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## Market Renewal Program: Energy

# MARKET BILLING AND FUNDS ADMINISTRATION

## Detailed Design

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Issue 1.0

*This document provides a detailed overview of the processes related to Market Billing and Funds Administration that will be implemented for the Energy work stream of the Market Renewal Program, including related market rules and procedural requirements.*

**Disclaimer**

This document provides an overview of the proposed detailed design for the Ontario Market Renewal Program (MRP) and must be read in the context of the related MRP detailed design documents. As such, the narratives included in this document are subject to on-going revision. The posting of this design document is made exclusively for the convenience of *market participants* and other interested parties.

The information contained in this design document and related detailed design documents shall not be relied upon as a basis for any commitment, expectation, interpretation and/or design decision made by any *market participant* or other interested party.

The *market rules*, *market manuals*, applicable laws, and other related documents will govern the future market.

## Document Change History

Issue	Reason for Issue	Date
1.0	First publication for external stakeholder review.	November 28, 2019

## Related Documents

Document ID	Document Title
DES-13	MRP High-level Design: Single Schedule Market
DES-14	MRP High-level Design: Day-Ahead Market
DES-15	MRP High-level Design: Enhanced Real-Time Unit Commitment
DES-16	MRP Detailed Design: Overview
DES-17	MRP Detailed Design: Authorization and Participation
DES-18	MRP Detailed Design: Prudential Security
DES-19	MRP Detailed Design: Facility Registration
DES-20	MRP Detailed Design: Revenue Meter Registration
DES-21	MRP Detailed Design: Offers, Bids and Data Inputs
DES-22	MRP Detailed Design: Grid and Market Operations Integration
DES-23	MRP Detailed Design: Day-Ahead Market Calculation Engine
DES-24	MRP Detailed Design: Pre-Dispatch Calculation Engine
DES-25	MRP Detailed Design: Real-Time Calculation Engine
DES-26	MRP Detailed Design: Market Power Mitigation
DES-27	MRP Detailed Design: Publishing and Reporting Market Information
DES-28	MRP Detailed Design: Market Settlement
DES-29	MRP Detailed Design: Market Billing and Funds Administration

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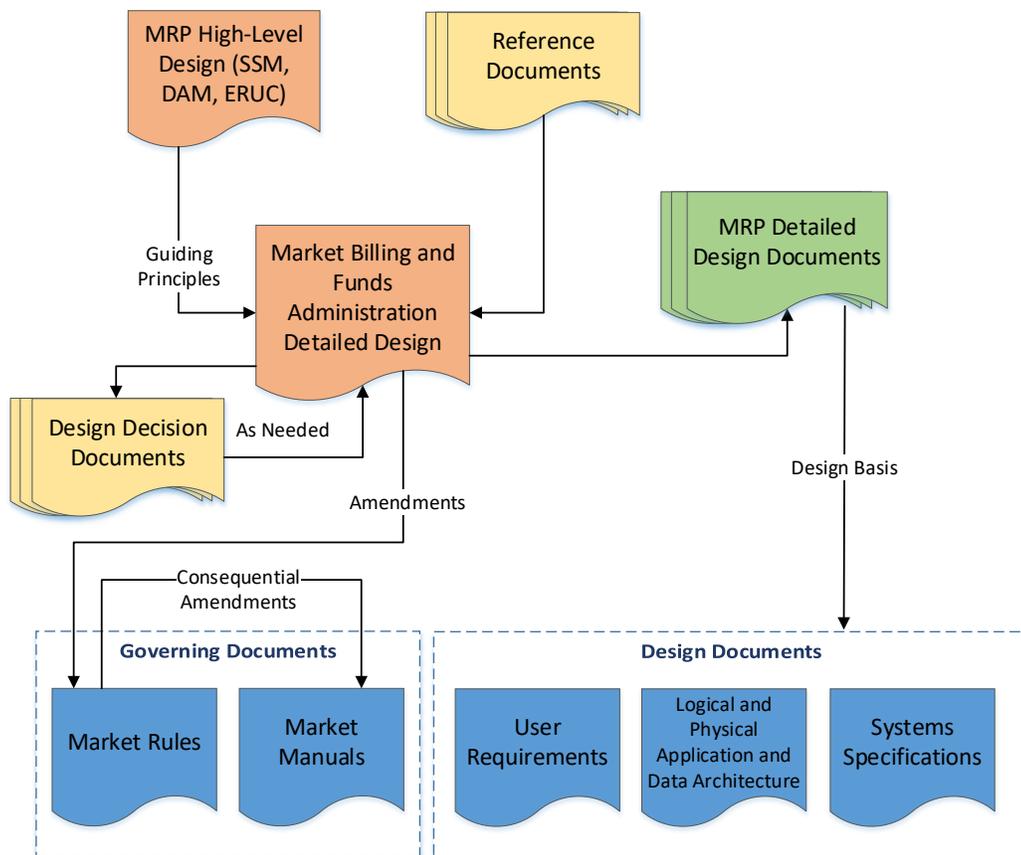
<b>Reference (Section and Paragraph)</b>	<b>Description of Change</b>

# 1. Introduction

## 1.1 Purpose

This document is a section of the Market Renewal Program (MRP) detailed design document series specific to the Energy work stream. This document provides the details of the business design and the requirements for *market rules*, market facing and internal procedures, and the data flow required to support the Market Billing and Funds Administration process as related to the introduction of the future day-ahead market and *real-time market*. This design document will aid the development of user requirements, business processes, *market rules* and supporting systems.

As illustrated in Figure 1-1, this document is part of the MRP detailed design document series and will provide the design basis for the development of the governing documents and the design documents.



**Figure 1-1: Detailed Design Document Relationships**

## 1.2 Scope

This document describes the Market Billing and Funds Administration process for the future *real-time market* and day-ahead market, in terms of:

- detailed functional design;
- supporting *market rules* requirements;
- supporting procedure requirements; and
- business process design.

Various portions of this document make references to current business practices, *market rules*, procedures and processes of Market Billing and Funds Administration. However, this document is not meant as a restatement of the existing design of the *IESO* process. Rather, this document focuses on existing components only to the extent that they might be used in the current or amended form in support of the future day-ahead market and *real-time market*.

## 1.3 Who Should Use This Document

This document is a public document for use by the MRP project team, pertinent *IESO* departments and external stakeholders. Portions of this document that are only pertinent to *IESO* internal processes and procedures may not be incorporated into the public version.

## 1.4 Assumptions and Limitations

### Assumptions:

While this document makes references to specific parameters that might be used in the Market Billing and Funds Administration process, this document may not determine what the value of all those parameters might ultimately be. The value of such parameters will be determined through the development of the *market rules* and *market manuals*.

### Limitations:

The business process design presented in Sections 2 and 6 of this document provides a logical breakdown of the various sub-processes described in the detailed business design presented in Section 3. However, factors such as existing and future system boundaries and system capabilities may alter the ultimate design of these sub-processes.

## 1.5 Conventions

The standard conventions followed for this document are as follows:

- Title case is used to highlight process or component names; and
- Italics are used to highlight *market rule* terms that are defined in Chapter 11 of the *market rules*.

## 1.6 Roles and Responsibilities

This document does not impart any specific roles or responsibilities. This document is intended to provide the design basis for development of the documentation associated with the *IESO* project lifecycle that will be produced in conjunction with the MRP.

## 1.7 How This Document Is Organized

This document is organized as follows:

- **Section 2** of this document briefly describes the current context of the Market Billing and Funds Administration process, and its context for the future *real-time market* and day-ahead market.
- **Section 3** of this document provides a detailed description of the business processes inferred from the high-level designs for Single Schedule Market (SSM), Day-Ahead Market (DAM) and Enhanced Real-Time Unit Commitment (ERUC).
- **Section 4** of this document describes how the Market Billing and Funds Administration process will be enabled under the authority of the *market rules* in terms of existing rule provisions, amended rule provisions and additional rule provisions that will need to be developed.
- **Section 5** of this document describes how the requirements of the Market Billing and Funds Administration process are expected to impact the market-facing manuals and internal procedures in terms of existing procedures, amended procedures and additional procedures that will need to be developed.
- **Section 6** of this document provides an overview of the arrangement of *IESO* processes supporting the overall Market Billing and Funds Administration process described in Section 3. This section also outlines the logical boundaries and interfaces of the various sub-processes related to Market Billing and Funds Administration in terms of existing processes, amended processes and additional processes that will need to be developed.

– End of Section –

## 2. Summary of the Current and Future State

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### 2.1 The Market Billing and Funds Administration Process in Today's Physical and Financial Electricity Markets

The *IESO* generates and processes *invoices* for *market participants* in both the *physical market* and the financial market. *Market participants* receive *invoices* based on the market in which they transacted. The Market Billing and Funds Administration process receives *settlement amounts* from the *settlement process* to prepare *invoices* based on the charges represented on the *preliminary* and *final settlement statements*.

*Settlement statements* are generated each day for both the financial and *physical markets* for those *market participants* that have transacted on the *trading day*. *Preliminary settlement statements* provide estimated amounts that the *market participants* owe or are owed for the days in the *billing period* for which a *final settlement statement* has not yet been prepared. There are currently two distinct *billing periods* for *market participant* transactions:

- Financial market: the *billing period* is a calendar week trading period and *invoices* are issued weekly; and
- *Physical market*: the *billing period* is a calendar month trading period and *invoices* are issued monthly.

Payments due from the *market participant* to the *IESO* are reflected in debit *invoices*, and payments due to the *market participant* from the *IESO* are reflected in credit *invoices*.

The *IESO* may produce manual *invoices*, as required, for various costs relating to the *physical markets*. These are costs that are not included in the *settlement charge types* that form part of the *physical markets settlement statements*. These may include, but are not restricted to:

- finance charges on late payments;
- compliance penalties;
- return of prepayment monies on account with the *IESO*; and
- *costs* relating to arbitration.

A manual *invoice* may also be issued when a successful *transmission rights (TR) bidder* fails to remit to the *IESO* any payment due on account of a *TR* awarded.

Under *market rules* Chapter 9, Section 6.2, the *IESO* produces a *Settlement Schedule & Payments Calendar (SSPC)* each year for both the financial and *physical markets*. The *SSPC* specifies the timing for issuance of *invoices*, *market participant payment dates* and the *IESO* payment dates in

accordance with Chapter 9, Section 6.3 of the *market rules*. Table 2-1 lists the current market *settlement* timelines for both the financial and *physical markets*.

