1 RFP) and Long-Term 1 RFP (LT1 RFP). Building on those procurements, the second Medium-Term RFP (MT2 RFP) will be divided into two streams: the Medium-Term 2 Capacity RFP (MT2(c) RFP) and the Medium-Term 2 Energy RFP (MT2(e) RFP) streams. The MT2(c) RFP is intended competitively procure contracts for existing capacity resources and the MT2(e) RFP is intended to competitively procure contracts for existing energy-generating resources (that are not dispatchable, capacity resources), with a five-year commitment period commencing on May 1st of either 2026, 2027, 2028 or 2029 (as selected by proponents) and ending immediately prior to the fifth anniversary of such date.

Purpose of Guidance Document

The purpose of this guidance document is to:

- 1) Provide stakeholders with an overview of the proposed Capacity Qualification approach for the MT2(c) RFP; and
- 2) Provide stakeholders with an overview of the proposed Energy Qualification approach for the MT2(e) RFP.

This document is provided for information purposes only and does not alter or affect any provisions of the form prescribed by the MT2(c) RFP/Contract or the MT2(e) RFP/Contract.

Qualified Facility

Capacity Stream

For the MT2(c) RFP, a Qualified Facility is an existing registered facility under the IESO Market Rules that is not registered as a variable or self-scheduling generation facility. An existing facility registered as a variable or self-scheduling generation facility under the IESO Market Rules is eligible to participate as a Qualified Facility under the MT2(e) RFP only. A Qualified Facility under the MT2(c) RFP will be required to meet the "Must-Offer Obligation" such that, on average over a settlement month, the quantity of its offers into the IESO Day-Ahead Market during qualifying hours would need

to be at least equal to or greater than its Adjusted Monthly Qualified Capacity¹ (such minimum, the “Minimum Offer Quantity”).

Energy Stream

For the MT2(e) RFP, a Qualified Facility is a registered facility under the IESO Market Rules that is a variable or self-scheduling generation facility. A Qualified Facility under the MT2(e) RFP will be required to maintain an Actual Performance Factor (on an average annual basis) of at least 80% of its Annual Average Imputed Production Factor.

Capacity Qualification

A key objective of the MT2(c) RFP is to ensure that each MW procured reflects capacity that will contribute towards meeting resource adequacy needs, regardless of the technology type. In support of this objective, the IESO will implement a capacity qualification process to derive the “Qualified Capacity” of a Qualified Facility.

The intent of establishing a Qualified Capacity approach for each Qualified Facility is to ensure that only those MWs that are reliably available to meet Ontario’s resource adequacy needs are contracted, while considering the unique characteristics of the underlying technology. This will create a level playing field between participating Qualified Facilities that will allow the IESO to secure capacity in a transparent, open, and fair manner.

MT2(c) RFP Product (Qualified Capacity)

The MT2(c) RFP is targeting the procurement of Qualified Capacity from Qualified Facilities for a five-year contract term. During the initial registration phase of the MT2(c) RFP, proponents will be invited to indicate the portion of the nameplate capacity of their Qualified Facility for both the summer and winter that will constitute the Qualified Facility’s reference seasonal ICAP². The IESO will then use historical data from each facility to determine Qualified Capacity seasonal values based on each Qualified Facility’s reference seasonal ICAP. These Qualified Capacity values will dictate, for each facility, the amount of capacity that is eligible to be the subject of a Medium-Term Capacity (MT2(c)) Contract.

Capacity Qualification Process Overview

In registering for the MT2(c) RFP, prospective proponents will be invited to submit reference seasonal ICAP values for their Qualified Facilities. The IESO will determine the portion of a Qualified Facility’s reference seasonal ICAP (summer and winter) that will be eligible to constitute Qualified Capacity (summer and winter). Qualified Facilities will be provided with seasonal Qualified Capacity values through the capacity qualification process, based on the general methodology in the formula below.

¹ Adjusted Monthly Qualified Capacity is the monthly qualified capacity adjusted proportionally for any Qualifying Hours in the Settlement Month that are the subject of a Planned Outage or Force Majeure Outage, as applicable

² ICAP: Installed Capacity

Qualified Capacity (MW) = ICAP (MW) x (1 – EFOR_d)

Where:

- Qualified Capacity is the amount, in MW, that a facility is qualified to offer into the MT2(c) RFP.
- **ICAP** (Installed capacity) is the capability, in MW, as specified by the proponent, reflecting the seasonal generation a facility can provide based on ambient weather conditions.
- **EFOR_d** is the Equivalent Forced Outage Rate on Demand.

ICAP Values

“Reference Seasonal ICAP” values for individual Qualified Facilities will be submitted by the prospective proponent to the MT2(c) RFP e-mail (MT2.RFP@ieso.ca) during the registration process by using the Prescribed Form: Registration Form. It is the responsibility of the facility representative to determine the most appropriate value based on the following guidance:

- Reference Seasonal ICAP values, at a maximum, could be equal to the maximum expected offer/bid capability of a facility given optimal operating conditions (i.e. ambient temperature, etc.). However, it is recommended that the likelihood of these conditions (or the ability to achieve this maximum capability) on the date of testing should be considered and accounted for in the submission of an ICAP value.
- Reference Seasonal ICAP values are expected to be consistent with other data submitted to the IESO through Form 1230³ or market registration (if this data exists) and any limitations imposed by applicable permits.
- Note that during capacity verification (including Capacity Check Tests) under the MT2(c) Contract, a Qualified Facility will be required to demonstrate output in accordance with its Monthly Contract Capacity.
- For existing off-contract storage facilities, ICAP should account for four (4) hours of energy duration.

