IESO_MAN_0041

MARKET MANUAL

Independent Electricity System Operator

Market Manual 9: Day-Ahead Commitment Process

Part 9.0: Day-Ahead Commitment Process Overview

Issue 12.0

This document provides an overview of the Day-Ahead Commitment Process market manual.

Disclaimer

The posting of documents on this website is done for the convenience of *market participants* and other interested visitors to the *IESO* website. Please be advised that, while the *IESO* attempts to have all posted documents conform to the original, changes can result from the original, including changes resulting from the programs used to format the documents for posting on the website as well as from the programs used by the viewer to download and read the documents. The *IESO* makes no representation or warranty, express or implied, that the documents on this website are exact reproductions of the original documents listed. In addition, the documents and information posted on this website are subject to change. The *IESO* may revise, withdraw or make final these materials at any time at its sole discretion without further notice. It is solely your responsibility to ensure that you are using up-to-date documents and information.

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.

Document ID	IESO_MAN_0041
Document Name	Part 9.0: Day-Ahead Commitment Process Overview
Issue	Issue 12.0
Reason for Issue	Issued released for Baseline 34.1
Effective Date	December 2, 2015

Document Change History

Issue	Reason for Issue	Date
	For changes prior to 2011, refer to versions 11.0 and prior	
10.0	Issued in advance of Baseline 26.1 for the implementation of EDAC.	October 12, 2011
11.0	Issued in advance of Baseline 33.1 to update the IESO logo	March 31, 2015
12.0	Issue released for Baseline 34.1	December 2, 2015

Table of Contents

List of Figures

List of Tables

Table of Changes

Reference (Paragraph and Section)	Description of Change
Sections 2.3, 3.2, and 5	Added information for Hourly Demand Response (HDR) resources.

1. Market Manuals

The *market manuals* consolidate the market procedures and associated forms, standards, and policies that define the processes that occur during the operation of the *IESO-administered markets*. They address and expand on various activities described in the *market rules*. However, where the provisions in the *market manuals* differ from the *market rules*, the *market rules* will prevail.

- End of Section -

2. About this Manual

This document is Part 9.0 of the *market manuals* and provides an overview of "Market Manual 9: Day-Ahead Commitment Process".

The "Day-Ahead Commitment Process Manual" contains the following parts**:**

Table 2-1: Table of Contents—Market Manual 9

Document ID	Part No.	Name of Procedure Document
IESO_MAN_0041	9.0	Day-Ahead Commitment Process Overview
IESO_MAN_0076	9.1	Submitting Registration Data for the Day-Ahead Commitment Process
IESO_MAN_0077	9.2	Submitting Operational and Market Data for the Day-Ahead Commitment Process
IESO_MAN_0078	9.3	Operation of the Day-Ahead Commitment Process
IESO_MAN_0079	9.4	Real-Time Integration of the Day-Ahead Commitment Process
IESO_MAN_0080	9.5	Settlement for the Day-Ahead Commitment Process

2.1 Purpose

The "Day-Ahead Commitment Process Manual" provides the procedures necessary for participating in the Day-Ahead Commitment Process (DACP), and for understanding the resulting *settlements* treatment. The specific steps to be followed are detailed in the individual parts of this manual and include registering *facilities*, submitting *dispatch* and daily generation data, operating during and after the DACP, and through the *settlements*.

2.2 Scope

This manual provides an overview of the DACP. The procedural workflows and steps described in component parts of the "Day-Ahead Commitment Process Manual" serve as a roadmap for *market participants* and the *IESO*, and reflect the requirements set out in the *market rules* and applicable *IESO* policies and standards.

