MANUAL

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Market Manual 12.0: Capacity Auctions

Issue 12.0

This market manual provides guidance to *market participants* on the operation of the *capacity auction* process

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This *market manual* may contain a summary of a particular *market rule*. Where provided, the summary has been used because of the length of the *market rule* itself. The reader should be aware, however, that where a *market rule* is applicable, the obligation that needs to be met is as stated in the "Market Rules". To the extent of any discrepancy or inconsistency between the provisions of a particular *market rule* and the summary, the provision of the *market rule* shall govern.

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Related Documents

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Reference (Section and Paragraph)	Description of Change
Section 3.3	Further requirements added to the enrollment of capacity import resources.
Section 5.2	Updated recommended completion time of registration process and added clarifying language for registration of physical and virtual HDR resources.
Section 5.3.1	Replacement of incorrect term used.
Section 5.3.3	Added clarifying wording to the testing of capacity storage resources, capacity dispatchable load resources and capacity import resources. Removed italics from term that is not defined.

Market Manuals

The *market manuals* consolidate the market procedures and associated forms, standards, and policies that define certain elements relating to the operation of the *IESO-administered markets*. Market procedures provide more detailed descriptions of the requirements for various activities than is specified in the "Market Rules". Where there is a discrepancy between the requirements in a document within a *market manual* and the "Market Rules", the "Market Rules" shall prevail. Standards and policies appended to, or referenced in, these procedures provide a supporting framework.

– End of Section –

1. Introduction

1.1 Purpose

The *IESO* will conduct *capacity auctions* for the purpose of acquiring *auction capacity* through a competitive auction process (Ch. 7, S.18.1 of the *market rules*). The "Capacity Auctions" manual is designed to provide *market participants* with an introduction to the *capacity auction*, operated by the *IESO* for the *IESO-administered markets* and the specific steps to be followed to conduct the auction. The manual also provides information on *market participants'* eligibility criteria, auction timelines, *energy market* participation, and settlement process.

1.2 Scope

Capacity auctions, with respect to *IESO-administered markets*, are comprised of the following aspects:

- *Market participant* authorization,
- Enrollment into an upcoming *capacity auction* by *capacity auction participants*,
- Submission of *capacity auction offers* by *market participants*,
- Processing of submitted *capacity auction offers* by the *IESO* and determining *capacity obligations*,
- Reporting obligations by the *IESO*,
- *Energy market* participation requirements, including registration of *demand response resources* solely for the purposes of the capacity auction
- Testing of *capacity auction resources,* and
- *Settlement process* and *capacity prudential support obligations.*

In support of these aspects, this manual details the conditions, actions, and timelines specific to the *capacity auction* by *market participants* and the *IESO*. This manual also details the *energy market* participation requirements, settlement process, and *capacity prudential support obligations* for the *capacity auctions* by *market participants* and the *IESO.* The manual is based on obligations expressed in the "Market Rules" (Ch. 2, Ch. 3, Ch. 7, and Ch. 9).

The document points to other *market manuals* and *market rules* that provide additional information.

1.3 Who Should Use This Manual

The "Capacity Auctions manual is meant to be used by all those undertaking the following activities:

- Applicants seeking authorization as a *capacity auction participant* and/or *capacity market participant* for *a capacity auction*;
- *Capacity auction participants* seeking to enroll *auction capacity* into the *capacity auction;*

- *Capacity auction participants* seeking to submit *capacity auction offers* into the *capacity auction*;
- *Capacity market participants* seeking to register *facilities* in order to meet their *capacity obligations* through the *energy market; and*
- *Capacity market participants* seeking to satisfy a *capacity obligation* by participating in the *energy market.*

1.4 Contact Information

Changes to this *market manual* are managed via the IESO Change Management process, which can be found on the Change Management Overview page (http://www.ieso.ca/sector-participants/change-management/overview). Stakeholders are encouraged to participate in the evolution of this *market manual* via this process.

To contact the IESO, you can email IESO Customer Relations at customer.relations@ieso.ca or use telephone or mail. Telephone numbers and the mailing address can be found on the Contact page (http://www.ieso.ca/corporate-ieso/contact). IESO Customer Relations staff will respond as soon as possible.

1.5 Applicability

Pursuant to *market rules* Chapter 7, section 18.1A, a *market participant* that participates in a *capacity auction* will, until the end of that *capacity auction's commitment period*, remain subject to those *market manual* provisions and corresponding *market rules* that were most recently in effect at the time of the holding of that *capacity auction* (except as provided by section 18.1A.3 in regards to *urgent amendments*). The versions of the manuals in effect at the start of the capacity auction offer submission window specify the rights and obligations related to participation, satisfaction of *capacity obligations,* and performance of other requirements directly related to participation (notwithstanding any amendments that may have been made subsequent to the relevant *capacity auction*).

Market participants consulting this *market manual* 12 must verify that they are consulting the version of the manual corresponding to the *capacity auction* in which they participated or wish to participate.

An archive of *market manuals* corresponding to particular *capacity auctions,* organized by date, can be found on the Market Rules and Manuals page (http://www.ieso.ca/en/Sector-Participants/Market-Operations/Market-Rules-And-Manuals-Library)

– End of Section –

2. Capacity Auction Overview

Capacity auctions acquire *auction capacity* for one *commitment period,* which consists of two *obligation periods,* referred to as summer and winter periods.

2.1 Capacity Auction Process

Figure 2-1 below shows a representative capacity auction process overview:

Figure 2-1: Capacity Auction Process

Market participants who wish to participate in the *capacity auction* are required to authorize as *capacity auction participants* and complete the capacity enrollment process in order to submit their *capacity auction offers* into the *capacity auction*. Upon validating all submitted offers, the *IESO* will process the offers, determine the clearing price for each electrical zone, determine the quantity of *auction capacity* cleared and prepare and *publish* the post-auction reports. All *capacity auction participants* that successfully obtain at least one *capacity obligation* are required to authorize as *capacity market participants,* and provide *capacity prudential support* as determined by the *IESO. Demand response resources* may receive a *capacity obligation* prior to registering *facilities.* During the *forward period*, these *demand response resources* must register *facilities* in the IESO registration system as described in "Market Manual 1.5: Market Registration Procedures" and assign the associated *demand response resource* to the *capacity obligation.*

2.2 Capacity Auction Timelines

Ontario's *capacity auction* follows the following timelines:

- The *IESO* will *publish* a pre-auction report no less than two months prior to the start of the offer submission window for the *capacity auction.*

- *Market participants* intending to participate in the *capacity auction* must complete their authorization as *capacity auction participants* at least 40 *business days* in advance of the *capacity auction*, or within such other period as set by the IESO in its sole and absolute discretion[1].

- *Market participants* intending to participate in the *capacity auction* are required to complete the capacity enrollment process and afterwards submit the *capacity auction deposit* amount at least 5 *business days* prior to the start of the offer submission window for the *capacity auction*.

- The *capacity auction* will accept offers from *capacity auction participants* on the date announced in the pre-auction report, starting at 09:00 EST and ending on the next *business day* at 23:59 EST. This period is referred to as the auction offer submission window. *Capacity auction participants* intending to participate in the *capacity auction* must have submitted their *capacity auction offers* to the *IESO* during the auction offer submission window.

- The *IESO* will process all submitted *capacity auction offers,* determine clearing prices and quantities, and prepare the post-auction reports within four *business days*, following the day on which the auction offer submission window closes.

- The *IESO* will *publish* both public and confidential reports post auction.

The following figure illustrates the *capacity auction* timelines:

[1] Should the IESO determine another period for *market participants* to complete authorization as a *capacity auction participant,* this period will be published in the "Auction Timelines" posted on the IESO Website.

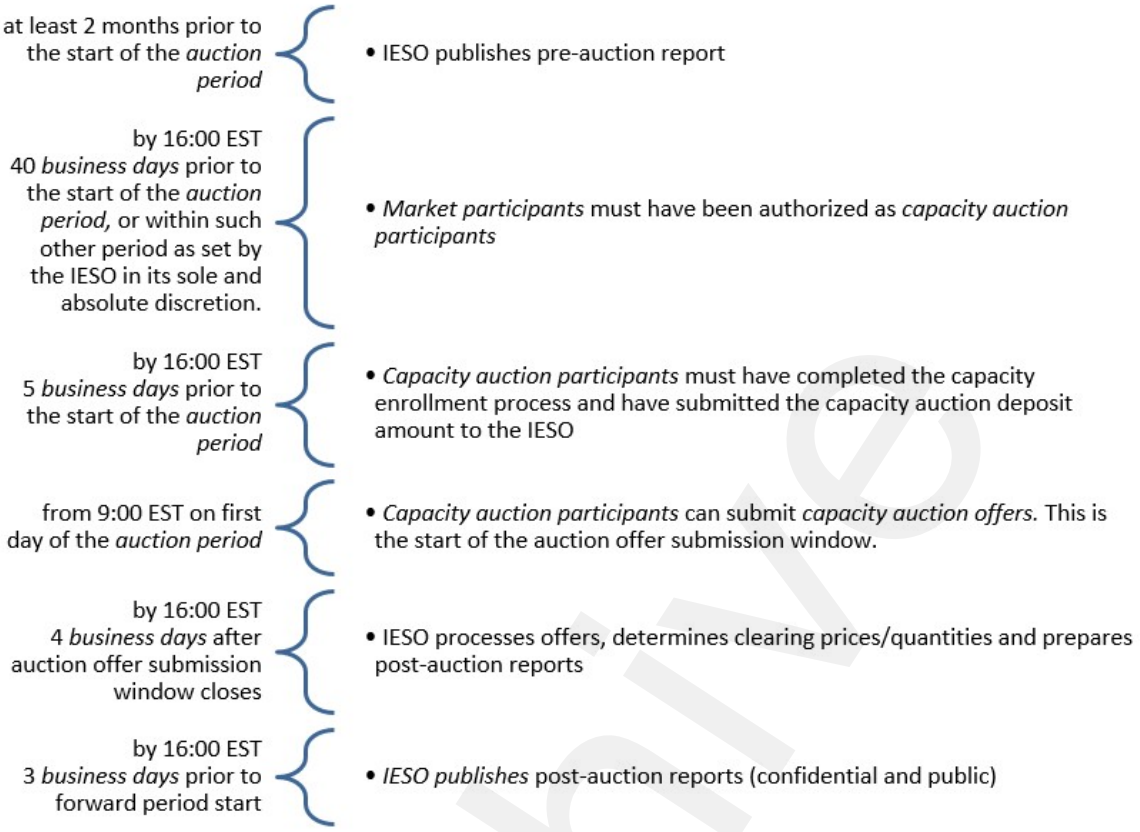

Figure 2-2: Capacity Auction Timeline

2.3 Commitment Periods and Obligation Periods

The c*ommitment period* is the period of time for each *capacity auction* over which it secures *auction capacity*. It consists of two *obligation periods,* which are the periods of time for which a *capacity market participant* is required to satisfy its *capacity obligation* through the day-ahead commitment process and energy market.

There are two seasonal *obligation periods* for a *capacity auction*, defined as:

- Summer – May 1 to October 31
- Winter – November 1 to April 30

Forward period means the period of time immediately following a *capacity auction*, to the commencement of an *obligation period.* The length of the forward period will vary depending on the date of a *capacity auction* relative to its *obligation period*.