Equivalent Forced Outage Rate on Demand (EFOR_d) – Capacity Stream Only

Equivalent Forced Outage Rate on Demand (EFOR_d) is an industry metric defined by IEEE⁴ and it represents the probability that a generating unit will not be available (completely or in part) during hours the unit is called upon to generate (i.e. during on-demand hours) due to forced outages and forced de-rates. It will be calculated for each facility based on the five (5) most recent years of data. EFOR_d is calculated using the following formula:

$$EFOR_d = \frac{FOH_d + EFDH_d}{SH + FOH_d} \times 100$$

Where:

- FOH_d is Forced Outage Hours on Demand
- EFDH_d is Equivalent Forced De-Rated Outage Hours on Demand, and

³ [form 1230](#) is used by generators for their annual reliability submissions as well as for any updates, when there are material changes. More information on Form 1230 can be found on: <https://www.ieso.ca/en/Sector-Participants/IESO-News/2020/03/Generators-and-transmitters-to-submit-reliability-assessment-forms-by-April-1>

⁴ For more information, refer to the IEEE Std 762-2006: IEEE Standard Definitions for Use in Reporting Electric Generating Unit Reliability, Availability and Productivity.

- SH is Service Hours

Where EFOR_d data is not available for a Qualified Facility, the IESO will calculate the EFOR_d by using the median EFOR_d of all registered facilities with the same registered technology type as the Qualified Facility.

Energy Qualification

In registering for the MT2(e) RFP, proponents will be invited to submit a nameplate capacity value for their Qualified Facility. The IESO will then determine maximum and minimum threshold values for the Qualified Facility's Average Annual Imputed Production Factor based on historical production data.

Maximum and Minimum Annual Average Imputed Production Factors – Energy Stream Only

The Maximum Annual Average Imputed Production Factor (MaxIPF_{AA}) and Minimum Annual Average Imputed Production Factor (MinIPF_{AA}) are based on historical production data for each Qualified Facility. Given the unique operating and participation methods of each facility type, the MaxIPF_{AA} and the MinIPF_{AA} will be based on the five (5) most recent years of historical data for each individual Qualified Facility. The IESO will calculate the annual Average Measured Production Factor (AMPF) based on Allocated Quantity of Energy Injected (AQEI) data for each of the last 5 years of operation, as well as the Nameplate Capacity of the Qualified Facility. The highest Average Measured Performance Factor from the last 5 years of operation will be the Max IPF_{AA} for the Qualified Facility in question. The MinIPF_{AA} will then be set at 75% of the MaxIPF_{AA}. At the time of proposal submission, Proponents will be required to submit 12 Monthly Imputed Production Factors that yield an Average Annual Production Factor (simple average of the 12 Monthly Production Factors) that is no less than the MinIPF_{AA} and no greater than the MaxIPF_{AA}. This 5 year sample size of data is expected to capture a good reflection of the Qualified Facilities' contributions and availability.

For each Qualified Facility under the MT2(e) RFP, the MaxIPF_{AA} will be determined as the maximum Average Annual Measured Production Factor over the five most recent years, where the Average Measured Production Factor (AMPF) in each year will be calculated by the IESO using the following equation:

$$AMPF = \frac{\sum AQEI_y}{Nameplate\ Capacity \times 8760}$$

Where:

- AQEI is the Allocated Quantity of Energy Injected (i.e. the facility's actual metered injection)
- Nameplate Capacity is the value submitted by the Proponent at the time of registration through the Prescribed Form: Registration Form.

For each Qualified Facility, the MinIPF_{AA}, will be determined as 75% of the MaxIPF_{AA} using the following equation:

$$MinIPF_{AA} = 0.75 \times MaxIPF_{AA}$$

In each year where AQEI data is not available for a Qualified Facility, the IESO will calculate the AMPF by using a zonal value equal to the median AMPF of all registered facilities with the same registered technology type in the same IESO Electrical Zone as the Qualified Facility. If no more than three registered facilities of the same technology type exist in the same IESO Electrical Zone, the IESO will use a provincial value equal to the median AMPF of all registered facilities of the same technology type in Ontario.

Notification of UCAP Values (Capacity Stream) and MaxIPF_{AA}/MinIPF_{AA} Values (Energy Stream)

The IESO will inform prospective Capacity Stream Proponents of their Summer and Winter Qualified Capacity values, and inform prospective Energy Stream Proponents of their Maximum Annual Average Imputed Production Factor and Minimum Annual Average Production Factor values via e-mail. Prospective Proponents will be given two weeks to provide notification to the IESO of any discrepancies or errors which they believe may exist with the provided values. If a prospective Proponent believes erroneous values have been issued, the IESO will consider any supplemental information provided by the prospective Proponent in respect thereof and discuss the basis of the determination in good faith. If a manifest error was made by the IESO in determining the issued values, the IESO will revise the issued values based on the methodology described herein, using any updated source data that has been accepted by the IESO, acting reasonably.



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