**Table 2-1: Current Market Settlement Timelines**

Market Type	Transaction Type	Invoice Issuance	Market Participant Payment Date	IESO Payment Date
Physical	Real-time market physical transactions  Procurement market transactions  Day-ahead commitment process (DACP) transactions  Prepayments (voluntary and margin call payments) for physical transactions  Payments to TR holders	Market Rules Chapter 9, Section 6.3.9 to 6.3.17		
		<ul style="list-style-type: none"> <li>Invoices are issued ten business days after the end of the billing period (calendar month).</li> </ul>	<ul style="list-style-type: none"> <li>The market participant payment date shall be the second business day following the issuance of the invoice.</li> </ul>	<ul style="list-style-type: none"> <li>The IESO payment date shall be the second business day after the corresponding market participant payment date.</li> </ul>
Financial	Transmission Rights  <ul style="list-style-type: none"> <li>Invoices are issued for TRs awarded in the applicable auction.</li> </ul>	Market Rules Chapter 9, Section 6.3.1 to 6.3.8		
		<ul style="list-style-type: none"> <li>Invoices are issued six business days after the end of the billing period (trading week).</li> </ul>	<ul style="list-style-type: none"> <li>The market participant payment date shall occur on the second business day after the invoice is issued.</li> </ul>	<ul style="list-style-type: none"> <li>The IESO payment date shall be the second business day after the corresponding market participant payment date.</li> </ul>

Market participants access invoices on the IESO Reports Site (<http://reports.ieso.ca/>). Invoices are in the XML format.

Each market participant must pay the full net invoice amount by the market participant payment date regardless of whether or not the market participant disputes the net amount. In the event that a market participant notifies the IESO that they have failed to receive an invoice on the date specified in the SSPC, the IESO must re-issue the invoice in accordance with market rules Chapter 9, Section 6.10.5. This invoice will be considered received on the date the re-sent invoice is sent to the market participant. The market participant payment date is on the second business day after the invoice issue date. The IESO payment date is on the second business day after the corresponding market participant payment date.

All payments by *market participants* to the *IESO* must be made via *electronic funds transfer* (EFT), including: direct deposit (basic EFT), wire payment or electronic data interchange (EDI) to one of the following *IESO* bank accounts:

- *physical market* payments must be made to the *IESO settlement clearing account*; and
- financial market transactions (*TR* payments, *TR* deposits) must be made to the *IESO TR clearing account*.

Payments from the *IESO* to *market participants* are made via EFT as a direct deposit.

For *IESO* bank account details, refer to Market Manual 5.9 Settlement Payment Methods and Schedule, Appendix B: *IESO* Bank Account Details.

The *IESO* produces a Statement of Activity (SOA) and sends it to *market participants* on the first *business day* of each calendar month for the previous calendar month. The SOA is referred to as the *monthly confirmation notice* in *market rules* Chapter 9, Section 6.13. The statement identifies opening balances, *invoices* issued, payments to the *market participant*, receipts from the *market participant*, closing balances, and past due summaries for each *market participant*.

To perform the above functions, the Market Billing and Funds Administration process relies upon various services and information from other *IESO* processes and *market participants*, including:

- *Settlement* data (including *metering data*, market data, *settlement* input data received via online forms and *SSPC*);
- Compliance data;
- *Market participant* data; and
- Prudential data.

Section 3 of this document describes how these various inputs will be used in the context of the MRP.

The Market Billing and Funds Administration process includes the following sub-processes:

- Market Invoicing and Payments;
- Market Accounting; and
- Market Cash Management.

Figure 2-1 illustrates the context of the Market Billing and Funds Administration process for the current IESO-administered markets.

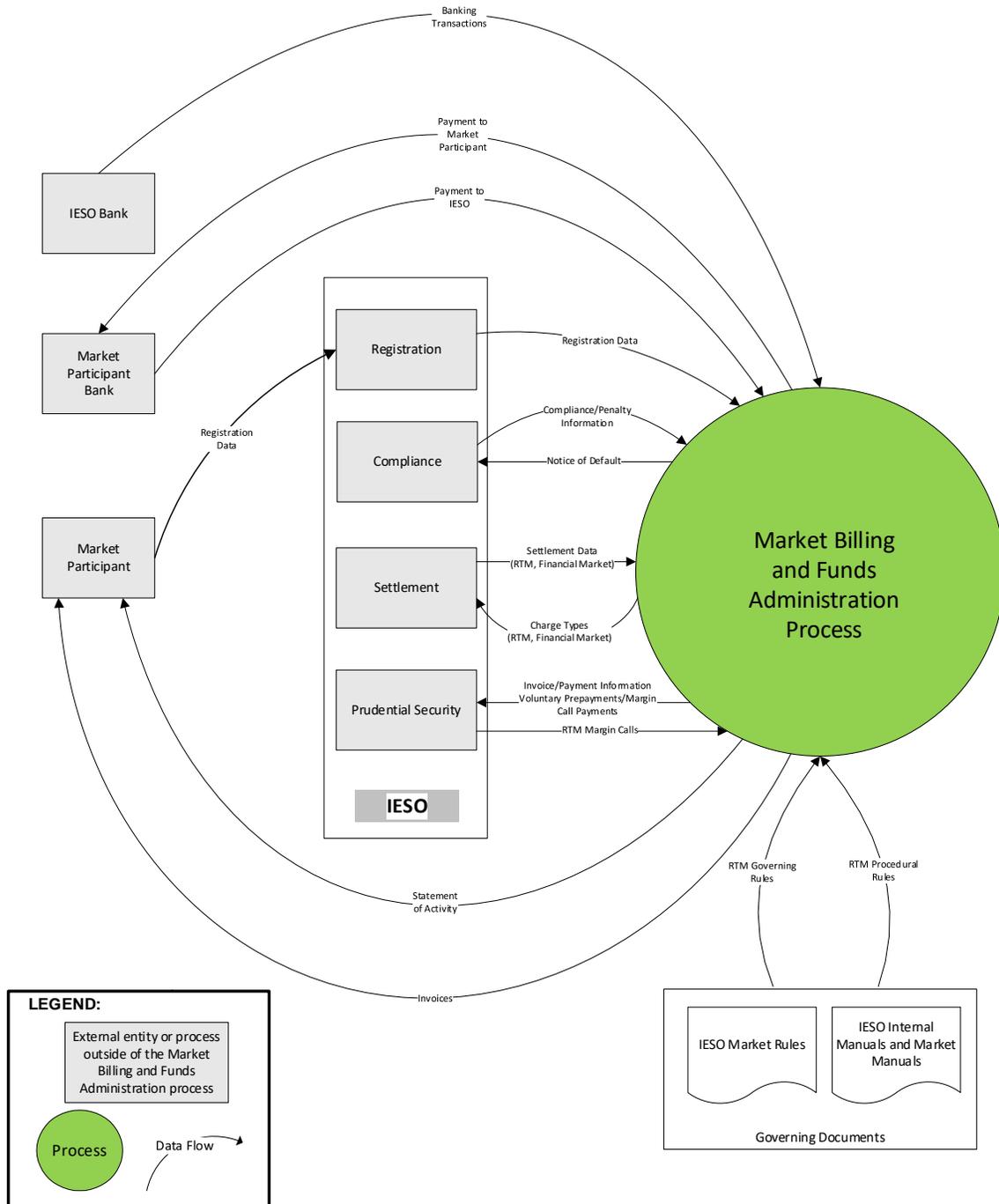


Figure 2-1: Current Market Billing and Funds Administration Process

## 2.2 The Placement of the Market Billing and Funds Administration Process in the Future Market

The *IESO* will continue to produce physical and financial *settlement invoices*. The day-ahead market introduces the following new transactions:

- DAM physical transactions;
- DAM virtual transactions; and
- DAM *TRs*.

Under the current invoicing framework, DAM physical transactions and virtual transactions, and associated uplift amounts will be incorporated into the monthly physical *invoice*. This consolidated *invoice* is a continuation of the same *invoice* currently supporting the *real-time market*. A consolidated *invoice* approach will:

- allow a *market participant* to see their entire position (with the exception of *TRs*) on one *invoice*;
- not increase banking costs associated with additional payments; and
- lessen the administrative burden associated with issuing and paying separate *invoices*.

DAM *TRs* will replace the use of *TRs* in the *real-time market* and the invoicing framework will remain unchanged. The following procedures will continue to apply:

- The weekly invoicing framework will continue to reflect only those transactions that occur as a result of a *TR auction*.
- *Settlement amounts* accruing to DAM *TR holders* will be settled and incorporated on the same consolidated monthly *invoice* with physical and DAM virtual transactions.

Table 2-2 illustrates how each of these different types of transactions will be *invoiced* in the future market.

**Table 2-2: Current Market and Future Market Invoices**

Market Type	Current Market	Future Market
<i>Physical</i>	<i>Monthly Invoice</i>	<i>Monthly Invoice</i>
	<ul style="list-style-type: none"> <li>• <i>Real-time market</i> physical transactions</li> <li>• <i>Procurement market</i> transactions</li> <li>• Day-ahead commitment process (DACP) transactions</li> <li>• Prepayments (voluntary and <i>margin call</i> payments) for physical transactions</li> <li>• Payments to <i>TR holders</i><sup>1</sup></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Real-time market</i> physical transactions</li> <li>• <i>Procurement market</i> transactions</li> <li>• DAM physical transactions                             <ul style="list-style-type: none"> <li>○ There will be DAM physical <i>charge types</i> and will show as separate line items</li> </ul> </li> <li>• Prepayments (voluntary and <i>margin call</i> payments) applied to that <i>billing period's invoice</i></li> <li>• DAM virtual transactions<sup>2</sup> <ul style="list-style-type: none"> <li>○ There will be DAM virtual transaction <i>charge types</i> and will show as separate line items</li> </ul> </li> <li>• Payments to DAM <i>TR holders</i></li> </ul>
<i>Financial</i>	<i>Weekly Invoice</i>	<i>Weekly Invoice</i>
	<i>Invoices</i> are issued for <i>TRs</i> awarded in the applicable auction.	<i>Invoices</i> are issued for DAM <i>TRs</i> awarded in the applicable auction.

<sup>1</sup> TRs entitle the owner to a payment when there is congestion at the intertie. TR owners must hold the right in the same direction as the congestion to receive payment. In the current market, these payments are made under *charge type 104 – Transmission Rights Settlement Credit*.