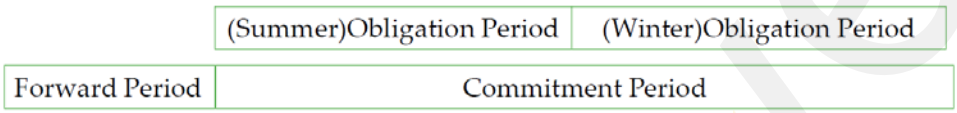

Figure 2-3: Periods of time related to *capacity auctions*

Capacity auction participants may choose to submit *capacity auction offers* into either one or both of the *obligation periods*. The auction for both *obligation periods* requires separate *capacity auction offers* for each of the *obligation periods*. The two *obligation periods* will be evaluated individually using the submitted *capacity auction offers* compared to pre-determined demand curves, and will therefore have their own *capacity auction clearing prices* and quantities. Participants will receive a set of separate *capacity obligations* for each period, where applicable, if they successfully clear the auction. *Capacity auction participants* who secure a position in a *capacity auction* are required to complete their authorization and registration requirements, as applicable, during the forward period, as explained in Section 5 of this manual.

2.4 Availability Window

The summer *availability window* will consist of *business days* from 12:00 to 21:00 EST (hour ending 13 to hour ending 21) and the winter *availability window* will consist of *business days* from 16:00 to 21:00 EST (hour ending 17 to hour ending 21).

Capacity market participants satisfying a *capacity obligation with demand response resources* will receive an availability payment associated with their *capacity obligation(s).* Availability payments may be offset with non-performance charges in accordance with "Market Manual 5.5: Physical Markets Settlements Statements" during the associated *obligation period* (Ch. 7, S. 19.5.1 and 19.4.1 of the *market rules*).

Capacity market participants satisfying a *capacity obligation with capacity generation resources, capacity storage resources* and *capacity import resources* will receive an availability payment associated with their *capacity obligation.* Availability payments may be offset with non-performance charges in accordance with "Market Manual 5.5: Physical Markets Settlements Statements" during the associated *obligation period* (Ch. 7, ss. 19.7.1, 19.9.1, and 19.11.1 of the *market rules*).

2.5 Demand Curve Elements

A *capacity auction* demand curve is a representation of the IESO's willingness to acquire *auction capacity*; it defines the prices that the IESO is willing to pay for varying levels of *auction capacity* along the curve. The shape of the demand curve impacts the quantity (MW; the X-axis) and price ($/MW-day; the Y-axis) of *auction capacity* that will be acquired through an auction. The *capacity auction* uses a downward-sloping demand curve defined by the following parameters and illustrated in Figure 2-4 below:

- Target capacity
- Reference price
- Maximum and minimum auction clearing prices
- Capacity limits

Given the dynamic nature of the *energy market*, the *IESO* will review the demand curve parameters at least once every three years to ensure it is reflective of the current market conditions and system needs.

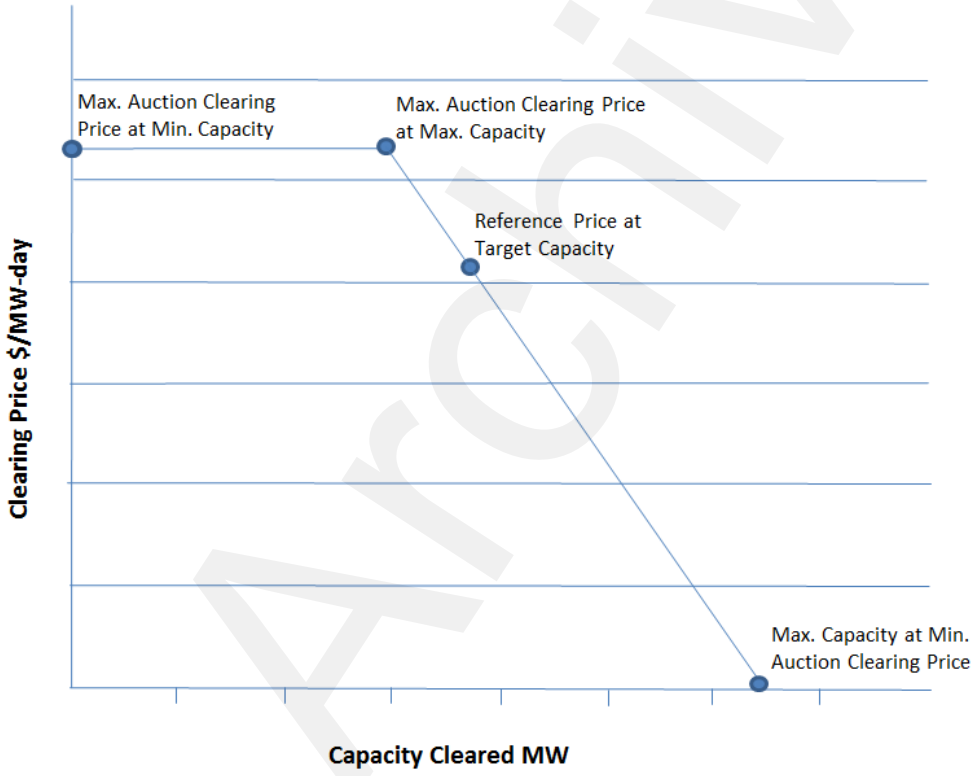

Figure 2-4: Downward Sloping Demand Curve

The key reference points on the downward-sloping curve shown above are further elaborated in the sections below.

2.5.1 Target Capacity

The *target capacity* for each *obligation period* will be determined based on the reliability need or any additional need identified by the *IESO*. The *target capacity* for each *obligation period* shall be *published* by the *IESO* in the pre-auction report (Ch. 7, S.18.5.2 of the *market rules*).

2.5.2 Reference Price

The *capacity auction reference price* represents the price at which resources are incented to enter the market and recover the necessary costs to make their capacity available, recognizing their revenue opportunities and avoided costs in the *energy market*. The reference price is directly associated with the target capacity as another key reference point in the demand curve. (Ch. 7, S. 18.5.2 of the *market rules*).

The *capacity auction reference price* for each *obligation period* shall be *published* by the *IESO* in the pre-auction report (Ch. 7, S.18.5.2 of the *market rules*).

2.5.3 Maximum and Minimum Auction Clearing Price

The maximum *capacity auction clearing price* is the maximum price that a *capacity market participant* may be paid for *auction capacity*. The maximum *capacity auction clearing price* is set at a multiple of 1.25 times the *capacity auction reference price*.

The minimum *capacity auction clearing price* is $0/MW-day.

The maximum and minimum *capacity auction clearing price* for each *obligation period* shall be *published* by the *IESO* in the pre-auction reports.

2.5.4 Capacity Limits

The capacity limits used in the demand curve are:

- the minimum capacity,
- the maximum capacity at maximum *capacity auction clearing price*, and
- the maximum capacity

The minimum capacity is the minimum amount of *auction capacity* that the *IESO* will clear through a *capacity auction* for each *obligation period*.

The maximum capacity at maximum *capacity auction clearing price* will be determined based on the following formula:

$$MaxCap(MACP) = \frac{RP \times TC}{MaxP}$$

Where:

- MaxCap(*MACP*) is the maximum capacity at the maximum *auction clearing price*,
- RP is the *capacity auction reference price*,
- TC is the *target capacity*, and
- MaxP is the maximum *capacity auction clearing price*.

The maximum capacity is the maximum amount of *auction capacity* which the *IESO* will clear through the auction. The maximum capacity is determined by forming a straight line between the points defined by the maximum capacity at the maximum *capacity auction clearing price* and the *target capacity* at the *capacity auction reference price,* and extending this line to the price of

$0/MW-day. The capacity limits for each *obligation period* shall be *published* by the *IESO* in the pre-auction report (Ch. 7, S.18.5.2 of the *market rules*).

2.6 Zonal Constraints

The ten electrical zones of Ontario are used to acquire *auction capacity* for the *capacity auction*. The IESO establishes zonal requirements or limits that will be used to set any minimum and maximum capacity limits, respectively, that can be cleared in the *capacity auction* for each zone.

Each zone has a set of *capacity auction zonal constraints* defined. These include

- minimum amount of *auction capacity* to be acquired
- total maximum amount of *auction capacity* that can be acquired
- maximum amount of *auction capacity* from resources not revenue-metered by the IESO (i.e. virtual resources) that can be acquired. This limit will not set the zonal *capacity auction clearing price*.

The *capacity auction* will establish an Ontario-wide *capacity auction clearing price* as well as possible zone specific *capacity auction clearing prices*. The *IESO* shall *publish capacity auction zonal constraints* in the pre-auction reports.

2.7 Capacity Import Constraints

The external interfaces between the IESO-controlled grid and neighbouring systems may be used to acquire *auction capacity* for the *capacity auction.* The IESO will establish maximum *capacity import* limits that can be cleared in the *capacity auction.* These limits apply to *capacity import resources.*

Capacity auction offers associated with eligible c*apacity import resources* will clear the *capacity auction* subject to the following constraints*:*

- maximum amount of *auction capacity* that may be provided by all *capacity import resources.* When this constraint is binding, it will limit the amount of *capacity import resources* that clear, however, it will not determine the *capacity auction clearing price,* and
- maximum amount of *auction capacity* that may be provided by all *capacity import resources* at each external interface. When this constraint is binding, it will limit the amount of *capacity import resources* that clear at each external interface, however, it will not determine the zonal *capacity auction clearing price.* External interfaces not listed in the pre-auction report indicate that they border upon a jurisdiction where there is no associated agreement between the relevant balancing authorities. [2]

Capacity import resources will be subject to the zonal constraints in the external interface's bordering electrical zone, as described in Section 2.6. As such, there will be no price separation for *capacity import resources* and resources within the electrical zone the interface borders. The *IESO* shall *publish* capacity import constraints in the pre-auction reports.

– End of Section -

[2] Agreements between the relevant balancing authorities will, at a minimum set out requirements for firm transactions and confirmation that capacity transacted as a result of a capacity auction will be coordinated between the balancing authorities (e.g. removed from applicable adequacy assessments).

3. Pre-Auction Requirements

In order to conduct the *capacity auction* in a consistent and transparent manner, the *IESO* and the *market participants* must satisfy certain pre-auction obligations.

The *IESO* shall prepare a pre-auction report containing *capacity auction* related information and *publish* it in advance of the auction, as explained in Section 3.1 below. There are pre-auction authorization, enrollment, and *capacity auction deposit* requirements for *market participants* who wish to participate in the *capacity auction,* as further explained in below.

3.1 Pre-Auction Reporting Obligations

Prior to the *capacity auction*, the *IESO* shall *publish* a pre-auction report to include the following reference points, for both *obligation period*s (Ch. 7, S. 18.5.2 of the *market rules*):

- *Target capacity*
- *Capacity auction reference price*
- Minimum and maximum *capacity auction clearing prices*
- Minimum and maximum *auction capacity* to be secured
- Maximum *auction capacity* to be secured at the maximum *capacity auction clearing price*
- Zonal limitations for each electrical zone, as explained in Section 2.6 of this manual
- *Capacity import* constraints as explained in Section 2.7 of this manual

In addition to these reporting obligations, the *IESO* will also *publish:*

- the timelines for *capacity auction participants* to enroll potential *capacity auction resources* and the amount of *auction capacity* that they are willing to provide for each potential *capacity auction resource*
- the dates that the *IESO* will conduct the *capacity auctions* as well as the date by which the *IESO* will *publish* the public and confidential post-auction reports (Ch. 7, S. 18.5.4 of the *market rules*); and
- a link to a mapping tool to assist with the determination of which zone *capacity auction resources* are located, based on their physical address.