2.3 Who Should Use this Manual

This manual is intended to be used if you are:

- Submitting registration data to the *IESO* in order to participate in the DACP, or
- Submitting daily generation data (DGD) and *dispatch data* for use in the DACP

The *market participants* listed below are required to perform the tasks identified:

1. *Generators* having dispatchable *generation facilities* are responsible for:
   - Submitting new and revised registration data
   - Submitting day-ahead *offers* for *energy* and *operating reserves* for *registered facilities* participating in the DACP in the required timeframe
   - Submitting daily generation data for *registered facilities* participating in the DACP in the required timeframe
   - Making revisions to daily generation data or *dispatch data*, if desired/applicable, within the required timeframe
   - Accepting day-ahead commitments and meeting those commitments in real time
   - Notifying the *IESO* when you intend to withdraw from your day-ahead commitment
2. *Generators* having a combined cycle *facility* that wish to be modeled as a *pseudo unit* in the DACP are responsible for:
   - Submitting new and revised registration data
   - Submitting day-ahead *offers* for *energy* and *operating reserves* for *registered facilities* participating in the DACP in the required timeframe
   - Submitting daily generation data for *registered facilities* participating in the DACP in the required timeframe
   - Making revisions to daily generation data or *dispatch data*, if desired/applicable, within the required timeframe
   - Accepting day-ahead commitments and meeting those commitments in real time
   - Notifying the *IESO* when you intend to withdraw from your day-ahead commitment
3. *Generators* having *self-scheduling generation facilities* are responsible for:
   - Submitting new and revised registration data
   - Submitting day-ahead *self-schedules* of *energy* within the required timeframe
   - Making revisions to *dispatch data*, if desired and applicable, within the required timeframe
4. *Generators* having intermittent *generation facilities* are responsible for:
   - Submitting new and revised registration data
   - Submitting day-ahead forecasts of *energy* as an input to the DACP within the required timeframe
   - Making revisions to *dispatch data*, if desired and applicable, within the required timeframe
5. *Dispatchable Loads* are responsible for:
   - Submitting day-ahead *bids* for *energy* and day-ahead *offers* for *operating reserves* for *registered facilities* participating in the DACP in the required timeframe
   - Making revisions to *dispatch data*, if desired and applicable, within the required timeframe
6. *Hourly demand response (HDR)* resources are responsible for:
   - Submitting day-ahead *demand response energy bids* for available *demand response (DR)* resources in the required timeframe
   - Making revisions to *dispatch data*, if desired and applicable, within the required timeframe

7. *Boundary Entities* are responsible for:
    - Submitting and revising day-ahead *offers* and *bids* for *energy* and offers for *operating reserve* as an input to the DACP in the required timeframe
    - Making revisions to *dispatch data*, if desired and applicable, within the required timeframe

2.4 Conventions

The standard conventions followed for *market manuals* are as follows:

- The word 'shall' denotes a mandatory requirement.
- Terms and acronyms used in this *market manual* including all parts thereto that are italicized have the meanings ascribed thereto in Chapter 11 of the "Market Rules".
- Double quotation marks are used to indicate titles of legislation, publications, forms and other documents.
- Throughout this *market manual* "we", "our", "us" refers to the *IESO* and unless otherwise specified, "you", "your" and "yours" refers to *market participants* in the *IESO-administered markets* and the DACP.
- The times referred to in this manual are Eastern Standard Time (EST).
- Submission of data before, during and after DACP refers to *dispatch data* and daily generation data submitted day-ahead for next day operation.
- The documents referred to in this manual are available on our website at: http://www.ieso.ca/Pages/Participate/Market-Rules-and-Manuals-Library.aspx
- Reports will be published at: http://reports.ieso.ca/index.html

Any procedure-specific convention(s) shall be identified within the procedure document itself.

- End of Section -

3. About the Day-Ahead Commitment Process

3.1 Background

The Day-Ahead Commitment Process (DACP) was implemented in 2006 and was enhanced in 2011. Information on the evolution of the DACP can be found in Appendix A – DACP Background.

3.2 Optimization Process Overview

The DACP uses a dedicated calculation engine[1] to optimize *energy* and *operating reserve* for the 24 hours of the next day. The day-ahead calculation engine (DACE) operates over three passes to determine the least-cost security-constrained solution for a *dispatch day* based on the day-ahead *bids* and *offers* submitted by all resources.