<sup>2</sup> Virtual transactions are part of the financial market, but they will not be included in the weekly financial market *invoice*. The DAM framework proposes that virtual transactions appear on the monthly physical *invoice*.

Table 2-3 lists the future market *settlement* timelines for both the financial and *physical* markets with the new transaction types. The *settlement* timelines remain unchanged in the future market.

**Table 2-3: Future Market Settlement Timelines**

Market Type	Transaction Type	Invoice Issuance	Market Participant Payment Date	IESO Payment Date
<i>Physical</i>	<ul style="list-style-type: none"> <li>• <i>Real-time market physical transactions</i></li> <li>• <i>Procurement market transactions</i></li> <li>• <i>DAM physical transactions</i></li> <li>• <i>DAM virtual transactions</i></li> <li>• <i>DAM TRs – payment to TR holders<sup>3</sup></i></li> </ul>	<i>Market Rules Chapter 9, Section 6.3.9 to 6.3.17</i>		
		<ul style="list-style-type: none"> <li>• <i>Invoices are issued ten business days after the end of the billing period (calendar month).</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>The market participant payment date shall be the second business day following the issuance of the invoice.</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>The IESO payment date shall be the second business day after the corresponding market participant payment date.</i></li> </ul>
Financial	DAM TRs <ul style="list-style-type: none"> <li>• <i>Invoices are issued for TRs awarded in the applicable auction.</i></li> </ul>	<i>Market Rules Chapter 9, Section 6.3.1 to 6.3.8</i>		
		<ul style="list-style-type: none"> <li>• <i>Invoices are issued six business days after the end of the billing period (trading week).</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>The market participant payment date shall occur on the second business day after the invoice is issued.</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>The IESO payment date shall be the second business day after the corresponding market participant payment date.</i></li> </ul>

The *market rules* for establishing *settlement accounts* and supporting EFT in the current market will continue to support the future market. It is anticipated that the bank accounts used for today's *real-time market* will continue to be used.

<sup>3</sup> TRs entitle the owner to a payment when there is congestion at the intertie. TR owners must hold the right in the same direction as the congestion to receive payment. In the future market, these payments will be made under a new *charge type* – DAM *Transmission Rights Settlement Credit*. In the current market, these payments are made under *charge type* 104 – *Transmission Rights Settlement Credit*.

## 2.2.1 New or Modified Input Flows into the Market Billing and Funds Administration Process

The following new or modified input flows will be part of the Market Billing and Funds Administration process in the future day-ahead market and *real-time market*.

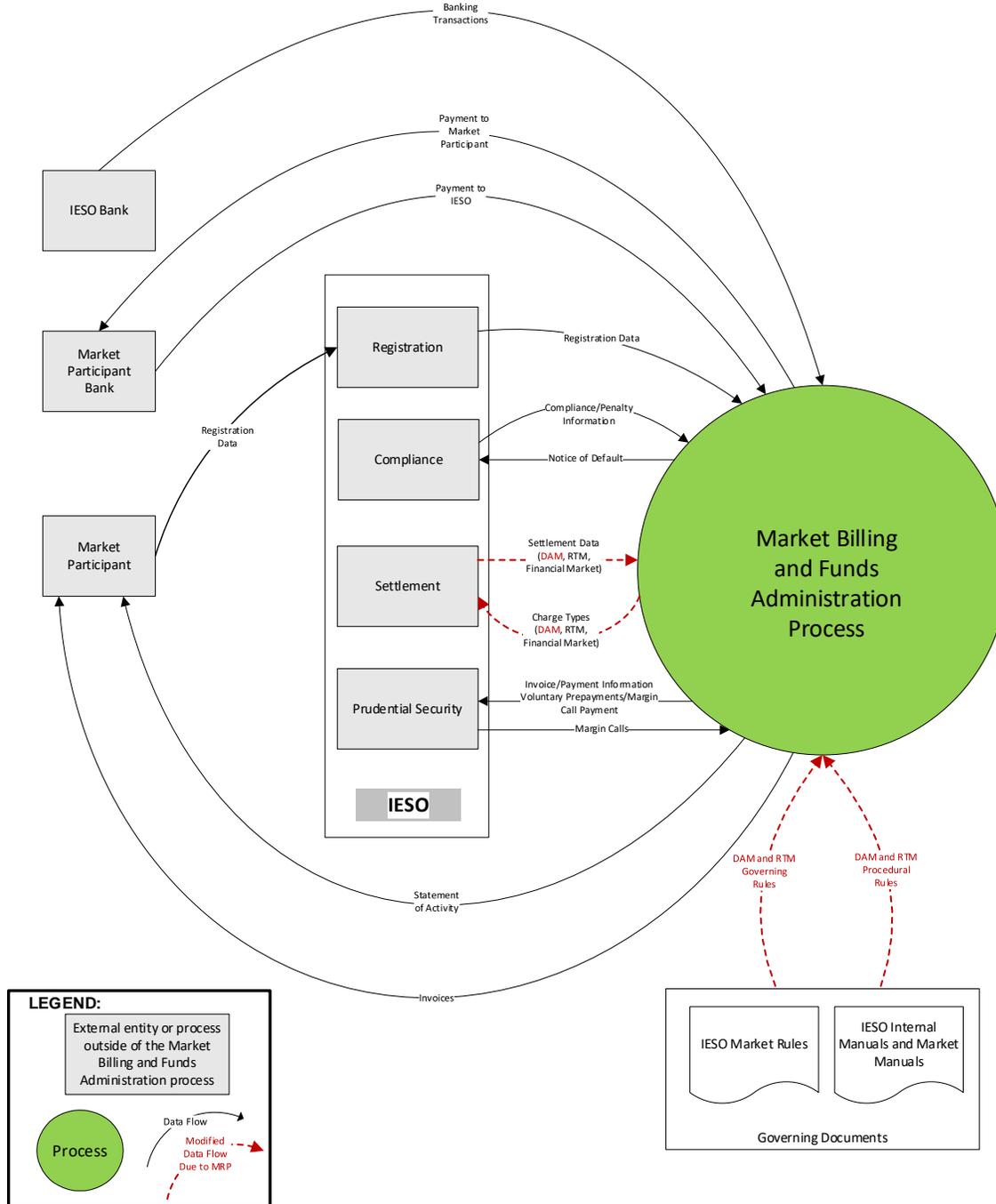
- **Prudential Prepayments:** With the introduction of the day-ahead market, *prudential support obligation* (PSO) and *actual exposure* will be separately calculated for physical transactions and virtual transactions. However, for the purposes of monitoring prudentials, the PSO and *actual exposure* for both physical and virtual transactions will be combined. As such, voluntary prepayments and *margin call* payments received by the IESO will not be differentiated between physical transactions and virtual transactions, and will continue to be aggregated and applied to reduce the *invoice*. This will be discussed in further detail in Section 3 of this document. For more information, refer to the Prudential Security detailed design document.
- **Settlement Data Stream:** This data stream will provide all *settlement amounts* related to the *real-time market* and day-ahead market, as occurs today for the *real-time market*. This will be discussed in further detail in Section 3 of this document. For more information, refer to the Market Settlement detailed design document.
- **Governing Rules:** The *market rules* will continue to govern all processes and define the obligations of both *market participants* and the IESO. MRP-related *market rule* requirements are discussed in Section 4 of this document.
- **Procedural Rules:** A series of external *market manuals* and internal manuals govern the procedural steps to be carried out by *market participants* and the IESO. The impact of the MRP on these procedures is further described in Section 5 of this document.
- **Reconciliation Queries and Processing Requirements:** *Market participants* will continue to interact with the sub-processes within the Market Billing and Funds Administration process under the renewed market, which includes the introduction of virtual transactions. The user interaction and logical boundaries of these sub-processes are further discussed in Section 6 of this document.

## 2.2.2 New or Modified Outputs from the Market Billing and Funds Administration Process

The following new or modified outputs will be part of the Market Billing and Funds Administration process in the future day-ahead market and *real-time market*.

- **New Line Items and Charge Types on the Monthly Consolidated Invoice:** All day-ahead market physical and virtual transactions will be consolidated onto the monthly *invoice*, and will be identified as separate line items with associated *charge types*.
- **Weekly Invoice Framework for Financial Transmission Rights:** Specific notations in the future *market rules* will refer to virtual transactions as part of the financial market, but they will not be included in the weekly financial market *invoice*. The DAM framework proposes that virtual transactions appear on the monthly *invoice*, while the weekly *invoice* will continue to contain only *settlement amounts* for the auction of TRs. As previously noted, DAM TRs will replace the use of TRs in the *real-time market* and will be settled at DAM prices.

Figure 2-2 illustrates the modifications of the Market Billing and Funds Administration process with the establishment of a day-ahead market.



**Figure 2-2: Future Market Billing and Funds Administration Process**

– End of Section –

## 3. Detailed Functional Design

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### 3.1 Structure of this Section

This section is sub-divided into the primary topic areas that represent the Market Billing and Funds Administration process. The design of the process will be discussed in terms of:

- Objectives;
- Definition of Transactions;
- Collection of Market Billing and Funds Administration Data;
- Settlement and Commercial Reconciliation;
- Financial Neutrality and Reconciliation Process; and
- Provision of Information to Related *IESO* Processes.

The above sub-sections generally cover the major topic areas of the Market Renewal Program (MRP) high-level design, and specifically, the design of the Market Billing and Funds Administration process in the context described in Section 2.2 of this document.

### 3.2 Objectives

The high-level designs for the MRP identify several objectives for the Ontario *energy and operating reserve real-time markets* and the day-ahead market. These objectives, when achieved, will provide significant improvements to the overall *IESO-administered markets*.

The Market Billing process will support MRP by:

- preparing and issuing *invoices to market participants*;
- incorporating DAM activity, for both physical and virtual transactions, into the monthly physical *invoice*;
- applying *market participant* voluntary prepayments and *margin call* payments to *invoices*;
- preparing and issuing statement of activity; and
- supporting the Prudential Security process through notification of *invoice* information, including voluntary prepayments and *margin call* payments received from *market participants*.

The Funds Administration process will support MRP by:

- creating new *charge types*;
- determining the tax treatment of *charge types*;
- reconciling and maintaining *IESO-administered markets*; and
- managing and investing cash associated with monies deposited by, and to be paid to, *market participants* by the *IESO* for settlement purposes.