3.2 Pre-Auction Authorization Process

All prospective participants who wish to participate in the *capacity auction* are required to authorize as *capacity auction participants* (Ch. 2, S. 2.1.1.1.11 and 2.1.1.1.12 of the *market rules*) through the *IESO*'s market registration process. Market authorization processes are further detailed in "Market Manual 1.5: Market Registration Procedures".

In addition to authorization as a *capacity auction participant,* market participants may be authorized as one of the following classes described in Market Manual 1.5, as applicable:

- Generator
- Load
- Energy Trader

3.3 Capacity Enrollment

Capacity auction participants who wish to participate in a given *capacity auction* shall identify to the *IESO* the eligible *capacity auction resource(s)* with which they would intend to provide *auction capacity* for the duration of the relevant *obligation period,* as well as the maximum quantity of *auction capacity* that they might wish to provide from each individual eligible *capacity auction resource*. This submitted quantity shall be used to set the *capacity auction participant's enrolled capacity* for that auction. The *enrolled capacity* represents the maximum *auction capacity* that can be offered by the *capacity auction resource* in a given *capacity auction* for either obligation period. The IESO will communicate the submission deadline via the pre-auction report.

Each potential *capacity auction resource* will represent a single resource according to the registration procedures described in "Market Manual 1.5: Market Registration Procedures".

Authorized *capacity auction participants* are required to submit, via Online IESO[3], the following information in order to complete the capacity enrollment process:

- The amount of potential *auction capacity*, not less than 1 MW per *capacity auction resource*, that they could reliably provide, and may be willing to offer, in each *obligation period*,
- The *obligation period(s)* for which they may wish to submit *capacity auction offers*. Participants may choose to submit *capacity auction offers* for one or both *obligation periods*,
- The type of *capacity auction resource* (e.g. *capacity import resource*, *capacity generation resource, hourly demand response resource*, *capacity dispatchable load resource,* etc.) that will satisfy a *capacity obligation* during the *commitment period* and for *hourly demand response resources,* the obligation type (e.g. physical or virtual) and contributor type (e.g. Residential or Commercial & Industrial). Refer to Section 5.3.2 for details on submitting contributor data information.
- If the resource type is a *capacity generation resource* or *capacity storage resource*, a signed attestation declaring that the *generator* that will deliver *auction capacity* meets the requirements of a *capacity auction eligible generation resource* or *capacity auction eligible storage resource,* respectively, as set out in Chapter 11, Definitions.
- For eligible *capacity auction resources* located in Ontario:
    - the *registered facility* and associated resource that will satisfy the *capacity obligation*; or
    - the zonal location of *demand response resources* and/or contributors for which they are willing to submit offers. Participants may choose from the ten electrical zones to submit *capacity auction offers*. The *IESO* shall *publish* zonal constraints in the pre-auction reports, as explained in Section 3.1 of this manual.
- For *capacity import resources:*
    - the external interface that will be used to deliver the *auction capacity;* and

[3] Online IESO is an online tool for *market participants* to submit data to the *IESO*; accessible at Online IESO (https://online.ieso.ca).

- a signed attestation acknowledging that all eligibility requirements have been met, as set out in Chapter 11 of the *market rules* and that has taken such actions as are necessary in order to ensure that:
  - capacity imports related to a capacity obligation will be offered into Ontario's energy market with firm 7F transmission service; and
  - the planning authority(ies) responsible for adequacy assessment(s) will remove any MW related to a capacity obligation associated with from its adequacy assessments

- Confirmation of having submitted the *capacity auction deposit* as determined by the *IESO*, further explained in Section 3.4 of this manual.

Based on the information provided, the *IESO* will:

- Verify the *capacity auction participant* has completed the authorization process as outlined in Section 3.2 of this manual, and
- Ensure the *capacity market participant* has not been disqualified from auction participation, due to failure to reduce consumption or supply energy pursuant to a dispatch or activation notice (Ch.7, ss. 19.4.8, 19.5.4, 19.7.4,19.9.4, and 19.11.4 of the *market rules*).

3.4 Capacity Auction Deposit

All *capacity auction participants* wishing to submit *capacity auction offers* into the *capacity auction* are required to provide to the *IESO* a *capacity auction deposit*, no less than five (5) *business days* prior to the date which the *capacity auction* is to be conducted (Ch. 7, S.18.2.1 of the *market rules*).

The purpose of this deposit is to establish the creditworthiness of the *capacity market participant* for auction activities. The pre-auction deposit is also intended to ensure that the *capacity auction participant* fulfills any post-auction and *forward period* obligations.

The *IESO* will calculate the *capacity auction deposit* amount a *capacity auction participant* is required to submit for each *obligation period*, based on the amount of *enrolled capacity* in each *obligation period* of the *capacity auction* (Ch. 7, S. 18.3.1 of the *market rules*).

The formula for calculating a *capacity auction participant's* pre-auction deposit amount in a *capacity auction* is as follows:

Capacity auction deposit = 3% * (total *enrolled capacity* * maximum auction clearing price per MW-day) * number of *business days* in *obligation period*

The *IESO* may impose a higher *capacity auction deposit* requirement depending on creditworthiness of the *capacity auction participant* in the *IESO-administered market*.

For *capacity obligation* transfers, the *IESO* will determine and notify the *capacity transferee* if additional *capacity auction deposit* funds are required, as determined in Section 8, to complete a transfer.

If additional *capacity auction deposit* funds are required, the formula for determining a *capacity transferee's* deposit for a transfer is as follows:

Capacity auction deposit = 3% * (transferred *auction capacity* * maximum auction clearing price per MW day) * number of *business days* in *obligation period*

However, the additional *capacity auction deposit* requirements from a transfer request may be satisfied by the *capacity transferee's* existing *capacity auction deposit*, if it has not been refunded back to the *capacity transferee*.

All *capacity auction participants* are required to submit a *capacity auction deposit* in one (or a combination of both) of the following forms:

- Irrevocable commercial letter of credit, in a form acceptable to the *IESO* (Ch.7, S.18.4.2 of the *market rules*), provided by an *IESO*-approved bank (Ch.7, S.18.4.1.1 of the *market rules*), or
- Cash deposits made to the *IESO* by or on behalf of the authorized *market participant* (Ch.7, S.18.4.1.2 of the *market rules*). The *IESO* will not pay interest on cash deposits.

Letters of credit must be submitted to the *IESO* in original hard copy form.

Capacity auction deposits by cash may be submitted by *electronic funds transfer* to an *IESO*-designated account. The *IESO* will verify all submitted *capacity auction deposits* for participation in a *capacity auction* by:

- Reviewing the amount and type of deposit,
- Verifying that it meets the submission timing requirements, and
- Ensuring applicants are authorized as *capacity auction participants*.

The *IESO* will release the *capacity auction deposit*, at the *capacity auction participant's* request, within five *business days* for:

- An unsuccessful *capacity auction participant* after the publication date of the post-auction report;
- A successful *capacity auction participant* when the *capacity auction participant* is authorized as a *capacity market participant*, sufficient *capacity prudential support* is posted, and a *facility* is registered to satisfy each of the *capacity auction participant's capacity obligations* for each *obligation period*;

Upon completion of a successful *capacity obligation* transfer, the *IESO* will release all or a portion of a *capacity transferor*'s *capacity auction deposit* at the *capacity transferor's* request, within five (5) *business days* under the following conditions:

- The *IESO* will release the *capacity auction deposit* if the *capacity transferor*'s remaining *capacity obligations* are 0 MW; or has at least one resource registered and sufficient *capacity prudential support* is posted to meet the *capacity auction participant*'s *capacity obligation* in each *obligation period* in each of the cleared electrical zones; or
- The *IESO* will release a portion of the *capacity auction deposit*, if the above condition is not met, determined by the following formula:

Partial *capacity auction deposit* release = 3% * (transferred *auction capacity* * maximum auction clearing price per MW day) * number of *business days* in *obligation period*

– End of Section –

4. Auction Mechanics

The *capacity auction* mechanics involves a 3-stage process, as displayed in Figure 4-1 below:

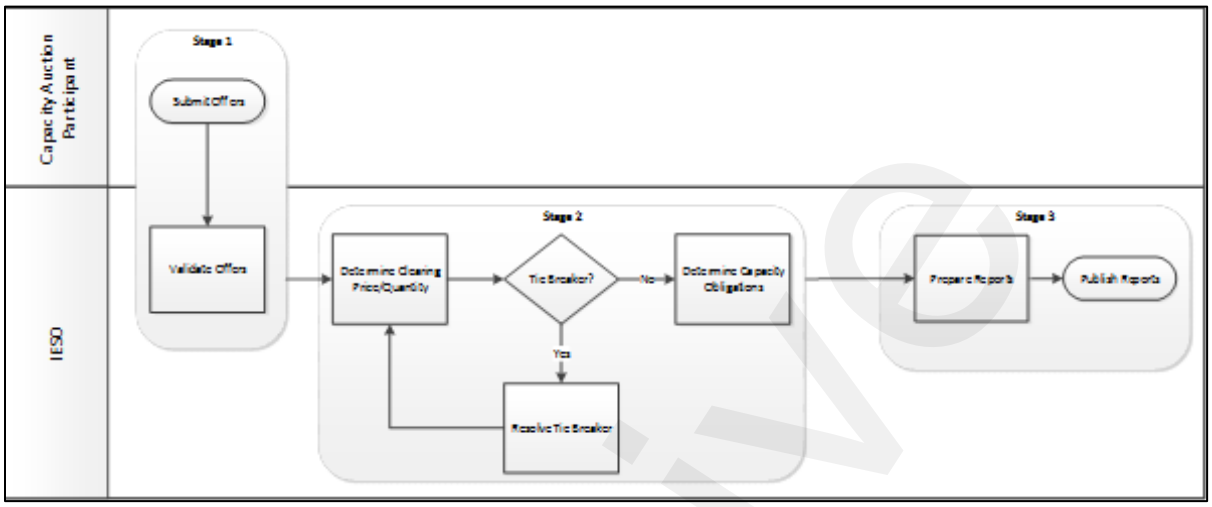

Figure 4-1: Capacity Auction Mechanics Overview

4.1 Stage 1: Offer Submission and Validation

Capacity auction participants are required to submit *capacity auction offers* via Online IESO, following the auction timelines detailed in Section 2 of this manual. Each *capacity auction participant* may submit a *capacity auction offer* associated with each potential *capacity auction resource* identified during the capacity enrollment process for any quantity between 1 MW and the *enrolled capacity* in the pre-auction process, using offer laminations reflecting the price of providing the various levels of capacity.