The three passes of the DACE perform the following functions:

- **Pass 1: Commitment Pass** - determines the initial set of committed Day-Ahead Production Cost Guarantee (DA-PCG) eligible *generator facilities* and imports required to satisfy average hourly forecast *demand*.
- **Pass 2: Reliability Pass** - commits additional DA-PCG-eligible *generators*, imports or reductions to *dispatchable load* or exports to satisfy peak hourly forecast *demand*.
- **Pass 3: Scheduling Pass** - calculates day-ahead constrained schedules for all resources based on average hourly forecast *demand*.

The DACP process requires that *dispatchable loads, dispatchable generators,* and *HDR* resources submit initial *dispatch data* between 06:00 and 10:00 day-ahead that reflects expected conditions. Otherwise, they will not be eligible for dispatch in real time. The *dispatch data* submissions provide a declaration of a participant's capability and intent to submit *dispatch data* in real time. We need these submissions to make a meaningful assessment of the next day's capacity and *energy* situation, and to ensure that we take the appropriate actions to maintain the *reliability* of the *IESO-controlled grid*.

Except for eligible energy-limited resources (EELRs), no changes[2] to initial *dispatch data* are permitted without our approval during the period when the DACP process is underway (between 10:00 and 14:00). We will provide EELRs with a one hour window to revise their *offers* to respond to the scheduling requirements of resources with hydroelectric dependencies. This window will typically be between 11:00 and 12:00 unless we notify you otherwise. Between 12:00 and 14:00,

[1] The DACP uses a dedicated calculation engine that is separate from the Pre-dispatch and real-time dispatch system optimizer (DSO).

[2] Reference required to list of valid reasons for change.

EELRs are subject to the same *dispatch data* submission restrictions that apply to other dispatchable resources during the DACP.

We will *publish* the final DACP run results in the *DACP Schedule of Record* by 15:00. The schedules and commitments resulting from the *DACP Schedule of Record* are the basis for all day-ahead guarantees.

To give dispatchable generators and imports an incentive to perform in real time, the DACP *offers* two *reliability* guarantees:

- A day-ahead production cost guarantee (DA-PCG), offered to all dispatchable generators that receive a DACP schedule and meet certain qualification criteria
- A day-ahead intertie offer guarantee (DA-IOG), available to all imports that receive a schedule in the DACP

3.3 DACP Timeline

The timeline for the DACP process is summarized below and illustrated in Figure 3-1. These events are part of the larger timeframe for integration of the DACP with the *real-time market.*

1. We issue a pre-market System Status Report (SSR) for the next day, no later than 05:30.
2. The DACP *bid*/*offer* submission window opens at 06:00.
3. The DACP *regulation* submission scheduling window closes at 09:00.
   At this time, an updated SSR is issued for the next day.
4. The submission deadline for requests for *Segregated Mode of Operation* is 09:00. Requests received after 09:00 will be assessed on a best effort basis and may not be used in the DACP.
5. The DACP *bid*/*offer* submission window closes at 10:00.
6. At 10:00, we will initiate the DACE.
7. Between 10:00 and 15:00 day-ahead, the DACE co-optimizes *energy* and *operating reserve* over a 24-hour period for the next day.
   - Following the completion of the first run of the DACE, certain ELRs will be allowed an opportunity to submit revised *dispatch data* to resolve sub-optimal scheduling of these resources.
   - We will commence a second run of the DACE using this updated information. Prior to *publishing*, we will make an assessment of the commitments and constrained schedules produced by the optimization.
   - Results of the DACP optimization will be *published* no later than 15:00. The *dispatch data* submitted by dispatchable generators and *dispatchable loads* considered in this optimization will be used to produce the Availability Declaration Envelope for the next day.
8. *Pre-dispatch schedules* for the next day will not be published between 10:00 and 15:00.The first Pre-dispatch run to include the results of the DACP will commence at 15:07 and the results will be published before 16:00. This first pre-dispatch run will include results for HE17 – HE24 of the current dispatch day and HE1 – HE24 of the next day.