## 3.3 Definition of Transactions

### 3.3.1 Definition of Physical and Virtual Transactions

The formal definitions of these two transaction types are as follows:

- **Physical Transaction:** A purchase or sale of *energy* or the sale of class *r operating reserve* in the day-ahead market coupled with the consumption or delivery of a quantity of the corresponding *energy* or selling of class *r operating reserve* in the *real-time market* during the corresponding real-time *settlement hour*.
- **Virtual Transaction:** A purchase or sale of *energy* in the day-ahead market with subsequent consumption or delivery of *energy* in the *real-time market* during the corresponding real-time *settlement hour*.

The *settlement amounts* stemming from both types of transactions will be provided to the Market Billing and Funds Administration process by the *settlement process*. A transaction must be designated as either physical or virtual by the *market participant* at the time of DAM *bid/offer* submission. It is a requirement of the DAM *settlement process* to calculate the *settlement amounts* of both types of transactions.

### 3.3.2 Definition of Financial Transactions

The formal definition of a financial transaction is:

- **Financial Transaction:** a financial hedge in one or both of the (i) day-ahead market by means of a virtual transaction<sup>4</sup>, or (ii) the *TR market*.

The *settlement amounts* stemming from financial transactions will be provided to the Market Billing and Funds Administration process by the *settlement process*.

## 3.4 Collection of Market Billing and Funds Administration Data

### 3.4.1 Overview of Input Requirements

#### Registration Data

As part of the Registration process, each *market participant* is required to provide information as directed by the *market rules*. The data inputs are entered through the *IESO's* web-based registration system – Online IESO. Online IESO is an online repository for all of the *market participant's* information and documents related to their participation in the *IESO-administered markets*.

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<sup>4</sup> Virtual transactions are part of the financial market, but they will not be included in the weekly financial market *invoice*. The DAM framework proposes that virtual transactions appear on the monthly *invoice*.

Applicants will continue to submit organization information through Online IESO, including their bank information as part of the Register Organization process. Modifications to Online IESO will be required to accommodate the distinction between physical transactions and virtual transactions. This process will identify authorized *market participants* with DAM virtual trading privileges.

## Settlement Data

New and modified *settlement amounts* will be required that are unique to the day-ahead market. These *settlement amounts* will be assigned unique *charge types* that identify DAM physical and virtual transactions on *settlement statements* and *invoices*. These new and modified *charge types* will be required by the Market Invoicing and Payments sub-process for processing *invoices* and the Market Accounting sub-process for reconciliation purposes.

## Compliance Data

*Market participants* whose *invoice* payments are late or have not been paid in full by the end of banking hours on the payment due date as specified in the *SSPC* will be considered in default. The Market Invoicing and Payments sub-process will identify outstanding payments and the *market participants* who are in default of payment.

- **Physical market:** Late payment charges start accruing immediately after the *market participant payment date*, until the monthly *invoice* is paid in full. Once payment has been received in full by the *IESO*, the late payment charges will be aggregated and a financial charge *invoice* for the interest payable will be issued by the Market Invoicing and Payments sub-process. The provisions of *market rules* Chapter 3, Section 6.3 shall apply.
  - In some cases, the *IESO* may determine that it is appropriate to issue a letter of non-compliance or impose a financial penalty as per *market rules* Chapter 3, Section 6.6, in addition to the financial charge *invoice*. In such cases, the Market Invoicing and Payments sub-process will issue, as directed, an *invoice* for compliance penalty.
- **Financial market:** Where a successful *TR bidder* fails to remit to the *IESO* any payment due on account of a *transmission right* awarded to that *TR bidder* during a *TR auction* on the applicable *market participant payment date*, the provisions of *market rules* Chapter 8, Section 4.20 will apply and the *TR bidder* will be considered to be in default of payment.
  - The *TR bidder* shall forfeit either its *TR market deposit* or that portion of its *TR market deposit* that is equal to 10% of the value of all *transmission rights* awarded to the *TR bidder* during the applicable *TR auction*, whichever is less.

## Treasury Cash Management Data

Under the Market Cash Management sub-process, the treasury management system used by the *IESO*, will record the following information as it relates to the *IESO-administered markets*:

- Cash transactions that have gone through the *IESO's* bank accounts, such as receipt of voluntary prepayments and *margin call* payments;
- *Invoice* payments made by *market participants* to the *IESO*; and
- All payments made by the *IESO* to *market participants*.

To facilitate the Market Billing and Funds Administration process, an automated process will transfer the information recorded by the treasury management system to the financial system.

### 3.4.2 Collection of Information

#### Settlement Data

*Settlement* data will be collected from the *settlement* system and transferred via an interface into the financial system to produce *invoices*. The interface will automatically select all *final* and *preliminary settlement amounts* daily for the trading period and aggregate the amounts per *charge type* to create a debit or credit *invoice* for each *market participant* in the *billing period*. There will continue to be two distinct *billing periods* for *market participant* transactions:

- Financial market: the *billing period* is a calendar week trading period and *invoices* are issued weekly; and
- *Physical market*: the *billing period* is a calendar month trading period and *invoices* are issued monthly.

Where a *final settlement statement* for the *physical market* is not yet available for days within the *billing period*, *preliminary settlement statements* will be used to prepare the *invoice*. Any net difference between these *preliminary settlement statements* and the subsequent *final settlement statement* will be reflected in the *invoice* for the next *billing period*.

#### Prepayments

##### Physical Market

In the current market, the *IESO* applies voluntary prepayments and *margin call* payments received for the *physical market* to the monthly *invoice* to offset any amounts owed to the *IESO*. In the future market, voluntary prepayments and *margin call* payments received by the *IESO* will not be differentiated between physical transactions and virtual transactions. Voluntary prepayments and *margin call* payments received from *market participants* after the issuance of the previous month's *invoice* and up to one business day prior to the issuance of the current month's *invoice*, will be aggregated and applied to reduce the current month's *invoice*.

These voluntary prepayments and *margin call* payments, including payment of the monthly *invoice* will continue to be made to the *IESO settlement clearing account*.

##### Financial Market

Where a DAM *TR* participant has been awarded a *TR* in a *TR auction* and their *TR market deposit* consists in whole or in part of a cash deposit (DAM *TR* prepayment), the *IESO* will apply the cash deposit to offset any amounts owed to the *IESO* for the purchase of that *TR*. All payments made to the *IESO* for the DAM *TR* are deposited into the *IESO TR clearing account*.

#### Prudential Support

*Market participants* with virtual trading privileges will be required to post an amount of *prudential support* (PSO), similar to *market participants* with physical trading privileges. As a result, *prudential support obligations* and *actual exposure* will be separately calculated for *market participants* under

the two trading privileges. However, for the purposes of monitoring prudentials, the PSO and *actual exposure* for both physical and virtual transactions will be combined.

Physical and virtual exposure will be combined as part of prudential monitoring. *Market participants* transacting in virtual transactions will be required to provide an absolute maximum daily trading limit in MWh to allow the IESO to calculate a *prudential support obligation* (PSO). This will allow *market participants* to have some control over the *prudential support* that they are required to post. See the Prudential Security detailed design document for further information.

## Registration Data

Online IESO will continue to maintain information on every *market participant*. As part of the Registration process, each *market participant* will be required to provide information as directed by the *market rules*, including general contact information, financial and market information and the *market participant's* intention to import/export *energy* to/from the *IESO-controlled grid*. For further information, refer to the Authorization and Participation detailed design document.

### 3.4.3 Collection of Payments

Information from the *IESO settlement clearing account* and the *IESO TR clearing account* will be required to accommodate the Market Billing and Funds Administration process. Information on cash receipts and disbursements will be acquired from the Market Cash Management sub-process within Treasury and used to update the financial system. Account data will be maintained for each *market participant*, and account activity will be reflected in the monthly SOA. Accounts Payable will pay out any monies owed on the fourth *business day* after *invoice* issuance.

### 3.4.4 Inventory of Data Inputs

Table 3-1 summarizes the various sources of required data and the major areas where each of these types of data is used in the Market Billing and Funds Administration process.

**Table 3-1: Major Uses of Data within the Market Billing and Funds Administration Process**

Data Source	Type of Input Data	Usage within the Market Billing and Funds Administration Process
<i>Settlement</i>	<i>Real-time market</i> physical transactions <i>Procurement market</i> transactions DAM physical transactions DAM virtual transactions Payment to DAM <i>TR holders</i> <sup>5</sup>	Monthly transactional activity

<sup>5</sup> TRs entitle the owner to a payment when there is congestion at the intertie. TR owners must hold the right in the same direction as the congestion to receive payment.

Data Source	Type of Input Data	Usage within the Market Billing and Funds Administration Process
<i>Settlement</i>	DAM <i>TR</i> transactions ( <i>TR auctions</i> )	Weekly transactional activity
Settlement Schedule and Payments Calendar ( <i>SSPC</i> )	Timelines for payments due to/owing from <i>market participants</i>	Identify applicable <i>billing periods</i> for: <ul style="list-style-type: none"> <li>• <i>physical market</i></li> <li>• <i>financial market</i></li> </ul>
Online IESO	Registration Data	<i>Market participant</i> banking and contact information
Treasury Management	Cash receipts and disbursement transactions: <i>IESO settlement clearing account</i> and <i>IESO TR clearing account</i>	Reconciling voluntary prepayments and <i>margin call</i> payments received by <i>market participants</i> and <i>invoices</i> paid
Compliance	Penalties, Arbitration/Mediation Costs to be <i>invoiced</i>	To be charged to <i>market participants</i>

### 3.4.5 General Continuance of the Existing Invoice and Payment Framework

Modifications will be required to the Market Billing and Funds Administration process with the introduction of the day-ahead market. The principle modifications will be to incorporate all DAM-related transactions – physical, virtual and financial – into the current *invoicing* and payment frameworks.

Interaction between the Market Billing and Funds Administration process, Settlement and Treasury will remain largely unchanged:

- the *settlement process* will continue to inform of new *charge types* and modifications to existing *charge types* and provide the *settlement amounts* to be *invoiced*; and
- the Treasury process will continue to inform of cash receipts and disbursements.

The following sub-sections describe how the principle modifications will be integrated with the existing *real-time market* construct.

## 3.5 Settlement and Commercial Reconciliation

### 3.5.1 Settlement Information Used in Market Billing

As previously stated, new and modified *settlement amounts* will be required that are unique to the day-ahead market. These *settlement amounts* will be assigned unique *charge types* that identify DAM physical and virtual transactions on *settlement statements* and *invoices*.

These new and modified *charge types* will be required by the Market Billing and Funds Administration process for processing *invoices* and for reconciliation purposes.