Capacity auction offers must be submitted on an *obligation period* basis. A complete *capacity auction offer* includes a set of up to 20 monotonically increasing *price-quantity pairs* with the total offered quantity across all laminations equal to or less than the *enrolled capacity* for the potential *capacity auction resource*. The *capacity auction offer* quantity must increase with every new lamination added to an offer set (Ch.7, S. 18.6.3.2 of the *market rules*).

A capacity auction offer will apply for the entire *obligation period*. The prices offered represent the minimum price at which the participant is willing to provide each incremental quantity of *auction capacity*.

A capacity auction offer must also specify, for each *price-quantity pair*, whether the entire *auction capacity* represented in the lamination must be cleared in full or whether it may be partially cleared (Ch.7, S. 18.6.3.4 of the *market rules*). A full flag indicates to the *IESO* that the *capacity auction participant* is only willing to clear the auction with the full amount of *auction capacity* offered in that lamination. A partial flag indicates to the *IESO* that the *capacity auction participant* is willing to clear the auction in 0.1 MW increments of the offer in that lamination.

The participant must be ready to provide *auction capacity* in the amount of their *capacity obligation* by the first day of the *obligation period* or be subject to non-performance charges as explained in Section 6 of this manual.

4.2 Stage 2: Auction Clearing

Once the *capacity auction offer* submission window closes, the *IESO* will review all *capacity auction offers* to determine the *capacity auction clearing price* for each zone, as per the timelines detailed in Section 2 of this manual.

For each *obligation period*, the *IESO* shall determine for each *obligation period* the *capacity obligation* for each *capacity auction participant's capacity auction resource* (Ch. 7, S. 18.7.3 of the *market rules*), following the process stated below.

The *IESO* will consider all *capacity auction offers* and clear them against a downward-sloping demand curve, utilizing an optimization model to maximize the social welfare (i.e. the area under the demand curve less supply costs). This clearing process will respect all *capacity auction zonal constraints* and capacity import constraints. The clearing process will determine the *capacity auction clearing price* for each zone. When there is a *capacity auction offer* not selected, either partially or in full, due to the total maximum *capacity auction zonal constraint*, the *capacity auction clearing price* for that zone will be set at the lesser of:

- the price associated with the next economic quantity from a *capacity auction offer* in the same zone that would have cleared but for the total maximum *capacity auction zonal constraint*; or
- the Ontario-wide *capacity auction clearing price*.

The Ontario-wide *capacity auction clearing price* will be set equal to the price associated with demand curve for the quantity equal to the last-cleared *price-quantity pair* associated with a *capacity auction offer*. The total quantity cleared through a *capacity auction* may clear above the demand curve where doing so will maximize the overall objective function. An example of the auction clearing process, including zonal limitations, is shown in Figure 4-2.

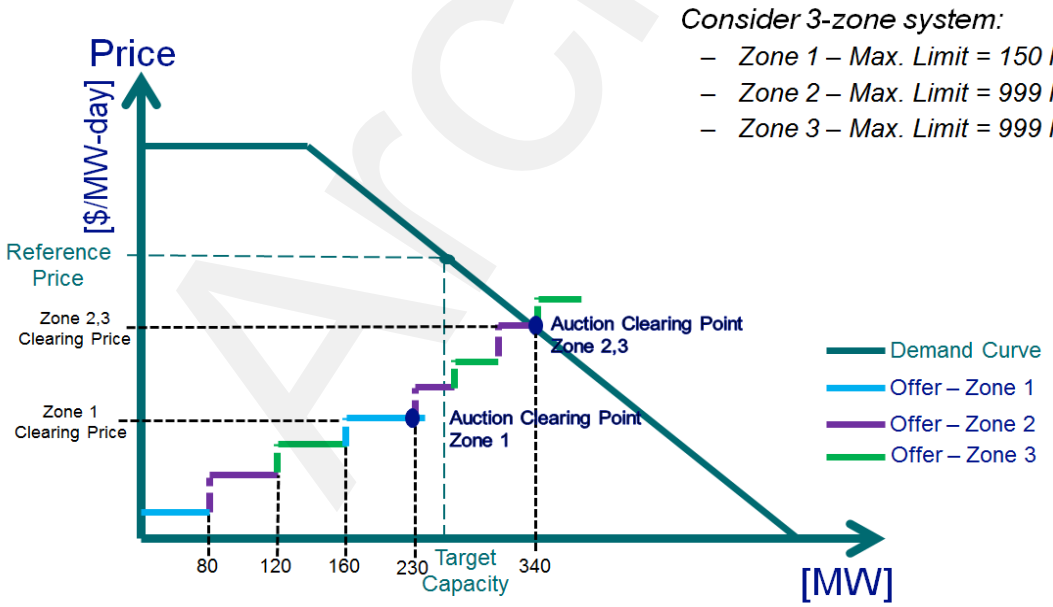

Figure 4-2: Auction Selection Process with Zonal Limits

In the example illustrated in Figure 4-2, Zone 1 has a total maximum *capacity auction zonal constraint* of 150 MW. All offers are stacked by increasing price against the demand curve for the *obligation period*. As shown in the figure, after clearing the first offer of 80 MW from Zone 1, the auction engine can only partially clear the second offer (70 MW) at which point the total cleared

quantity in Zone 1 is equal to the total maximum *capacity auction zonal constraint*. If the auction engine determines that the un-cleared quantity from the second offer in Zone 1 would have cleared but for the total maximum *capacity auction zonal constraints*, a zonal *capacity auction clearing price* will be determined, in the manner described above. The overall procurement will continue and the *capacity auction offers* will clear until the intersection with the demand curve at 340 MW, which will also set the *capacity auction clearing price* for Zone 2 & 3, and is also referred to as the Ontario-wide *capacity auction clearing price*.

If the *IESO* receives two or more *capacity auction offers* at the same price for the last available quantity, the *capacity auction offer* with the earlier time stamp[4] shall be selected as the successful *capacity auction offer* (Ch.7, S. 18.7.5 of the *market rules*).

Once the *capacity auction clearing price* and quantity are set, the *IESO* shall determine for each *obligation period*, the *capacity obligations* for each *capacity auction participant* and its *capacity auction resource(s)* (Ch. 7, S. 18.7.4 of the *market rules*). Resources with a *capacity obligation* will be designated a *capacity auction resource* for the duration of the *commitment period.*

4.3 Stage 3: Post-Auction Reporting Obligations

Once the auction has been cleared and *auction capacity* quantities and clearing prices are determined for all zones, the *IESO* will prepare public and private reports to communicate this information, as explained below.

*T*he *IESO* shall *publish* public reports containing the following information for each *obligation period* (Ch.7, S. 18.8 of the *market rules*):

- The *capacity auction clearing price* for each zone;
- The amount of *auction capacity* acquired through the auction for each zone by obligation type (i.e. physical or virtual);
- The successful *capacity auction participants* that received a *capacity obligation* and their respective total *capacity obligations* in each zone*;* and
- The total *enrolled capacity* of each *capacity auction participant* by obligation type and zone or external interface, as applicable.

The IESO shall *publish* a summary of the Ontario-wide *capacity auction clearing price* and the *auction capacity* quantity across all zones.

The *IESO* will also issue confidential post-auction reports to each *capacity auction participant* with the *capacity obligation(s)* for each *capacity auction resource,* the *capacity auction clearing price* applicable to the *capacity auction resource,* and *obligation period* (Ch.7, S. 18.8.2 of the *market rules*).

If *capacity obligations* are modified as a result of a buy-out or *capacity obligation* transfer, the *IESO* will prepare public and confidential reports to communicate the information, as explained above.

– End of Section –

[4] A time stamp refers to the time recorded by Online IESO when a *capacity auction participant* submits an offer during the 2-*business day* offer submission window.

5. Post-Auction Requirements

5.1 Participant Authorization

There are post-auction authorization and registration requirements for *capacity auction participants* who have successfully cleared and secured one or more *capacity obligations*. Such participants are required to become authorized as *capacity market participants* (Ch. 7, S.18.2.3 of the *market rules*). This authorization enables participants to participate in the energy market to satisfy a *capacity obligation.*

In the case of *capacity market participants with capacity import resources*, all participation contact roles must be assigned to the *capacity market participant* or to an *affiliate* of the *capacity market participant*. Details with respect to contact roles are set out in "Market Manual 1.3: Identity Management Operations Guide".

Post-auction *market participant* authorization processes are further detailed in "Market Manual 1.5: Market Registration Procedures".

5.1.1 Prudential Support

All *capacity auction participants* with a *capacity obligation* are encouraged to post *capacity prudential support* for the *obligation period*, at least 60 days prior to the *obligation period*.

Further details on *capacity prudential support* requirements are outlined in "Market Manual 5.4: Prudential Support."

5.2 Registration Requirements

In order to satisfy a *capacity obligation* in the *energy market,* a resource registered in the *energy market* must be assigned to each *capacity obligation.* The resource may be assigned during capacity enrollment in the pre-auction period or, for *demand response resources* that did not exist at the time of capacity enrollment upon registration of their *energy market* resource during the *forward period*. Any *market participant* seeking to register their *facilities* and resources, must follow the processes outlined in "Market Manual 1.5: Market Registration Procedures" during the *forward period.* This process should be completed at least two months prior to the beginning of the *obligation period*. Upon completion, the *capacity market participant* can assign these newly registered *facilities* with their applicable *capacity obligation.* The *registered facility* associated with the *capacity auction resource* other than a *capacity import resource* must be owned by the *capacity market participant* (*capacity market participants* participating with virtual *hourly demand response resources* may include physical or virtual *non-dispatchable loads* owned by a third party as *demand response contributors*).

Market participants that are seeking to change attributes of their resources in the *IESO's* registration system in order to satisfy a *capacity obligation* must complete the market registration process, including possible commissioning tests, 45 *business days* prior to the start of the *obligation period*. For example, a resource may change its bid type in the *IESO's* registration system.

Physical Demand Response

To register a *facility* in accordance with "Market Manual 1.5: Market Registration Procedures", CMPs providing *demand response capacity* with transmission connected *load facilities* or with *embedded load facilities* that are revenue metered by *the IESO* must register their *demand response resources* as *hourly demand response (HDR)* or as *dispatchable loads* (for example, a *non-dispatchable load* could be registered as *HDR*). This *facility* registration includes the submission of *demand response capacity.* A *dispatchable load* cannot be part of an *HDR* resource at the same time*. CMP*s providing *demand response capacity* with physical *HDR resources* may register only one physical HDR *resource* per *capacity obligation* (*capacity market participants* participating with virtual *HDR resources* may include multiple physical *non-dispatchable loads* as *demand response contributors*).

Virtual Demand Response

CMPs providing *demand response capacity* with *facilities* that are not revenue metered by the *IESO* must register only one resource per *capacity obligation*, per contributor type (residential or commercial/ industrial/ institutional load type, as applicable) as *HDR* at least three months prior to the beginning of the *obligation period*.

A CMP providing *demand response capacity* with both residential and commercial/industrial/ institutional non-revenue metered contributors in the same zone must register two separate *HDR resources* in that zone (one for each contributor type).

5.2.1 Contributor Management

As part of the contributor management registration process, the *capacity market participant* must submit individual contributor information via Online IESO that will be associated with their registered *hourly demand response* (HDR) *resource*(s). Each *capacity market participant* is responsible for maintaining its contributor registry throughout their *obligation period*.