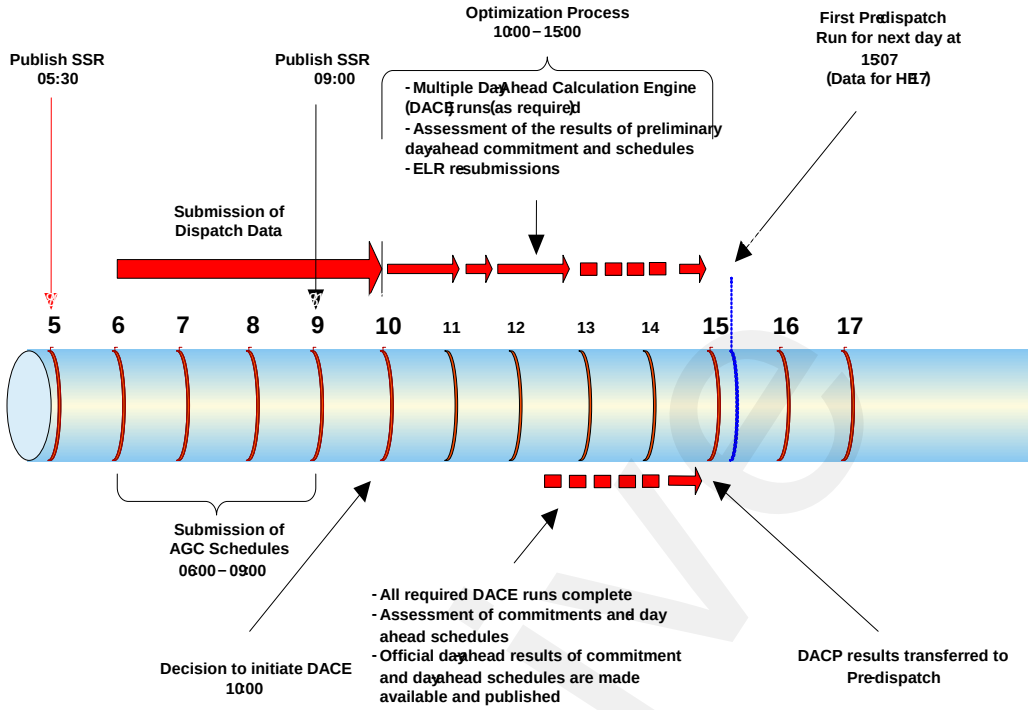

Figure 3-1: Timeline Showing DACP Process Overview

- End of Section -

4. Procedures Summary

4.1 Interrelationship of the Procedures

Figure 4-1 shows the composition of this *market manual* and how the procedures, trigger events, and other *market manuals* interrelate.