### 3.5.2 Establishing Charge Types

The implementation of MRP will result in both new and modified *charge types*.

*Settlement charge types* with codes and descriptions will be created in the financial system. The financial system will facilitate any changes to *settlement charge types* as well. Any additions or changes will then be replicated to the *settlement* system to process the *settlement amounts*. See Appendix D for a listing of *settlement amounts* that will be new, amended, replaced or will be disposed of under MRP.

### 3.5.3 Harmonized Sales Tax (HST)

Under the *market rules*, all *market participants*, except ones who transact only in the financial market, are required to register for the GST/HST. Information on procedures to register and on other GST/HST-related requirements can be obtained from the Canada Revenue Agency's (CRA) main web site – <https://www.canada.ca/en/revenue-agency.html>. Importers and exporters of electricity will also require an import/export account with Customs. For more information on this, refer to the Canada Border Services Agency (CBSA) website at [www.cbsa-asfc.gc.ca](http://www.cbsa-asfc.gc.ca). *Market participants* can apply for this account when they register for GST/HST.

### 3.5.4 HST Treatment

The *settlement process* uses *settlement-ready* data to calculate all the charges and payments for the *billing period*. *Energy* charges are based on *settlement-ready* data from the Revenue Metering process. As a GST/HST registrant, the *IESO* will collect taxes from *market participants* in accordance with all rules and regulations set out by the CRA. In consultation with CRA, HST applicability will be assessed for all physical and virtual transactions in both the *real-time market* and the day-ahead market and will be applied to those *settlement charge types* as deemed appropriate by CRA.

The *IESO* abides by all rules and regulations set out by the CRA and will be seeking guidance on the tax treatment of new *charge types* introduced under MRP.

#### HST Treatment for Physical Transactions

In the context of the current *real-time market*, the CRA has ruled that for GST/HST purposes only, the *IESO* will be treated as the principal for all transactions administered by the *IESO*. These transactions include buying and reselling *energy* and other property and services from/to *market participants*. In the future market, with the introduction of DAM physical transactions, the *IESO* will continue to be treated as if it is a principal to the transaction.

DAM *physical transactions* contain three components that are of interest from a GST/HST standpoint:

1. a day-ahead market buying or selling position for *energy* or *operating reserve* whereby a price and quantity are secured in a day-ahead timeframe;
2. a *real-time market* position that is based upon the actual amount of physical *energy* bought or sold or *operating reserve* provided, relative to the original day-ahead market position; and
3. a DAM *physical bilateral contract* position for *energy*.

## HST Treatment for Virtual Transactions

*Market participants* using virtual transactions submit virtual *offers* and *bids* for *energy* in the day-ahead market. These virtual transactions do not represent the physical delivery or consumption of *energy* in the *real-time market* during the corresponding real-time *settlement hour*. Rather, *market participants* submit virtual *bids* or *offers*. If their virtual *bid* or *offer* is accepted in the market-clearing process, they become entitled to receive, or obligated to pay, a financial *settlement amount* based on the difference between the DAM price and the real-time price.

### 1. Virtual Supply

A virtual supply is an *offer* to sell a stated quantity of *energy* at a specified location at a specified price for a specified hour in the day-ahead market. A virtual supplier receives the DAM locational marginal price of *energy* for its DAM schedule and then must pay the real-time locational marginal price of *energy* to buy the scheduled megawatts in real time.

### 2. Virtual Demand

A virtual demand is a *bid* to buy a stated quantity of *energy* at a specified location at a specified price for a specified hour in the day-ahead market. Virtual demand pays the DAM locational price for its DAM schedule and then receives the real-time locational marginal price of *energy* as payment for selling the scheduled MWs in real time at the real-time price.

*Market participants* will be able to use virtual transactions to hedge the *energy* price difference between the *real-time market* and the day-ahead market. However, as noted above, *market participants* using virtual transactions do not physically buy or sell electricity in the *real-time market*. If *market participants* wish to physically sell or purchase electricity, they must do so through DAM physical transactions.

The *IESO* has some expectation on what the tax treatment will be for virtual transactions based on precedent and past CRA rulings. The CRA has previously ruled<sup>6</sup> that the transactions in the *energy* forward market constitute “financial services” for the purposes of HST and are therefore exempt from HST. While the *IESO* anticipates that the same interpretation will be applied to virtual transactions as these transactions mirror those in the *energy* forward market, the *IESO* will consult with CRA to determine the tax treatment for virtual transactions.

## HST Treatment for Uplifts

In the context of the current *real-time market*, the CRA has ruled that for GST/HST purposes, uplift *settlement amounts* are subject to HST when uplifted to loads within Canada.<sup>7</sup> The new uplifts will be distributed on a similar basis whereby common costs will be allocated in proportion to the real-time *energy* consumed.

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<sup>6</sup> See *HST Guide for IESO Transactions* (IMO\_GDE\_0002), Independent Electricity Market Operator, issue 29.0 section 6.1 regarding the ruling previously received for the *Energy Forward Market*. The ruling pertains to *EFM* transaction types that operate on the same principle as *virtual transactions*.

<sup>7</sup> See *IESO Charge Types and Equations* (IMP\_LST\_0001) for further details.

## HST Treatment for Financial Transactions

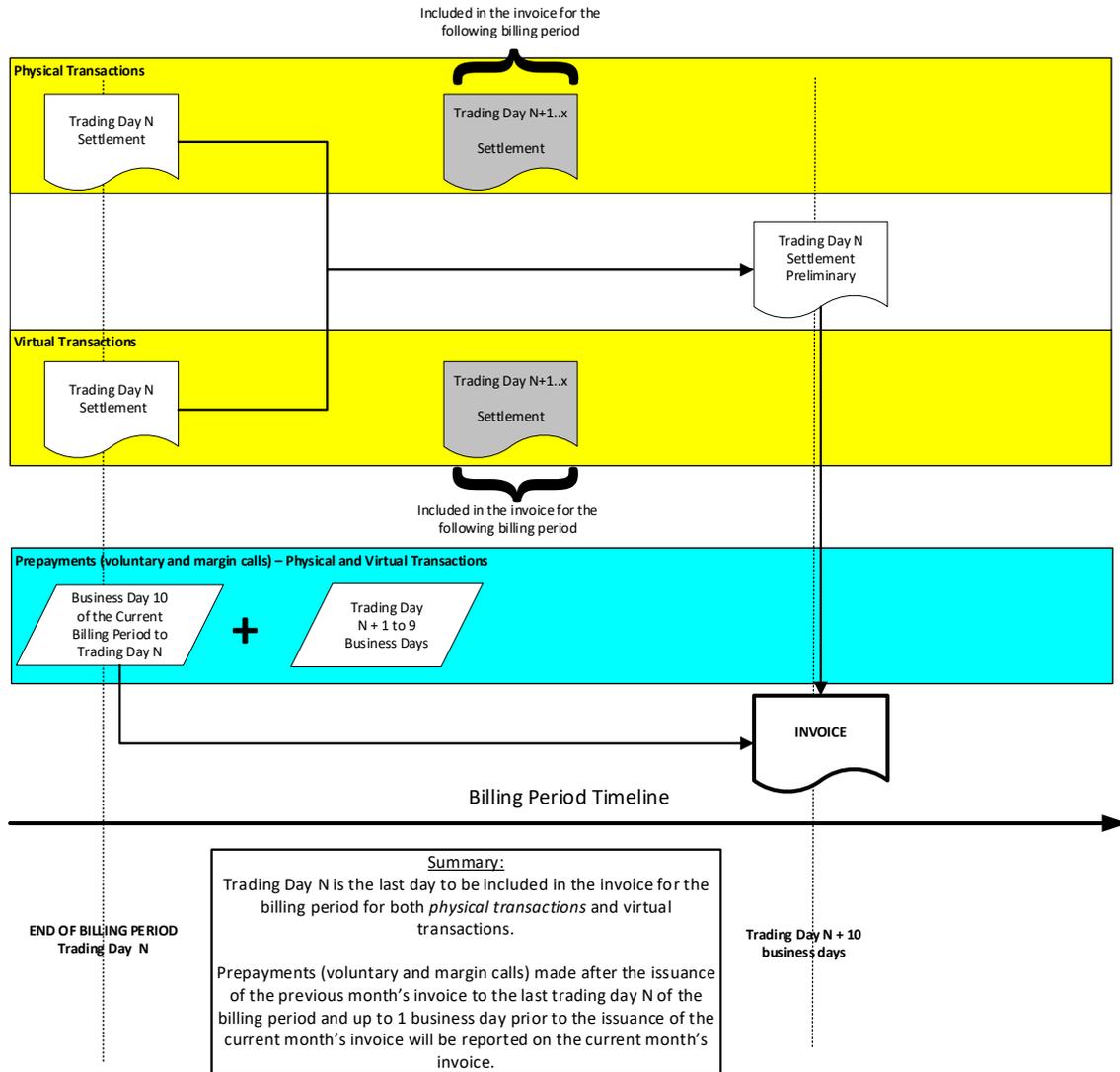
In the context of the current financial market, which includes the *TR market*, the CRA has ruled that for GST/HST purposes, transactions in the *TR market*, encompassing *TR auctions* and payment to *TR holders* constitute “financial services” for the purposes of HST and are therefore exempt from HST. In the future market, virtual transactions will be part of the financial market. HST treatment for virtual transactions is discussed in a previous section.

### 3.5.5 Settlement and Invoicing Timelines for the Future Real-Time and Day-Ahead Markets

#### Physical Market Timelines

The *physical market settlement* timelines for the issuance of *preliminary* and *final settlement statement* information, *invoicing*, *market participant* payments to the *IESO*, *IESO* payments to the *market participant* and submission of *Notice of Disagreements* (NODs) as specified in the *SSPC* will be maintained with the introduction of the day-ahead market.

Figure 3-1 depicts the *settlement* and invoicing timelines for the *physical market* with the inclusion of the day-ahead market.



**Figure 3-1: Settlement and Invoicing Timelines for the Future Real-Time and Day-Ahead Markets<sup>8</sup>**

### Financial Market Timelines

The financial market *settlement* timelines for the issuance of *preliminary* and *final settlement statement* information, *invoicing*, *market participant* payments to the *IESO*, *IESO* payments to the *market participant* and submission of *Notice of Disagreements* (NODs) as specified in the *SSPC* will be maintained with the introduction of the day-ahead market.