The Online IESO interface allows *capacity market participants* to generate monthly contributor reports that provides a summary of their contributor participation information (resource IDs, meter point IDs, contributor type, and effective start/end dates), and corresponding capacity obligations secured under each of their respective *demand response resource*(s).

The *capacity market participant* must submit their contributor information through Online IESO within the specified submission window, but no later than the 14th *business day* prior to the start date of the effective month. Contributor registration requests will be processed and responded to by the *IESO*, including notice of approval or rejection, at least four *business days* before the start of the effective month. Rejections and/or failure to submit appropriate registration information by specified deadlines will defer the effective date of the changes to the next effective month. Refer to the latest Demand Response Contributor Management and Measurement Data Submission Timelines posted on the IESO public Website under Market Calendars.

Capacity market participants must also retain individual contributor *meter* data and all relevant supporting information for each respective contributor. The *IESO* may request such information in order to verify the accuracy of information disclosed by the *capacity market participant* at the time of an audit as detailed in Section 5.4.

There are two categories of *demand response contributors* that can be registered to meet a *capacity obligation*:

1. HDR consisting of commercial, industrial, institutional and/or *non-dispatchable loads* (C&I) that can be classified as:
    a. Virtual C&I HDR contributors; and
    b. Physical C&I HDR contributors;
2. HDR consisting of residential[5] smart-metered loads that can be classified as:
    a. Virtual residential HDR contributors

Virtual C&I HDR Contributors registration requirements:

For virtual C&I HDR contributors, the information must satisfy the following applicable requirements:

i. Contributor name and physical address (street, city, province, postal code), where the physical address must be in the same electrical zone as the associated demand response resource
    - The *capacity market participant* may use the zonal map tool located on the IESO Zonal Map page (http://www.ieso.ca/zonal.map/index.html) to confirm the electrical zone for the associated contributor;

ii. Applicable licensed Local Distribution Company (LDC) name, and LDC account number indicated on the contributors' LDC billing statement;

iii. Contributor load class type (i.e., industrial, commercial, and/or institutional);

iv. Whether the *demand response* is to be provided via load interruption or behind-the-*meter* generation;
    - If *demand response* type is behind-the-*meter* generation, then the *capacity market participant* must specify the following *generator* name plate capacity information: model number, capacity in MW, fuel type and (if applicable) load following technology;

v. Identification of whether the contributor is participating in other demand response or conservation initiatives;

vi. *Demand response capacity* of contributor in MW;

vii. A declaration of acknowledgement by the *capacity market participant* that the LDC has been notified of the contributors' participation in a *capacity auction*;

viii. Data acquisition method used to collect contributor *meter* data;

ix. Submission of LDC Billing statement for each LDC meter installation that is issued within three months of the contributor effective date;

x. Submission of single line diagram (SLD) is required when the *demand response resource* type is behind-the-*meter* generation. SLD submissions (at a minimum) must include the following details:

[5]A residential customer refers to a smart-metered service account that is billed (by a licensed local distribution company) on a residential-rate class specified in a rate-order produced by the *Ontario Energy Board*. For the purposes of this program the term 'residential', as intended by the *IESO*, excludes 'net-metered' and/or 'unit sub-metered' customers.

- Facility/contributor name, physical address
- Embedded connection point(s) (point of sale) to the local distribution company (LDC)
- Location of distribution transformer
- Location of breakers, disconnect switches, etc.
- Location of the metering installation and meter point reference identification (as indicated on contributors' Record of Installation)
- If behind-the-meter generation, indicate generation location and nameplate information (MVA/kVA rating, output voltage)

Physical C&I HDR Contributors registration requirements:

For physical C&I HDR contributors, the information must satisfy the following applicable requirements:

i. *Non-dispatchable load* Resource ID (subject to confirmation from *non-dispatchable load* owner); and

ii. *Demand response capacity* in MW.

As part of the contributor management process, any updates, revisions or amendments to contributor information applicable to C&I HDR resources must be submitted using Online IESO for review and approval, including when:

- A new contributor is added;
- An existing contributor is removed; or
- An existing contributor's information is modified or amended.

In instances when a new contributor is added and/or an existing contributor is removed, subject to *IESO*'s approval, the *capacity market participant* will be issued a new virtual meter point ID to reflect these changes. During a demand response activation event, the *capacity market participant* will be required to submit three months of measurement data under the issued virtual meter point ID, as detailed below.

Virtual Residential HDR Contributors registration requirements:

For virtual residential HDR contributors, the information submitted to the IESO must satisfy the following applicable requirements.

Submitted on a monthly basis through Online IESO using an excel template (refer to Appendix B):

i. Contributor physical address (in the order of: street# & name, city, province, postal code), where the physical address must be in the same electrical zone as the associated demand response resource;

   - The *capacity market participant* may use the zonal map tool located on the IESO Zonal Map page (http://www.ieso.ca/zonal.map/index.html) to confirm the electrical zone for the associated contributor;

ii. Applicable licensed Local Distribution Company (LDC) name and LDC account number indicated on contributors' LDC billing statement;

iii. Indicator flagging the control group contributors, as defined in the section entitled "Randomized Control Trial Baseline Methodology" below, where there must be at least 350 control group contributors which are chosen randomly (i.e. using a process of selection in which each contributor has an equal probability of being chosen) each month by the *capacity market participant* from the total population of contributors under the residential HDR resource;

The following fields must be directly entered into the input fields in Online IESO:

iv. *Demand response capacity* in MW (note: the total capability from only the treatment group contributors and must be equal to or greater than 1 MW);

v. Total number of contributors in the treatment group as defined in the section entitled "Randomized Control Trial Baseline Methodology" below; and

vi. Total number of contributors in the control group.

As part of the residential contributor management process, the *capacity market participant* shall use the excel template available in Online IESO (refer to Appendix B) to submit contributor information on a monthly basis.

Rejections and/or failure to submit appropriate contributor management registration information each month by the specified deadlines will exclude the residential HDR resource to participate in the energy market (submit energy bids) for that month, and result in Availability Charges to be applied (as further described in "Market Manual 5, Part 5.5: Physical Markets Settlement Statements").

Randomized Controlled Baseline Methodology

For HDR resources associated with either virtual or physical C&I contributors, performance is evaluated using a historical baseline (as described in Market Manual 5.5: Physical Markets Settlement Statements).

For HDR resources associated with virtual residential contributors, a randomized controlled (RC) baseline methodology is used where two groups of contributors are established, as follows:

- A "treatment" group, where contributors are activated to provide demand response upon receipt of the demand response standby and activation notice; and
- A randomized "control" group, where contributors serve as a proxy for baseline consumption; therefore, are not activated to provide demand response. The "control" group contributors are randomly selected using a process of selection in which each contributor has an equal probability of being chosen each month.

The RC evaluates the consumption difference between the two groups of contributors to determine the amount of demand response delivered, as illustrated in Figure 5-1.

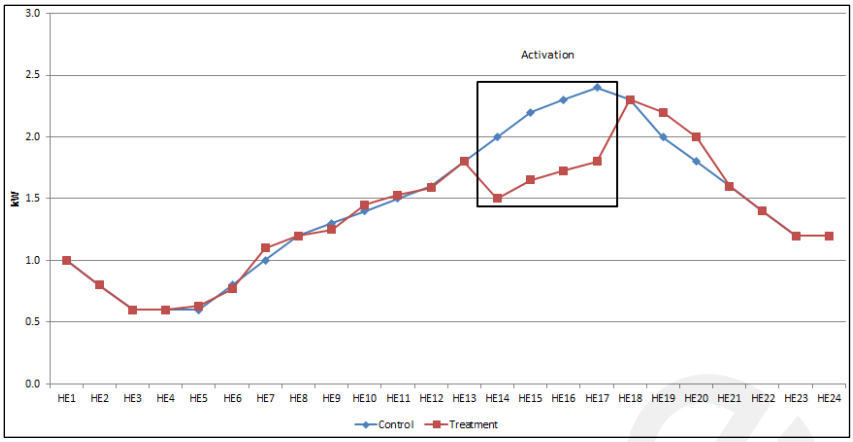

Figure 5-1: Randomized Control Trials (RC) performance evaluation

Refer to "Market Manual 5.5: Physical Markets Settlement Statements" for a further description of how residential HDR performance is evaluated and how settlements are calculated.

5.3 Energy Market Participation

In order to satisfy their *capacity obligation(s)*, *capacity market participants* will be required to submit *dispatch data* in the day-ahead commitment process as set out in "Market Manual 9.2: Submitting Operational and Market Data for the DACP", and in the *real-time market* as set out in "Market Manual 4.2: Submission of Dispatch Data in the Real-Time Energy and Operating Reserve Markets." *Capacity market participants* are required to follow *dispatch instructions* as set out in "Market Manual 4.3: Real-Time Scheduling of the Physical Markets."

All *capacity auction resources* will be subject to test activations in the *real-time market*, as set out in Section 5.3.3. *Capacity market participants* with *capacity obligation(s)* allocated to *HDR* resources will be compensated for out of market activations, including test activations, as detailed in "Market Manual 5.5: Physical Markets Settlement Statements."

5.3.1 Outage Management / Non-Performance Events

Capacity market participants with a *capacity auction resource*, except for *capacity market participants* with capacity *import resources,* are required to submit *outage* requests as set out in "Market Manual 7.3: Outage Management." *Capacity market participants* with *hourly demand response resources* are required to inform the *IESO* of non-performance events[6] as set out in Market Manual 7.3.

5.3.2 Measurement Data Submissions

For Virtual C&I HDR resource(s):

Each Virtual C&I HDR resource is associated with a virtual meter point ID that reflects contributor changes to a *capacity market participant's* virtual portfolio. *Capacity market participants* are required to submit three months of aggregated measurement data (on a five-minute interval basis) through Online

[6] Non-performance event means an event determined by the *CMP* where a *demand response resource* is, in whole or in part, in a Demand Response *Outage* or otherwise unable to Curtail for a period of time.

IESO only for months in which they are activated for their demand response capacity obligations. The Online IESO data submission must include measurement data for the activation month and two previous months of historical data in a single three-month data file per virtual meter point ID.

Processing of Measurement Data

Virtual C&I HDR will have either a uni-directional meter (kWh delivered) or a bi-directional meter (kWh delivered and kWh received). *Capacity market participants* must adhere to the following methodology when aggregating contributor meter data and submitting a consolidated three-month measurement data file:

- Virtual contributors with a uni-directional meter type, the uni-directional interval meter readings will be recorded in the summation of Channel 1 (kWh delivered) energy quantities. Channel 2 (received) energy is recorded as zero for that contributor
- Virtual contributors with a bi-directional meter type, the contributor's bi-directional interval meter readings must be netted (kWh delivered – kWh received) and recorded as follows:
    - if the resultant net kWh quantity is less than or equal to zero, then the total net kWh value will be zero and is recorded in the summation of Channel 1 (delivered) energy quantity for that interval. Channel 2 (received) energy is recorded as zero for that interval, or
    - if the resultant net quantity is greater than zero, then the total net value will be equal to the net amount and will be included in the summation of Channel 1 (delivered) energy quantity for that interval. Channel 2 (received) energy is recorded as zero for that interval

  The measurement data submission is the summation of all contributors by channel per interval.