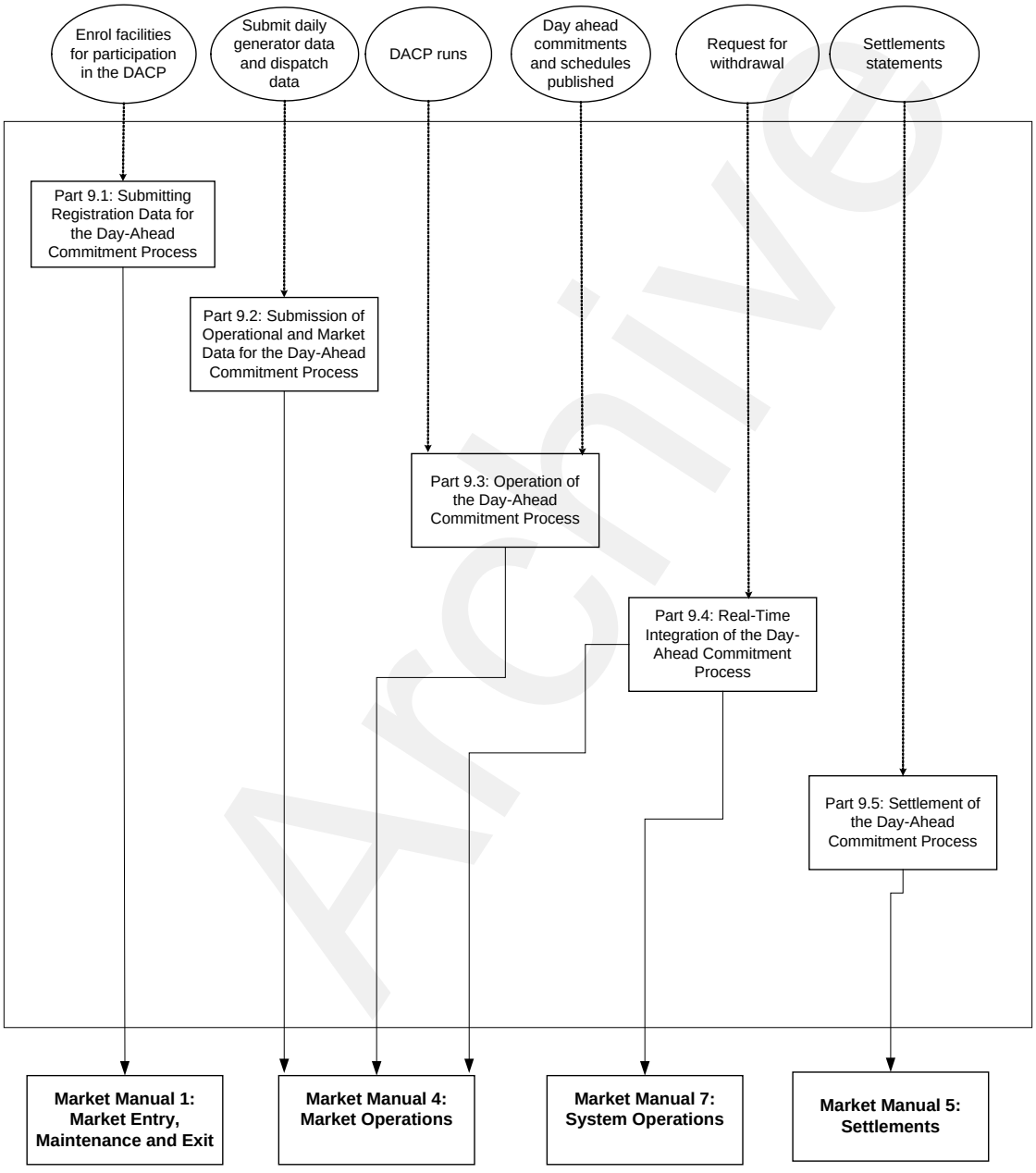

Figure 4-1: Interrelationships of the Day-Ahead Commitment Manual and Other Market Manuals

4.2 About the Procedures in this Manual

This *market manual* describes the steps you must take in order to participate in the Day-Ahead Commitment Process by submitting the required registration data. It also includes the procedure for submitting the data necessary to receive a schedule or commitment from the DACP or to withdraw from that commitment. Finally, this *market manual* describes the *settlements* procedures relating to the charges and guarantees resulting from a day-ahead commitment.

Participation in the DACP requires that *market participants* and the *IESO* perform certain actions within clearly defined timeframes. The timeframes for performing these actions are specified within each procedure in this *market manual*.

- End of Section -

5. Applicability of Procedures

The table below summarizes the most common situations or events that are likely to trigger activities described in this *market manual*. To use this table, select an event, then refer to the appropriate procedures document listed in the "Procedure" column.

A list of all procedure documents that comprise this *market manual* can be found in Section 2 of this document.