<sup>8</sup> Example, for the current *billing period* October 1-31, 2019: prepayments received as of October 15 (*business day* 10 of the current *billing period*) to October 31 (trading day N, last day of the current *billing period*) and November 1-14 (trading day N+1 to 9 business days) will be aggregated and included on the current *billing period's invoice*, issued November 15, 2019.

An exception to this is the treatment of virtual transactions. While specific notations in the future *market rules* will refer to virtual transactions as part of the financial market, virtual transactions will not be included in the weekly financial market *invoice*. The DAM framework proposes that virtual transactions appear on the monthly *invoice*, while the weekly *invoice* will continue to contain only *settlement amounts* for the *TR auction*<sup>9</sup>. The new *settlement* and billing of virtual transactions will be aligned with the *physical market*.

## Interfaces

The interface between the *settlement process* and the Market Invoicing and Payments sub-process will remain largely the same as it does today. The two main points of contact between these two processes are:

- the transfer of DAM *TR Auction* debits from the *settlement process* to the Market Invoicing and Payments sub-process on a weekly cycle as per current practices in the *IESO-administered markets*; and
- the transfer of all *settlement amounts* for physical transactions related to the *real-time market* and day-ahead market, including DAM virtual transactions and *settlement* for DAM *TR holders*, from the *settlement process* to the Market Invoicing and Payments sub-process on a monthly cycle as per current practices in the *IESO-administered markets*.

## 3.6 Financial Neutrality and Reconciliation Process

### 3.6.1 Financial Neutrality

The general principles of financial neutrality for transactions other than transactions in the *TR market*, are set out in Chapter 9, Section 6.16 of the *market rules*. The *settlement* control process will monitor the financial balance of the calculated charges and payments, which includes:

- *hourly market* transactions: sum of all payments for all *market creditors* will equal the sum of all charges for *market debtors* involved in *hourly market* transactions, for each *trading day* of a *billing period*.
- all other transactions: for monthly charges, adjustment charges and payments, the sum of all payments to *market creditors* of those transactions will equal the sum of all charges to *market debtors* of those transactions, for each *billing period*.

All *settlement amounts* will be transferred from the *settlement process* to the Market Invoicing and Payments sub-process and will maintain the necessary financial neutrality of the *IESO* as required under the *market rules*. For further information, see the Market Settlement detailed design document.

As previously stated, new and modified *settlement amounts* will be required that are unique to the day-ahead market. These *settlement amounts* will be assigned unique *charge types* that identify DAM

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<sup>9</sup> DAM *settlement* with DAM *TR holders* will appear on the monthly *invoice* and is distinct from *settlement* for the *TR auction*.

physical and virtual transactions on *settlement statements* and *invoices*. These new and modified *charge types* will be required by the Market Billing and Funds Administration process for processing *invoices* and for reconciliation purposes.

### 3.6.2 DAM Physical Transaction Reconciliation Process

Reconciliation of the *physical market* will need to take place between physical transactions in both the *real-time market* and the day-ahead market under the Market Accounting sub-process. In order to facilitate the reconciliation of these transactions, new *charge types* will be created and will be reflected as separate line items on the monthly *invoice*.

### 3.6.3 DAM Virtual Transaction Reconciliation Process

*Market participants* with virtual trading privileges will be required to post *prudential support*, similar to *market participants* with physical trading privileges. However, for the purposes of monitoring prudentials, the PSO for both physical and virtual transactions will be combined. The *prudential support obligation* will be separately calculated for physical transactions and virtual transactions.

*Invoiced* amounts for virtual transactions will reflect the cumulative monthly *settlement amounts* for the Hourly Virtual Transaction *Settlement Amount* (HVTSA) in addition to any voluntary prepayments and *margin call* payments received from the *market participant* after the issuance of the previous month's *invoice* and up to one *business day* prior to the issuance of the current month's *invoice*.

The Market Invoicing and Payments sub-process will be modified to include all DAM virtual transactions on the monthly *invoice*. Voluntary prepayments and *margin call* payments received by the *IESO* will not be differentiated between physical transactions and virtual transactions, and these payments will be aggregated and applied to bring down the *invoice*. New *charges types* will be created to reconcile virtual transactions under the Market Accounting sub-process.

## 3.7 Provision of Information to Related IESO Processes

### 3.7.1 Provision of Invoicing Information to the Prudential Security Process

In order for the Prudential Security process to assess the exposure of a *market participant*, voluntary prepayment and *margin call* payments received by the *IESO* and amounts *invoiced* must be communicated from the Market Invoicing and Payments sub-process to the Prudential Security process. In the future market, the *invoiced* amounts will include virtual transactions.

### 3.7.2 Provision of Funds Administration Information to the Compliance and Legal Process

The existing process for communicating *margin call* payment defaults for *prudential support* in the *physical market* will remain unchanged with the introduction of virtual transactions. Similar to the

current process, a *market participant* will be considered to be in default in any of the following scenarios if the *market participant*:

- does not pay an *invoice* within the two-day remittance period; or
- does not provide the required *prudential support* within the specified time limits; or
- does not satisfy a *margin call*.

For a complete list, refer to *market rules* Chapter 3, Section 6.3: Events of Default. A notice of default will be issued to the defaulting *market participant*. If the *event of default* is not rectified, this will be communicated to the Compliance and Legal process.

*Market participants* have two *business days* to make a payment to satisfy the *margin call*. If the *market participant* transacts in both virtual and physical transactions, they will not be permitted to continue to transact in virtual transactions until the *margin call* is satisfied.

### 3.7.3 Provision of Information to the Settlement Process

In the event of a *default levy* situation, the Market Accounting sub-process will provide the *settlement process* with the *default amount* to be recovered from *market participants*. The *settlement process* will calculate each *market participant's* proportionate share of the *default levy*.

One *default levy* will be issued for the entire *physical market* and will not be differentiated between virtual and physical transactions. The calculation of the appropriate *default levy* as a result of virtual trading will remain unchanged. The nature of *default levy* and its calculation will be determined by the *market rules*.

### 3.7.4 Invoice Delivery

The *IESO SSPC* specifies the dates for issuance of *settlement invoices*.

The *settlement* timelines for the issuance of *invoices* as specified in the *SSPC* will be maintained with the introduction of the day-ahead market.

The *IESO* will continue to produce manual *invoices*, when required, for various costs relating to the *physical market* and for virtual transactions that are not included in the *settlement charge types* that form part of the *settlement statements*.

A manual *invoice* will continue to be issued where a successful *DAM TR bidder* fails to remit to the *IESO* any payment due on account of a *DAM TR* awarded.

*Market participants* will continue to access *invoices* on the *IESO Reports Site* (<http://reports.ieso.ca/>). *Invoices* will continue to be in the XML format.

### 3.7.5 Statement of Activity

In the future market, the *SOA* will remain unchanged. Voluntary prepayments and *margin call* payments received by the *IESO* will not be differentiated between physical transactions and virtual transactions.

*Market participants* will continue to access these statements through the *IESO Reports Site* (<http://reports.ieso.ca/>).

### 3.7.6 Funds Transfer

All *settlement* payments by *market participants* to the *IESO* will continue to be made via *electronic funds transfer*, including: direct deposit (basic EFT), wire payment or electronic data interchange (EDI) to the following *settlement accounts*:

- *Physical market* transactions must be made to the *IESO settlement clearing account*; and
- Financial market transactions (DAM *TR* payments, DAM *TR* deposits) must be made to the *IESO TR clearing account*.

The *IESO* will continue to make all payments to *market participants* via EFT as a direct deposit.

– End of Section –

## 4. Market Rule Requirements

The *market rules* govern the *IESO-controlled grid* and establish and govern the *IESO-administered markets*. The *market rules* codify obligations, rights and authorities for both the *IESO* and *market participants*, and the conditions under which those rights and authorities may be exercised and those obligations met.

This section is intended to provide an inventory of the changes to *market rule* provisions required to support the Market Billing and Funds Administration detailed design, and is intended to guide the development of *market rule* amendments. This inventory is based on version 1.0 of the detailed design, and any revisions required to this section as a result of design changes to version 1.0 will be incorporated in the *market rule* amendment process. As a result, the inventory will not be updated after its publication in version 1.0 of this detailed design.

This inventory is not meant to be an exhaustive list of required rule changes, but is a snapshot in time based on the current state of design development of this specific design document. Resulting *market rule* amendments will incorporate the integration of the individual design documents.

New and amended Chapter 11 defined terms: These terms will be consolidated in a single document at a later time as part of the *market rule amendment* process, and will support multiple design documents.

The inventory is developed in Table 4-1, which describes the impacts to the *market rules* and classifies them into the following three types:

- Existing – no change: Identifies those provisions of the existing *market rules* that are not impacted by the design requirements;
- Existing – requires amendment: Identifies those provisions of the existing *market rules* that will need to be amended to support the design requirements; and
- New: Identifies new *market rules* that will likely need to be added to support the design requirements.