File Format Requirements for Measurement Data Submissions

Measurement data submitted by *capacity market participants* through Online IESO, must adhere to the following requirements:

- Must *not* include any measurement error corrections,
- Must *not* include any loss adjustments,
- Must be provided in the following format:
    - A CSV (comma separated values) file format compatible with the *IESO*'s Meter Data Acquisition System, containing two channels of 5-minute engineering unit values (without any gaps or overlaps).
    - The CSV data file shall adhere to the following format (separated by commas) corresponding to each column name, as illustrated in Figure 6-2 below,
        - Row 1 (Main header): "DATE,TIME,CH1,CH2"
        - Row 2 (Data intervals): "YYYY/MM/DD, HH:MM, ###.###,###.###", where:
            - Date: "YYYY/MM/DD", as in year/month/day
            - Time: "HH:MM", hour: minutes in Eastern Standard Time (EST),

- Channel 1: Summation of all virtual contributors' energy withdrawn from the grid, in Numeric "###.###," in kWh up to three decimal places,
- Channel 2: Summation of all virtual contributors' energy injected into the grid, in Numeric "###.###," in kWh up to three decimal places, and

o The CSV data file must contain 288 rows of data per day, having a beginning time of 00:05 and an end time of 24:00.

```
DATE,TIME,CH1,CH2
2017/05/01,00:05,111.222,0
2017/05/01,00:10,333.444,0

...
.....

2017/05/01,23:55,555.666,0
2017/05/01,24:00,777.888,0
```

Figure 5-2: Sample CSV File Format for Measurement Data Submission for C&I HDR

For Virtual Residential HDR resource(s):

Capacity market participants are required to submit aggregated hourly (60-minute interval) measurement data only for days in which they received demand response activations during the commitment month. Measurement data (single data file per virtual meter point ID for all activation days) must be submitted for each of the two groups of contributors (treatment and control group) through Online IESO in accordance with the latest Contributor Management Timelines posted on the IESO public Website under Market Calendars.

Subject to *IESO*'s approval, the *capacity market participant* will be assigned two unique Meter point IDs (MPID), one for the treatment group and one for the control group. The MPID format for each group is as follows:

- DRAT########## to represent the treatment group contributors, and
- DRAC########## to represent the control group contributors.

File Format Requirements for Measurement Data Submissions

Measurement data submitted by *capacity market participants* through Online IESO must adhere to the following requirements:

- Must *not* include any measurement error corrections,
- Must *not* include any loss adjustments,
- Must be provided in the following format:
  - A CSV (comma separated values) file format containing two channels of 60 minute engineering unit values (without any gaps or overlaps),
  - The CSV data file shall adhere to the following format (separated by commas) corresponding to each column name, as illustrated in Figure 5-3 below,
    - Row 1 (Main header): "DATE,TIME,CH1,CH2"

- Row 2 (Data intervals): “YYYY/MM/DD, HH:MM, ###.###,###.###”, where:
  - Date: “YYYY/MM/DD”, as in year/month/day
  - Time: “HH:MM”, hour:minutes in Eastern Standard Time (EST),
  - Channel 1: Summation of all virtual contributors’ withdrawn energy in kWh up to three decimal places, in numeric value “###.###”,
  - Channel 2: Shall remain zero (with respect to the exclusion of ‘net-metered’ customers under residential HDR),

o The CSV data file must contain 24 rows of data per day, having a beginning time of 01:00 and an end time of 24:00.

```
DATE,TIME,CH1,CH2
2017/05/01,01:00,111.222,0
2017/05/01,02:00,333.444,0

...
.....

2017/05/01,23:00,555.666,0
2017/05/01,24:00,777.888,0
```

Figure 5-3: Sample CSV File Format for Measurement Data Submission for Residential HDR

Timelines for Data Submission and Processing

Upon activation, *capacity market participants* must submit their measurement data no later than the 6th *business day* before the end of the subsequent month. Refer to the latest Demand Response Contributor Management and Measurement Data Submission Timelines posted on the IESO public Website under Market Calendars for details.

The *IESO* will process all measurement data submissions and respond to the *capacity market participant* with notice of any errors by the 4th *business day* prior to the start of the effective month. The *capacity market participant* will then have (at a minimum of) 2 *business days* from the date the *IESO* provides such notice to correct and resubmit a revised measurement data file through Online IESO. Measurement data submissions not submitted by the specified deadlines will incur non-performance charges in accordance with “Market Rules Chapter 9: Settlements and Billing Section 4.7J Demand Response Capacity Obligations”.

Capacity market participants must retain individual contributor measurement data and all supporting information provided at the time of registration, for audit purposes for a period of seven (7) years. The *IESO* may request such information in order to verify the accuracy of information disclosed by the *capacity market participant.*

Validation, Estimation and Editing (VEE) Process for Virtual C&I HDR Contributors

For virtual C&I HDR contributors, if the *capacity market participant* has identified, within the measurement data submission deadline, that a portion of the measurement data is missing for particular contributor(s), the *capacity market participant* shall:

- Collect data for all contributors for the period of three months excluding the missing period

- Utilize the following Validation, Estimation and Editing (VEE) criteria for virtual C&I HDR contributors to account for the missing period:
    - If the data is missing for any period outside the hours of a *demand response* activation event; measurement data for the missing period will be estimated to zero.
    - If the data is missing for any period within the *demand response* activation event; the *capacity market participant* shall take the highest 5 min interval energy value (kWh) from the entire three-month data set and estimate the missing period with that value.

Capacity market participants must submit a "Measurement Data Control Sheet" with each measurement data submission identifying contributors with VEE data (if applicable). A template of the "Measurement Data Control Sheet" can be found in Appendix C.

At the time of an audit, the IESO shall take into account all supporting information provided by the *capacity market participant* including measurement data submitted during the *commitment period*, the actual measurement data submitted at the time of the audit along with the measurement data control sheet (if applicable).

5.3.3 Testing of *Capacity Auction Resources*

Testing of Capacity Generation Resources

The *IESO* may direct *capacity generation resources* to perform up to two activation tests per *obligation period* to verify that the resource is capable of satisfying its *capacity obligation*. Tests will be scheduled to occur during the *availability window* of the *dispatch day*.

The tests are conducted as follows:

- Applicable resources will be contacted by the *IESO* for test details. For quick start generators, the *IESO* will contact the *capacity market participant* up to one hour in advance of any exercise. Non-quick start generators will be contacted one (1) *business day* in advance of any exercise,
- For non-quick start generators, in the day-ahead timeframe and prior to DACP, the resource will have a constraint applied to *generate* to the greater of either their (1) *capacity obligation* or *(2) minimum loading point for* the duration of at least their *minimum generation block run time (MGBRT)*.
- For quick start generators, up to one hour in advance, the resource will have a constraint applied to *generate* to the greater of either their (1) *capacity obligation* or *(2) minimum loading point for* the duration of at least their *minimum generation block run time (MGBRT)*.
- The *registered market participant* for the *facility* must ensure that *offers* are submitted.
- If a resource being tested demonstrates an injection of electricity into the *IESO-controlled grid* equal to or greater than their *capacity obligation* for every interval for the duration (up to 4 hours) of the test, the test will be deemed a success.

Failure of the test will result in the applicable charges as specified in "Market Manual 5.5: Physical Markets Settlement Statements."

If a *capacity generation resource* is unable to comply with the test activation of the *auction capacity* on the *dispatch day*, it is the responsibility of the *capacity market participant* to notify the *IESO*, according

to the outage reporting requirements specified for *generation facilities* as specified in "Market Manual 7.3: Outage Management" and update the *energy offers* in accordance with "Market Manual 4.2: Submission of Dispatch Data in the Real-Time Energy and Operating Reserve Markets". Subsequent test activation will be rescheduled by the *IESO* following the completion of the *outage*.

The *IESO* may determine a test activation for a *capacity generation resource* is not required if all the following criteria are met:

- the *capacity generation resource* receives and follows sufficient *dispatch instructions* in the *energy market*,
- dispatches are within the *availability window*, and
- the dispatches are to at least the amount of their *capacity obligation*

Failure of a capacity generation resource to perform a successful test activation may result in one or more of the following:

- Non-performance charges as specified in "Market Manual 5.5: Physical Markets Settlement Statements."
- A subsequent test activation to be scheduled by the *IESO*, or
- A compliance investigation to be performed by the *IESO*.

Testing of Capacity Storage Resources

The *IESO* may direct *capacity storage resources* to perform up to two activation tests per *obligation period* for each *capacity auction resource* to verify that the resource is capable of satisfying its *capacity obligation*. Tests will be scheduled to occur during the *availability window* of the *dispatch day* and will not take place if a real-time economic dispatch has already occurred within that day's *availability window*.

The tests are conducted as follows:

- Applicable resources will be contacted by the *IESO* for test details. The *IESO* will contact the *capacity market participant* up to one hour in advance of any exercise.
- The resource will have a constraint applied to *generate* to its *capacity obligation* for the duration of the test.
- The *registered market participant* for the *facility* must ensure that *offers* are submitted.
- If a resource being tested demonstrates an injection of electricity into the *IESO-controlled grid* equal to or greater than their *capacity obligation* for every interval for the duration (up to 4 hours) of the test, the test will be deemed a success.

Failure of the test will result in non-performance charges as specified in "Market Manual 5, Part 5.5: Physical Markets Settlement Statements."

If a *capacity storage resource* is unable to comply with the test activation of the *auction capacity* on the *dispatch day*, it is the responsibility of the *capacity market participant* to notify the *IESO*, according to the outage reporting requirements specified for *generation facilities* as specified in Market Manual 7.3: Outage Management" and update the *energy offers* in accordance with "Market Manual 4.2: Submission of Dispatch Data in the Real-Time Energy and Operating Reserve Markets". A subsequent test activation will be rescheduled by the *IESO* following the completion of the *outage*.

The *IESO* may determine a test activation for a *capacity storage resource* is not required if all the following criteria are met:

- the *capacity storage resource* receives and follows sufficient *dispatch instructions* in the *energy market*,
- dispatches are within the *availability window*, and
- the dispatches are to at least the amount of their *capacity obligation*.

Failure of a *capacity storage resource* to perform a successful test activation may result in one or more of the following:

- Non-performance charges as specified in "Market Manual 5.5: Physical Markets Settlement Statements,"
- A subsequent test activation to be scheduled by the *IESO*, or
- A compliance investigation to be performed by the *IESO*.

Testing of Capacity Dispatchable Load Resources

The *IESO* may direct *capacity dispatchable load resources* to perform up to two activation tests per *obligation period*, to verify that the *capacity dispatchable load resource* is capable of satisfying the *capacity obligation*. Tests will be scheduled to occur during the *availability window* of the *dispatch day.*

The tests are conducted as follows:

- Applicable resources will be contacted by the *IESO* for test details. The *IESO* will contact the *capacity market participant* day-ahead for tests during the *commitment period* ending April 30, 2021 and up to one hour in advance of any exercise for any tests during the commitment periods starting on or after May 1, 2021.
- The resource will have a constraint applied to *withdraw* to its *capacity obligation* for the duration of the test.
- The *registered market participant* for the *facility* must ensure that *bids* are submitted related to the test.
- If a resource being tested demonstrates a reduction in *energy* withdrawal from the IESO controlled grid equal to or greater than the *capacity obligation* for every interval for the duration (up to 4 hours) of the test, the test will be deemed a success.