Table 5-1: Events and Procedures

Event	Procedure (Manual Part Number)
You wish to enroll for participation in the DACP.	Part 9.1: Submitting Registration Data for the Day-Ahead Commitment Process
You are a dispatchable *generator* or have a *dispatchable load* in the DACP and you wish to: • Make an *offer* or *bid* for *energy* • Make an *offer* for *operating reserves* • Revise an *offer* or *bid* for *energy* • Revise an *offer* for *operating reserves*	• Part 9.2: Submission of Operational and Market Data for the Day-Ahead Commitment Process • Part 9.3: Operation of the Day-Ahead Commitment Process
You are an *hourly demand response resource* and you wish to: • Make a *bid* to indicate demand response availability • Revise a *bid* to reflect changes to demand response availability	
You have a *self-scheduling generation facility* and wish to submit a *self-schedule* in the DACP.	
You have an intermittent *generation facility* and wish to provide a forecast of *energy* which you expect to provide in the DACP.	
You wish to submit or revise an *offer* or *bid* of *energy* or *operating reserve* in the DACP for a *boundary entity*.	
You are a dispatchable generator, or have a *dispatchable load* or *intertie* transactions and receive a schedule or commitment from the DACP, or are an *hourly demand response* resource and receive a standby notice from the DACP.	Part 9.3: Operation of the Day-Ahead Commitment Process
You have a commitment from the DACP and wish to withdraw from your commitment.	Part 9.4: Real-time Integration of the Day-Ahead Commitment Process
You are subject to a guarantee payment or a charge from the DACP.	Part 9.5: Settlement of the Day-Ahead Commitment Process.

- End of Section –

Appendix A: DACP Background

The Day-Ahead Commitment Process (DACP) was implemented in June of 2006 to address *reliability* issues that were exacerbated by two factors:

- *Energy* imports that failed to materialize in real time
- Difficulty in accurately forecasting and managing next-day *energy* shortfalls

The DACP with *reliability* guarantees provided:

- A dependable view of the next day's available supply (capacity and *energy*) and anticipated *demand*
- An opportunity for participants to use their energy-limited resources to most effectively meet *reliability* needs
- An incentive to imports that have been scheduled day-ahead to flow in real time
- An incentive to ensure sufficient internal generation resources are online in real time
- A way to mitigate the financial risk of commitment for importers and *generators*
- A mechanism for us to commit *generation facilities*, with the participant's agreement, when market-driven attempts in the day-ahead do not meet *reliability* needs

These guarantees allowed for the scheduling of imports day-ahead to give us more certainty that the *energy* would be delivered in real time. At the same time, it gave importers more time to navigate adjacent markets and coordinate with neighbouring jurisdictions. The DACP provided a guarantee that imports would not risk being settled at a loss if their real-time price-based revenues turned out to be less than their day-ahead as-offered cost.

For *generators*, the DACP lowered the financial risk associated with commitment by paying the *generators* if they did not recover their commitment costs through *real-time market* revenues. It also allowed them to use energy-limited resources (ELRs) to help solve *reliability* issues and assisted them in navigating other markets (e.g., gas).

The enhanced DACP, implemented in 2011, is largely an integration of new components with the original Day-Ahead Commitment Process, Pre-dispatch and *real-time dispatch processes* to improve the efficiency of the current market. This integration requires modification to market rules, *market manuals*, procedures, IT systems, and business processes. The enhanced DACP allows the commitment of certain dispatchable *generation facilities* and the economic scheduling of imports in the day-ahead time frame, in return for a financial guarantee. The Enhanced Day-Ahead Commitment (EDAC) project introduced the following new or revised features to the new DACP:

- A separate calculation engine that optimizes *energy* and *operating reserve* over a 24-hour *dispatch day*
- Optimizes using 'total' costs for committable *generation facilities* (start-up, speed-no-load, and incremental *energy* costs via three part *offers*)
- Revised cost guarantee principles
- Revised/new failure charges
- The inclusion of exports and linked wheel transactions
- A daily opportunity to revise certain parameters associated with *generation units* when the technical characteristics of the *facility* change

- A model for combined cycle *facilities* that provides better scheduling of these *facilities*

- End of Document –