**Table 4-1: Market Rule Impacts**

Market Rule Section [Chapter No.], [Section No.]	Type	Topic	Requirement
Chapter 9, Section 1	Existing - requires amendment	Introductory Rules	This section sets out the purpose of this Chapter, including the rights and obligations of <i>market participants</i> and of the <i>IESO</i> in determining, billing and payments related to the <i>IESO-administered markets</i> , including the <i>real-time markets</i> and the <i>procurement markets</i> .  Section 1.1 - Application and Purpose

Market Rule Section [Chapter No.], [Section No.]	Type	Topic	Requirement
			<ul style="list-style-type: none"> <li>Section 1.1.2 – This section needs to be expanded to include the day-ahead market.</li> </ul> Overlap: Market Settlement design document
Chapter 9, Section 2	Existing - no change	Settlement Data Collection and Management	This section sets out the <i>market rules</i> around the collection and management of <i>settlement</i> data. <ul style="list-style-type: none"> <li>Provisions unaffected by the design changes specified in the Market Billing and Funds Administration design document.</li> <li>The <i>market rules</i> relating to collection and management of <i>settlement</i> data may be impacted by the Market Settlement design document.</li> </ul> Overlap: Market Settlement design document
Chapter 9, Section 3	Existing - no change	Determination of Hourly Settlement Amounts	This section sets out the <i>market rules</i> around the determination of hourly <i>settlement amounts</i> . <ul style="list-style-type: none"> <li>Provisions unaffected by the design changes specified in the Market Billing and Funds Administration design document.</li> <li>The <i>market rules</i> relating to the determination of <i>hourly settlement amounts</i> may be impacted by the Market Settlement design document.</li> </ul> Overlap: Market Settlement design document
Chapter 9, Section 4	Existing - no change	Non-hourly Settlement Amounts	This section sets out the <i>market rules</i> around the determination of non-hourly <i>settlement amounts</i> . <ul style="list-style-type: none"> <li>Provisions unaffected by the design changes specified in the Market Billing and Funds Administration design document.</li> <li>The <i>market rules</i> relating to the non-hourly settlement amounts may be impacted by the Market Settlement design document.</li> </ul> Overlap: Market Settlement design document
Chapter 9, Section 5	Existing - no change	Market Power Mitigation	This sections sets out the <i>market rules</i> around the settlement of the Market Power Mitigation Rebate. <ul style="list-style-type: none"> <li>Provisions unaffected by the design changes specified in the Market Billing and Funds</li> </ul>

<b>Market Rule Section</b> [Chapter No.], [Section No.]	<b>Type</b>	<b>Topic</b>	<b>Requirement</b>
			Administration design document. <ul style="list-style-type: none"> <li>• The <i>market rules</i> relating to the market power mitigation rebate may be impacted by the Market Settlement design document.</li> </ul> Overlap: Market Settlement design document
Chapter 9, Section 6	Existing - no change	Settlement Statements	This section sets out the <i>market rules</i> around <i>settlement statements</i> and <i>invoices</i> , including but not limited to processes, coverage, timing, and the responsibilities of <i>market participants</i> and of the <i>IESO</i> . <ul style="list-style-type: none"> <li>• Provisions for the following sections unaffected by design changes specified in the Market Billing and Funds Administration design document:                             <ul style="list-style-type: none"> <li>○ Section 6.1 – Communication of Settlement Information</li> <li>○ Section 6.3 – Settlement Cycles</li> <li>○ Section 6.4 – Settlement Statement Process</li> <li>○ Section 6.5 – Preliminary Statement Coverage</li> <li>○ Section 6.6 – Validation of Preliminary Settlement Statement</li> <li>○ Section 6.7 – Final Settlement Statement Coverage</li> <li>○ Section 6.8 – Settlement Statement Recalculations</li> <li>○ Section 6.9 – Responsibility of the IESO</li> <li>○ Section 6.11 – Payment of Invoices</li> <li>○ Section 6.12 – Funds Transfer</li> <li>○ Section 6.13 – Confirmation Notices</li> <li>○ Section 6.15 – Payment Errors, Adjustments, and Interest</li> <li>○ Section 6.17 – Audit</li> </ul> </li> </ul>

Market Rule Section [Chapter No.], [Section No.]	Type	Topic	Requirement
			<ul style="list-style-type: none"> <li>○ Section 6.18 – Settlement Accounts</li> <li>• The <i>market rules</i> for these sections may be impacted by the Prudential Security and the Market Settlement design documents.</li> </ul> <p>Overlap: Prudential Security design document, Market Settlement design document</p>
Chapter 9, Section 6	Existing - requires amendment	Settlement Statements	<p>This section sets out the <i>market rules</i> around <i>settlement statements</i> and <i>invoices</i>, including but not limited to processes, coverage, timing, and the responsibilities of <i>market participants</i> and of the <i>IESO</i>.</p> <p>Section 6.2 - Settlement Schedule and Payments Calendar:</p> <ul style="list-style-type: none"> <li>• Sections 6.2.1.2, 6.2.1.6, and 6.2.1.8 – These sections need to be expanded to include the day-ahead market.</li> </ul> <p>Section 6.10 – Settlement Invoices:</p> <ul style="list-style-type: none"> <li>• Section 6.10 – This section needs to be expanded to include the day-ahead market.</li> <li>• Add new Section 6.10.1.3: The <i>invoice</i> will include <i>settlement amounts</i> from the second <i>settlement</i>.</li> <li>• Add new Section 6.10.2.5: Specify that any prepayments for virtual transactions will also be applied to the monthly <i>invoice</i>.</li> </ul> <p>Overlap: Market Settlement design document</p> <p>Section 6.14 – Payment Default</p> <ul style="list-style-type: none"> <li>• Section 6.14.7 and 6.14.8 – This section needs to be expanded to include day-ahead market, <i>market creditors</i>.</li> <li>• As a matter of clean up, the term “<i>real-time market creditor(s)</i>” will be revised to “<i>real-time market, market creditor(s)</i>” in sections 6.14.7 and 6.14.8.</li> </ul> <p>Overlap: Prudential Security design document</p> <p>Section 6.16 – Settlement Financial</p>

Market Rule Section [Chapter No.], [Section No.]	Type	Topic	Requirement
			Balance/Maximum Amount Payable by <i>IESO</i> : <ul style="list-style-type: none"> <li>• Sections 6.16.1.1 and 6.16.1.2: These sections will need to extend the <i>IESO</i> financial neutrality restrictions to include day-ahead market <i>settlement amounts</i>.</li> <li>• Section 6.16.2: This section needs to be expanded to include the day-ahead market.</li> </ul> Overlap: Market Settlement design document
Chapter 9, Appendix 9.1	Existing - no change	VEE Process	This section sets out the <i>market rules</i> around the validation, estimation and editing of <i>metering data</i> . <ul style="list-style-type: none"> <li>• Provisions unaffected by the design changes specified in the Market Billing and Funds Administration design document.</li> <li>• The <i>market rules</i> relating to the VEE process may be impacted by the Market Settlement design document.</li> </ul> Overlap: Market Settlement design document
Chapter 9, Appendix 9.2	Existing - no change	[Intentionally left blank]	Section previously deleted, no change required.

– End of Section –

## 5. Procedural Requirements

### 5.1 Market-Facing Procedural Impacts

The existing *market manuals* and training materials related to the Market Billing and Funds Administration process will be retained to the extent possible. The majority of changes result from the introduction of physical, virtual and *TR* transactions in the future day-ahead market. The documents most directly related to the Market Billing and Funds Administration process are:

#### Market Manuals:

- Market Manual 5: Settlements, Part 5.6 - Physical Markets Settlement Invoicing;
- Market Manual 5: Settlements, Part 5.8 - Financial Markets Settlement Invoicing; and
- Market Manual 5: Settlements, Part 5.9 - Settlement Payment Methods and Schedule.

#### Forms:

- ‘Notification of Prepayment’ IMO\_FORM\_1130

Table 5-1 identifies sections within the *market manuals* and training materials that will require modification in the future market.

**Table 5-1: Impacts to Market-Facing Procedures**

Procedure	Type of change (no change, modification, new)	Section	Description
Market Manual 5 Settlements, Part 5.6 – Physical Markets Settlement Invoicing	Modification	1.1 - Purpose	<ul style="list-style-type: none"> <li>• Update references to “<i>physical markets</i>” to include: <ul style="list-style-type: none"> <li>• The day-ahead market (DAM), which consists of: <ul style="list-style-type: none"> <li>○ DAM physical transactions</li> <li>○ DAM virtual transactions</li> </ul> </li> </ul> </li> <li>• Revise references to “<i>transmission rights market</i>” to “<i>DAM transmission rights market</i>” (DAM TRs)</li> <li>• Add clarity around voluntary prepayments (no differentiation between physical prepayments and prepayments for virtual transactions)</li> </ul>

Procedure		Type of change (no change, modification, new)	Section	Description
Market Manual 5 Settlements, Part 5.8 – Financial Markets Settlement Invoicing		Modification	1.2 - Scope	<ul style="list-style-type: none"> <li>Revise references to “<i>transmission rights</i>” to DAM <i>transmission rights</i> (DAM TRs)</li> <li>Include overview of day-ahead market</li> </ul>
			1.3 – Overview of Financial Markets Invoicing	<ul style="list-style-type: none"> <li>Revise references to “<i>transmission rights market</i>” to DAM <i>transmission rights</i> (DAM TRs)</li> <li>Update sample <i>settlement invoice</i></li> </ul>
Market Manual 5 Settlements, Part 5.9 - Settlement Payment Methods and Schedule		Modification	1.3.4 – Transmission Rights Auction Payments to the IESO	Preface all references to “ <i>transmission rights</i> ” or DAM <i>transmission rights</i> (DAM TRs)
			1.5.1 – Payment Default	Update references to “ <i>transmission rights invoice</i> ” to “DAM <i>transmission rights invoice</i> ”
			1.5.4 – Transmission Rights Auctions Default	<ul style="list-style-type: none"> <li>Update references to “<i>transmission rights invoice</i>” to “DAM <i>transmission rights invoice</i>”</li> <li>Update references to “<i>TR participant</i>” to DAM <i>TR participant</i></li> </ul>
Technical Interface – Funds Administration: Financial Market Invoices Sample		Modification		Update sample <i>settlement invoice</i>
				Update sample <i>settlement invoice</i>
Training Materials - All	Modification	All		<ul style="list-style-type: none"> <li>All content will need to be revised to distinguish between physical transactions in the <i>real-time market</i> and day-ahead market and virtual transactions in the day-ahead market.</li> <li>General check for consistency with all market-facing procedures.</li> </ul>

## 5.2 Internal Procedural Impacts

All areas of internal procedures currently in use by the Market Billing and Funds Administration process will continue to be applicable in the future market.

Some of the internal procedures interact with various *IESO* processes related to the Market Billing and Funds Administration process. For the most part, the changes to the Market Billing and Funds Administration process under the MRP do not impact the internal manuals that address these related

areas. However, in some areas this may be contingent upon the tools impact of the day-ahead market. Moreover, there might be some modifications required to the existing procedures to group all of the procedural tasks within the Market Billing and Funds Administration process between physical transactions in the *real-time market* and day-ahead market and DAM virtual transactions.

In addition, some areas of the current procedures heavily reference relevant *market rules* and supporting tools, most of which will be undergoing changes as a result of the new day-ahead market implementation and MRP, including solution enhancements. The existing procedures will be updated to account for the corresponding changes in the *market rules* and tools.

Changes or additions to internal *IESO* procedures are for internal *IESO* use as documented in Appendix B and are not included in the public version of this document. Appendix B details the impacts to internal procedures in terms of existing procedures that support the new market requirements, existing procedures that need to be updated, and new internal procedures that need to be created to support the future *real-time market* and day-ahead market.

**– End of Section –**

## 6. Business Process and Information Flow Overview

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### 6.1 Market-Facing Process Impacts

This section provides an overview to the arrangement of processes required in order to support the overall Market Billing and Funds Administration process and the critical information flows between them.