Failure of the test will result in the applicable charges as specified in "Market Manual 5, Part 5.5: Physical Markets Settlement Statements"

If a *capacity dispatchable load resource* is unable to comply with the test activation on the *dispatch day*, it is the responsibility of the *capacity market participant* to notify the *IESO*, according to the outage reporting requirements specified for *dispatchable loads* as specified in "Market Manual 7.3: Outage Management" and update the *demand response energy bids* in accordance with "Market Manual 4.2: Submission of Dispatch Data in the Real-Time Energy and Operating Reserve Markets". Subsequent test activations will be rescheduled by the *IESO* following the completion of the *outage*.

For a *capacity dispatchable load resource*, a test is deemed a success if the resource demonstrates a reduction in energy withdrawal that is equal to its *capacity obligation*. The *IESO* may determine a test for a *dispatchable load* resource is not required if the:

- *dispatchable load* receives and follows sufficient *dispatch instructions* in the *energy market*,

- dispatches are within *the availability window*, and
- *dispatchable load* demonstrates that the *capacity obligation* has been met.

The *IESO* may schedule test activation for *capacity dispatchable load resources* regardless of whether the above conditions are met, if there is evidence that the resource is not able to deliver its *capacity obligation* at any time during the *obligation period*.

Failure of a capacity dispatchable load resource to perform successful test activation may result in one or more of the following:

- Non-performance charges as specified in "Market Manual 5.5: Physical Markets Settlement Statements,"
- A subsequent test activation to be scheduled by the *IESO*, or
- A compliance investigation to be performed by the *IESO*.

Testing of Hourly Demand Response Resources

The *IESO* may direct *hourly demand response (HDR) resources* to perform up to two activation tests per *obligation period.* These tests are conducted by the *IESO* to assess an *HDR resource's* ability to demonstrate a reduction in *energy* withdrawal from the IESO controlled grid equal to or greater than the *capacity obligation* of the resource. The *IESO* will provide notification to *capacity market participants* one day in advance of the test with the actual test itself occurring during the *availability window* of the *dispatch day*. Testing for *HDR resources* is conducted for four hours, unless an *HDR resource* is qualified for reduced test duration.

For test activations, *capacity market participants* with *hourly demand response* (*HDR*) *resources* will receive a standby notice on the *pre-dispatch day* and an activation notice approximately 2 hours and 30 minutes in advance (but no later than 2 hours in advance) of the first *dispatch hour* of the test activation. Resources will receive a schedule in pre-*dispatch* and real-time, regardless of the *demand response energy bid* price submitted.

If an *HDR resource* with a *capacity obligation* is unable to comply with the test activation on the *dispatch day*, it is the responsibility of the *capacity market participant* manage its non-performance as described in "Market Manual 7.3: Outage Management". If the non-performance event indicates that the entirety of the *HDR resource's demand response capacity* is unavailable, subsequent test activations will be rescheduled by the *IESO* following the completion of the non-performance event.

An *HDR resource* test activation is considered valid, unless:

- The *capacity market participant* provides notice of a non-performance event that would reduce the *demand response capacity* of the *hourly demand response resource* to 0 MW,
- The IESO did not send either advisory, standby, or activation notifications in advance of the test activation as per the timelines specified above, or
- The *IESO* cancels the test prior to the start of the first *dispatch hour* of the test activation. The *IESO* will appropriately inform *capacity market participants* with *HDR resources* about the test cancellation.

The *IESO* may determine that a test activation for an *HDR resource* is not required if the *IESO* is able to verify that the *HDR resource* delivered an amount equal to its *capacity obligation* and satisfied the performance parameters defined below, during a previous activation within the same *obligation period.*

The *IESO* may schedule test activation for *HDR resources* regardless of whether the above conditions are met, if there is evidence that the resource is not able to deliver *demand response capacity* at any time during the *obligation period*.

A second test within an *obligation period* will not be required if the *hourly demand response resource* delivers its *capacity obligation* through a non-test-based or test-based activation during that *obligation period*.

Failure of an *hourly demand response resource* to perform successful test activation may result in one or more of the following:

- Non-performance charges as specified in "Market Manual 5.5: Physical Markets Settlement Statements,"
- A subsequent test activation to be scheduled by the *IESO*,
- Revocation of reduced test duration, where applicable, and/or
- A compliance investigation to be performed by the *IESO*.

Performance Parameters:

Performance of an *HDR resource* means the *capacity obligation* for the *HDR* resource is delivered for each hour of the activation period within a 15% dead-band (e.g. at least 85% of the *capacity obligation* must be delivered).

Performance will be assessed using the following parameters:

- The load reduction, up to a maximum of 115% of an *HDR resource's* energy bid quantity, will be considered per 5-minute interval
- The load reduction across each 5-minute interval will be summed for each activation hour (all 12 intervals) to determine the hourly load reduction

Reduction of Test Length of *HDR* Resources

An *HDR* resource that has delivered its *capacity obligation* during a four-hour activation (non-test-based[7] or test-based) will be subsequently tested for a one-hour duration. Tests following unsuccessful four-hour activations shall continue as four-hour activations.

The *IESO* may revert the test duration for an *HDR resource* from one hour back to four hours upon provision of advance notice, identifying which conditions were not satisfied.

An *HDR resource's* one-hour test duration will be maintained provided:

a) The *HDR resource* has demonstrated delivery of bid quantity in all activations (non-test-based or test-based) since qualifying for reduced testing, where the bid quantity must be equal to its *capacity obligation* in at least one of two most recent activations (non-test-based or test-based)
    - Delivery of bid quantity means the load reduction for each hour of the activation period, within a 15% dead-band compared to its demand response bid quantity[8] (e.g. at least 85% of the bid quantity must be delivered), and

[7] Non-test-based activation can refer to an in-market or emergency activation

[8] Bid quantity means a statement of the quantity in the day-ahead commitment process and the *real-time energy market,* greater than 1 MW, entered by a *capacity market participant* for an *hourly demand response* resource to fulfill a *capacity obligation* availability requirement.

- Has performed within the Performance Parameters stated above

b) The *HDR* resource has not increased its *capacity obligation* by more than 5 MW from the last successful four-hour activation (non-test-based or test-based).

Testing of Capacity Import Resources

The *IESO* may direct *capacity import resources* to perform up to two activation tests per *obligation period* for each *capacity auction resource* to verify that the *auction capacities* are deliverable. Tests will be scheduled to occur during the *availability window* of the *dispatch day*.

The tests are conducted as follows:

- Up to 2 hours in advance of any test, applicable *capacity import resources* will receive a constraint and a schedule should appear in PD-1. Tests may be scheduled for a duration of up to 4 hours.
- If a *capacity import resource* being tested is successfully scheduled in *pre-dispatch* and not curtailed and subject to a capacity charge as per "Market Manual 4.3: Real-Time Scheduling of the Physical Markets", the test will be deemed a success.
- Failure of the test will result in the applicable charges as specified in "Market Manual 5.5: Physical Markets Settlement Statements."

If a *capacity import resource* is unable to comply with the test activation of the *auction capacity* on the *dispatch day*, it is the responsibility of the *capacity market participant* to notify the *IESO*, and update the *energy offers* in accordance with "Market Manual 4.2: Submission of Dispatch Data in the Real-Time Energy and Operating Reserve Markets". A subsequent test activation will be rescheduled by the *IESO* following the completion of the *outage*.

The *IESO* may determine a test activation for a *capacity import resource* is not required if all the following criteria are met. The:

- *capacity import resource* receives and follows sufficient *dispatch instructions* in the *energy market*,
- dispatches are within the *availability window*, and
- *capacity import resource* demonstrates that its *capacity obligation* has been met.

Failure of a *capacity import resource* to perform a successful test activation may result in one or more of the following:

- Non-performance charges as specified in "Market Manual 5.5: Physical Markets Settlement Statements,"
- A subsequent test activation to be scheduled by the *IESO*, or
- A compliance investigation to be performed by the *IESO*.

5.4 Measurement Data Audit

The *IESO* conducts audits to assess and verify the completeness and accuracy of submitted demand response measurement data, and supporting information and documents including but not limited to the Local Distribution Company billing statements, and Single Line Diagrams. The audit procedures and processes described herein are specific to the Virtual C&I *hourly demand response* (*HDR*) resources.

5.4.1 Capacity Market Participant's Responsibilities

This section covers the *capacity market participants'* responsibilities associated with performing measurement data audits.

The *capacity market participant* is responsible for:

- Providing the *IESO* auditor with access to the information required;
- Submitting information and evidence requested; and
- Payment of non-performance charges, as outlined in Section 6, if the audit requirements are not met

5.4.2 Virtual C&I HDR Resource Audit

Virtual C&I *HDR resource* audit will be conducted by evaluating each contributor that is mapped to the selected Virtual C&I *HDR resource*. The *IESO* will establish audit results by conducting a review of the supporting information provided at the time of registration and documentations provided during the audit including: Local Distribution Company (LDC) billing statements and individual contributor measurement data for the respective virtual C&I *HDR resource*. All processes related to the virtual C&I *HDR resource* audit will be managed through the Online IESO.

5.4.3 Audit Scheduling and Submission of Supporting Documents

The Virtual C&I *HDR Resource* audit can be categorized as follows:

- Full Audit
    - *Capacity market participants* are required to submit all required documents for all contributors
- Partial Audit
    - A spot check to evaluate and compare meter data interval(s) for one or more contributors against their respective LDC interval meter data; or
    - A manual selection of a set of contributors from a portfolio. In case of a manual selection, *capacity market participant* is required to submit all required documents for the selected contributors.

The default deadline is set to one calendar month from the date of issuance for the submission of all required supporting documentation:

Local Distribution Company Billing Statement

The *capacity market participants* are required to provide to the *IESO* a copy of Local Distribution Company (LDC) billing statement for all the contributors registered under the *capacity market participant's* portfolio. This information will be used by the *IESO* auditor to verify:

- The LDC account number with the information found in the *meter registry*.
- The total energy presented on the LDC statement against the meter data file submitted for the individual contributor.

Measurement Data

The *capacity market participants* are required to provide the *IESO* with individual contributor *meter* data as explained in section 5.3.2. The *IESO* auditor will assess the following criteria at the time of audit:

- The participant is available to curtail its load on *business days* and hours during an *obligation period* as defined in this manual.
- The participant has submitted measurement data[9] for the audit month and an additional two months of baseline.
- Actual measurement data[10] meets the criteria defined in Section 5.4.4 of the document.

5.4.4 Procedure to Conduct a Virtual C&I HDR Audit

The Virtual C&I HDR audit consists of two steps:

1. **Step 1** of the audit reconciles actual contributor measurement data to the contributors LDC billing statement
2. **Step 2**[11] of the audit reconciles the sum of the contributor's actual measurement data to the submitted measurement data (this is the measurement data provided by the *capacity market participant* during activation months in accordance with the Demand Response Measurement Data Submission Timelines).

Mechanism for Step 1 of the Audit Process

To determine the error in Step 1 of the audit process; the sum total of the actual measurement data file for a single contributor is compared against the total monthly consumption indicated in the LDC billing statement for that contributor. The difference between the two values shall be within 1% of the consumption indicated in the LDC Statement.

Step 1 of the audit process consists of two individual reconciliation checks

1. Comparing the total kWh (energy) for a given month – Area under the curve
2. Comparing the highest kW (Power) value – Peak Demand

These reconciliation checks verify the contributor's data against the total monthly consumption and the peak demand indicated on the LDC statement. However, these reconciliation checks do not provide adequate assurance that the data will reconcile on an interval by interval basis. As such, the IESO at its discretion, may request the *capacity market participant* to provide 5 min **LDC interval data** with a declaration stating that the data has been collected from the LDC. This data will then be compared against the data provided by the *capacity market participant* as part of the audit request. An audit can be deemed as "Complete with Observations" if the intervals from the submitted measurement data are outside the +/-1% threshold when compared to intervals from the LDC verified 5 min interval meter data.

[9] Submitted measurement data refers to the monthly Data submissions for the DR Resource in accordance with the Demand Response Submission Timelines.

[10] Actual contributors' measurement data refers to the individually submitted Contributor Data through the DR Audit task in Online IESO.

[11] If a partial audit is conducted, the actual measurement data will only be assessed using Step 1 of the audit process.

Mechanism for Step 2 of the Audit Process

IESO uses **Absolute Error methodology** to determine the error in Step 2 of the audit process. The methodology is described below:

1. At the time of the audit of a resource, the aggregator is required to submit actual meter data for each contributor that makes up that resource.
2. The actual data is then compared to the submitted measurement data on a 5 min interval basis.
3. An absolute difference between the actual measurement data and submitted measurement data is taken.
4. Sum of the absolute difference is compared against the sum of the submitted measurement data.
5. This sum of the absolute difference should be within 1% of the summed submitted measurement data.

5.4.5 Audit Review and Remedial Actions

The *IESO* will review supporting documents submitted by the *capacity market participant* for completeness and accuracy. If the review produces any findings, the *capacity market participant* shall be required to submit remedial evidence within the prescribed period as per the audit outcome. If findings are not resolved after one resubmission, the *IESO* shall close the audit with observations and determine a course of action in order to enforce compliance.

5.4.6 Closure of Audit

Once the review of the submitted evidence is complete, the *IESO* will disclose the audit results to the *capacity market participant* and close the audit as follows:

1. Virtual C&I HDR Resource audit is considered 'Complete' when
   a. Contributors actual measurement data reconciles with associated LDC billing statement (tolerance of +/- 1%) and
   b. Sum of actual measurement data reconciles with submitted measurement data (tolerance of +/- 1%)
2. A Virtual C&I HDR Resource audit is 'Closed with Observations' when it is concluded that actual measurement data and supporting documentation differs from submitted measurement data and supporting documentation (Ch. 9 s.4.7J.4) i.e. that the audit reveals that data was outside the prescribed threshold in either Step 1 or Step 2 of the audit process.

– End of Section –

6. Settlements

Capacity market participants with *capacity obligations* will be settled, for both payments and non-performance charges, using the *physical markets settlement process* as detailed in "Market Manual 5.5: Physical Markets Settlement Statements." Details on how the costs will be recovered are also provided in Market Manual 5.5.

Capacity market participants will be paid availability payments as detailed in Market Manual 5.5. Applicable non-performance charges will apply when *energy market* participation requirements outlined in this manual are not met.

In general, non-performance charges occur for the following situations:

i. Availability requirements are not met (i.e. availability charge);
ii. Measurement data submission was not received by the *IESO* by the deadline (i.e. administration charge);
iii. *Dispatch instructions* were not followed (i.e. *dispatch* charge); and
iv. Failing to deliver capacity in the *energy market* (i.e. capacity charge).

Non-performance charges will be calculated and settled as detailed in Market Manual 5.5.

6.1 Non-Performance Factors

The non-performance factors referenced in Market Manual 5.5 will use the factors listed in the table below for settling each *capacity obligation* for the month that is being settled.

Table 6-1: Non-Performance Factors

Month	Factor
January	2.0
February	2.0
March	1.5
April	1.0
May	1.0
June	1.5
July	2.0
August	2.0
September	2.0
October	1.0
November	1.0
December	1.5

– End of Section –

7. Buy-out Process

Successful *capacity auction participants* and *capacity market participants* have the option to buy-out of their *capacity obligations* at any time. A full or partial buy-out may be requested anytime during the forward period or the *obligation period*. The buy-out will be valid from the effective date of the buy-out request until the end of the associated *obligation period*. The effective date will be no sooner than the two *business days* following the date that the IESO receives the request to buy-out. Upon *IESO's* acceptance of a buy-out request, a buy-out charge will apply and is settled using the *physical markets settlement process* for the next available month-end *preliminary settlement statement*. Participants may refer to "Market Manual 5.5: Physical Markets Settlement Statements" for details on how the buy-out charge is calculated prior to initiating the buy-out process.

In order to initiate a buy-out, a written request must be submitted to the *IESO* by the registered *capacity auction* contact via email to: customer.relations@ieso.ca.

The email must contain the following information for each *capacity obligation* the participant requests to buy-out from:

- Capacity obligation ID;
- Effective date of the buy-out request[12];
- Buy-out *obligation period*: Specify the *obligation period* the buy-out is being requested for;
- Buy-out zone;
- *Capacity auction resource;* and
- Buy-out capacity: Specify the capacity of the buy-out request in MW. In the case of a partial buy-out request, the remaining *capacity obligation* must be greater than or equal to 1 MW. In the case of a full buy-out request, the remaining *capacity obligation* must be 0 MW.

The *IESO* will process the buy-out request within seven *business days.* At the end of this review period, the *IESO* will either:

a. Approve the buy-out request: The *IESO* will notify the participant of the applicable buy-out charge.
   - If the participant has requested for a partial buy-out, the *IESO* will notify it of the revised *capacity obligation*.
   - If the participant has requested a full buy-out of all its *capacity obligations*, the *IESO* will refund its pre-auction deposit amount within ten *business days* after the *IESO* has received payment for the buy-out charge.
   - If the *capacity prudential support obligation* is revised downward due to a buy-out, the *IESO* will refund the difference after the *IESO* has received the payment for the buy-out charge. The revised *capacity prudential support obligation* will be based on the revised *capacity obligation*.

[12] For a *capacity market participant* that has not registered a resource in the *energy market* for a *capacity obligation*, the effective date of the buy-out request must be specified as the first day of the associated *obligation period.*

OR

b. Reject the buy-out request: The *IESO* will provide a reason for rejection.

– End of Section –

8. Capacity Obligation Transfer

Capacity auction participants and *capacity market participants* may transfer their *capacity obligations* fully or partially. The *capacity obligation* transfer will be valid for all or some of the *obligation period* based on IESO approval.

A capacity transferor may request a full or partial *capacity obligation* transfer during the *forward period,* 14 *business days* prior to the start of the *obligation period*.

In order to initiate a *capacity obligation* transfer, a request must be submitted to the *IESO* using Online IESO by the *capacity transferor*. A separate request must be submitted for each *capacity obligation* and contain the following information:

- *Capacity obligation* ID and associated *capacity auction resource* belonging to the *capacity transferor*;
- The name of the *capacity transferee*;
- The capacity (in MW) of the transfer request. For both transferee and transferor, the respective resulting *capacity obligations* cannot be between 0 and 1 MW (but, for greater certainty, can be 0 MW and can be equal to or greater than 1 MW); and
- The *obligation period* for which the transfer is being requested;

The request will not be accepted by the *IESO* until the *IESO* receives, via Online IESO, confirmation from the *capacity transferee* that it accepts the new/additional *capacity obligation (*only when the *capacity transferor* and the *capacity transferee* are not the same *capacity auction participant)* and the name of the *capacity auction resource* that will accept the *capacity obligation.*

The *IESO* will assess each *capacity obligation* transfer request in the order received by the *IESO* and determine whether the *capacity obligation* transfer request meets the criteria stipulated in Chapter 7, Section 18.9 of the *market rules.* The *IESO* will then approve or reject the *capacity obligation* transfer. If rejected, the *IESO* will provide a reason for rejection to both the *capacity transferor* and the *capacity transferee.*

If approved, the *IESO* will notify the *capacity transferor* and the *capacity transferee*. If the *capacity transferor* has requested a partial transfer, the *IESO* will notify the *capacity transferor* of the revised *capacity obligation*. The *IESO* will notify the *capacity transferee* of any additional deposit or *capacity prudential support obligation*, if required.

If the *capacity obligation* to be transferred will be satisfied by the *capacity transferee's* existing resource that is registered to meet the *capacity obligation* for the same *obligation period* and sufficient *prudential support* is posted, then the *capacity transferee* must satisfy any revised *capacity prudential support* requirements within five (5) *business days,* or such longer period as agreed upon with the *capacity transferee*, as specified in Manual 5.4. If not, the *capacity transferee* must satisfy the *capacity auction deposit* requirements within five (5) *business days*, or such longer period as agreed upon with the *capacity transferee*.

A *capacity transferee* who acquires a *capacity obligation* as a result of a transfer from a different zone will be settled based upon the *capacity auction clearing price* received when that first originally cleared the *capacity auction* (i.e. the original zone). The revised *capacity auction clearing price* will be included in the participant's confidential post-auction auction report. For example, a *capacity auction participant*

receives a *capacity obligation* of 25MW in a *capacity auction* at a *capacity auction clearing price* of $100. If the *capacity auction participant* accepts a *capacity obligation* transfer for an additional *auction capacity* of 50MW for the same *capacity auction resource* via a transfer from another zone where the *capacity auction clearing price* is $40, the revised c*apacity obligation* for the *capacity auction resource* will be 75MW. Its revised (blended) *capacity auction clearing price* will be $60, calculated from [(25 x $100) + (50 x $40)] ÷ 75 = $60.

Upon completion of a successful transfer, the *capacity transferor* may request to reduce its *capacity auction deposit*, if applicable, as specified in Section 3.4.

– End of Section –

Appendix A: Template for DR Residential Contributor Management Registration

This excel template is available in Online IESO under residential contributor management:

Contributor Address	LDC Name	LDC Account#	Control Group Flag (Y/N)
(Street # & Name, City, Province, Postal Code)			
E.g. 123 Street Ave, Toronto, ON, L5C 2B3			

– End of Section –

Appendix B: Template for Measurement Data Control Sheet

This template is available in Online IESO.

Resource ID	Contributor ID	Contributor Name	Commitment Month	Time Interval for which data was estimated

– End of Section –

References

Document ID & Link	Document Title
MDP_RUL_0002	Market Rules for the Ontario Electricity Market
IMP_GDE_0088	Market Manual 1.3: Identity Management Operations Guide
PRO-408	Market Manual 1.5: Market Registration Procedures
MDP_PRO_0027	Market Manual 4.2: Submission of Dispatch Data in the Real-Time Energy and Operating Reserve Markets
IMP_PRO_0034	Market Manual 4.3: Real-Time Scheduling of the Physical Markets
MDP_PRO_0045	Market Manual 5.4: Prudential Support
MDP_PRO_0033	Market Manual 5.5: Physical Markets Settlements Statements
IMP_PRO_0035	Market Manual 7.3: Outage Management
IESO_MAN_0077	Market Manual 9.2: Submitting Operational and Market Data for the DACP

– End of Document –