The context diagrams presented in Section 2 of this document are considered as level 0 data flow diagrams and represent the major flows of information into and out of the Market Billing and Funds Administration process. This section now presents the Market Billing and Funds Administration process at the next level of detail (level 1). A further break-down of the processes presented in this section (i.e. levels 2,3,4...) falls into the realm of systems design and is beyond the scope of this document.

The data flow diagram does not illustrate:

- Flow of time or sequence of events (as might be illustrated in a timeline diagram);
- Decision rules (as might be illustrated in a Flowchart); and
- Logical architecture and Systems architecture (as might be illustrated in a Logical Application and Data Design, and/or Physical Application and Data Design).

What it does illustrate however, is a logical breakdown of the sub-processes that constitute a large and complex system such as the Market Billing and Funds Administration process. Specifically, the data flow diagram presented below illustrates:

- The Market Billing and Funds Administration process as a grouping of several major and tightly coupled sub-processes;
- The key information flows between each of the processes;
- External sources of key information required by the Market Billing and Funds Administration process;
- External destinations of key information from the Market Billing and Funds Administration process; and
- The same logical boundary of the Market Billing and Funds Administration process as illustrated in the Level 0 context diagram presented in Section 2 of this document.

This section is not meant to impart information systems or technology architecture, but rather to capture the entire Market Billing and Funds Administration process as a series of interrelated sub-processes.

The functional design outlined in Section 3 of this document maps to the business process overview presented in this section. In any areas where there are inconsistencies between this section and the description of the business process provided in Section 3, the business process described in Section 3 will take precedence.

The data flow diagram illustrated in Figure 6-1 presents the Market Billing and Funds Administration process for physical and virtual transactions activity. The following sections of this document will provide an overview to each of the main sub-processes of the Market Billing and Funds Administration process.

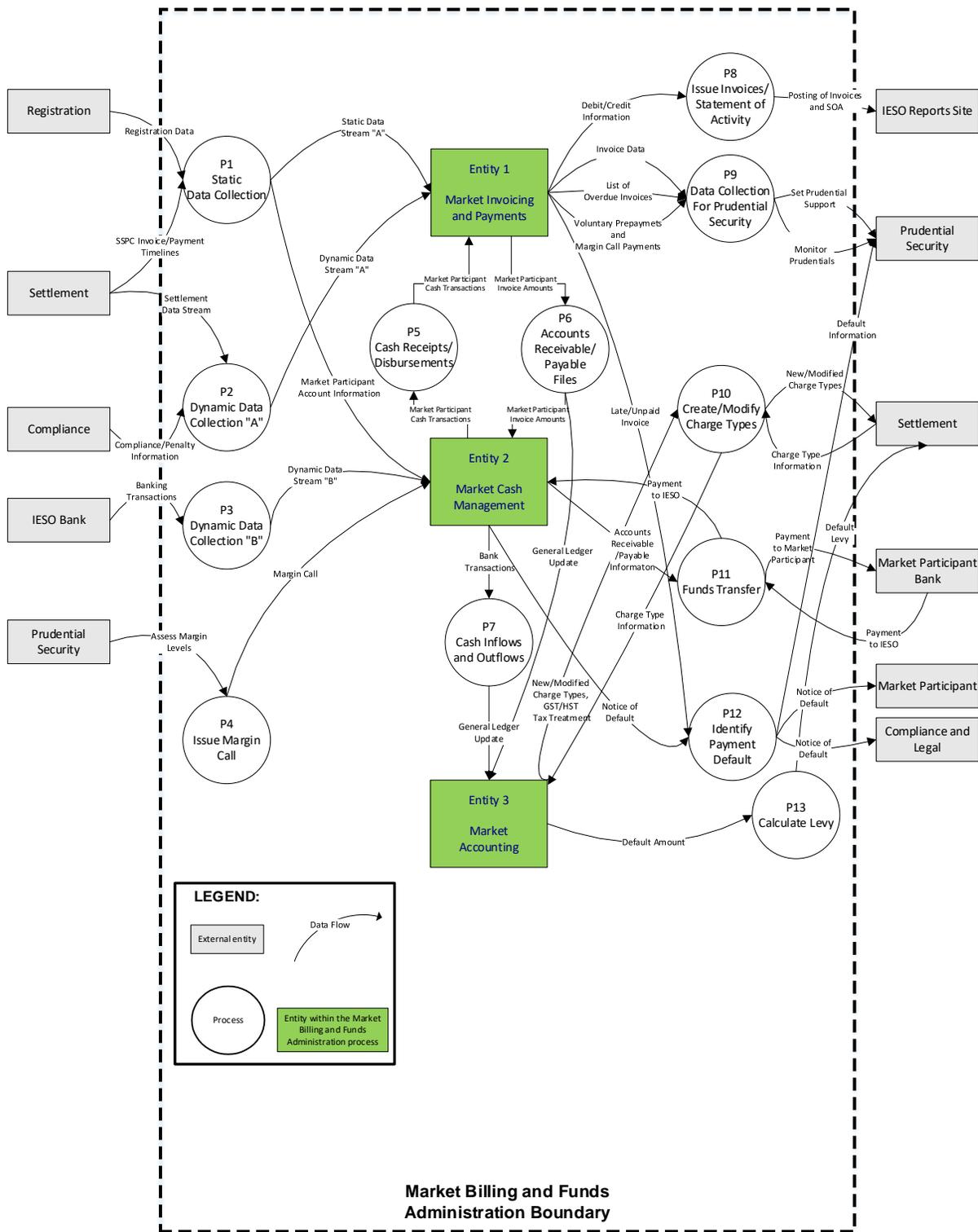


Figure 6-1: Market Billing and Funds Administration Process Data Flow Diagram – Level 1

## 6.1.1 Process P1 – Static Data Collection

### Description

Process P1 involves the orderly receipt of static data from two external entities outside of the Market Billing and Funds Administration process as follows:

1. Registration; and
2. Settlement.

The key processing steps for managing the data collection process are:

- validating data for correctness and completeness; and
- making the necessary components of the static data stream available to other sub-processes related to *market participant* account information and payment schedules.

This process largely relates to the collection of static data described in Section 3.4.

### Input and Output Data Flows

**Table 6-1: Process P1 Input and Output Data Flows**

Flow	Source	Target Processes	Frequency
Registration Data	Online IESO	Process P1	CDMS data is replicated in Funds Administration daily
<p><b>Description:</b></p> <ul style="list-style-type: none"> <li>• Collection of <i>IESO</i> registration data and specified documentation provided by <i>market participants</i> to support the Market Invoicing and Payments sub-process.</li> <li>• Includes: <ul style="list-style-type: none"> <li>○ <i>Market participant</i> name, ID#, billing address and <i>market participant</i> contact info;</li> <li>○ Banking information;</li> <li>○ GST/HST number;</li> <li>○ <i>Invoice</i> delivery method; and</li> <li>○ Identifying the market(s) and applicable programs in which the applicant intends to participate.</li> </ul> </li> </ul>			
Flows	Source	Target Processes	Frequency
SSPC Invoice/Payment/Timelines	Settlement	Process P1	SSPC issued yearly
<p><b>Description:</b></p> <ul style="list-style-type: none"> <li>• The <i>SSPC</i> is issued yearly in November for the following year and identifies <i>invoice</i> issuance and payment timelines. Timelines for the issuance and payment of manual <i>invoices</i> are not identified in the <i>SSPC</i>.</li> </ul>			
Static Data Stream “A”	Process P1	Market Invoicing and Payments	CDMS data is replicated in Funds Administration

			daily
<b>Description:</b>			
<ul style="list-style-type: none"> <li>Static data identified under the Registration Data flow collected by Process P1 are used in the Market Invoicing and Payments sub-process to generate <i>invoices</i>.</li> </ul>			
Flows	Source	Target Processes	Frequency
<i>Market Participant Account Information</i>	Process P1	Market Cash Management	Periodic updates triggered by changes
<b>Description:</b>			
<ul style="list-style-type: none"> <li>Portions of static data collected by Process P1 are used in Market Cash Management to initiate funds transfer.</li> <li>Includes:                             <ul style="list-style-type: none"> <li><i>Market participant</i> banking information and notifications of bank account changes.</li> </ul> </li> </ul>			

### 6.1.2 Process P2 – Dynamic Data Collection “A”

#### Description

Process P2 entails the orderly collection of dynamic data from various *IESO* processes outside of the Market Billing and Funds Administration process. This data is collected in order to generate *invoices*.

#### Input and Output Data Flows

Table 6-2: Process P2 Input and Output Data Flows

Flow	Source	Target Processes	Frequency
Settlement Data Stream	<i>Settlement</i>	Process P2	As per <i>SSPC</i>
<b>Description:</b>			
<ul style="list-style-type: none"> <li><i>Settlement</i> data produced each <i>business day</i> will include any one or all of the following transactions:                             <ul style="list-style-type: none"> <li>RTM physical transactions;</li> <li><i>Procurement market</i> transactions;</li> <li>DAM physical transactions;</li> <li>DAM virtual transactions;</li> <li>Payment to DAM <i>TR holders</i>; and</li> <li>DAM <i>TR</i> transactions (<i>TR auctions</i>).</li> </ul> </li> </ul>			
Flow	Source	Target Processes	Frequency

Flow	Source	Target Processes	Frequency
Compliance/Penalty Information	Compliance	Process P2	Triggered internally as required
<b>Description:</b> <ul style="list-style-type: none"> <li>Market Invoicing and Payments sub-process will create manual <i>invoices</i> for compliance penalties.</li> </ul>			
Flow	Source	Target Processes	Frequency
Dynamic Data Stream “A”	Process P2	Market Invoicing and Payments	As per <i>SSPC</i> (for <i>settlement</i> data stream) Triggered internally as required (for compliance/penalty <i>invoices</i> )
<b>Description:</b> <ul style="list-style-type: none"> <li>Provision of all necessary data to produce <i>invoices</i> for <i>market participants</i>.</li> <li>Includes: <ul style="list-style-type: none"> <li>Settlement data stream (RTM and DAM transactions); and</li> <li>Compliance/penalty information.</li> </ul> </li> </ul>			

### 6.1.3 Process P3 – Dynamic Data Collection “B”

#### Description

Process P3 involves the orderly collection of dynamic data related to banking transactions within the *IESO-administered markets* bank accounts.

#### Input and Output Data Flows

Table 6-3: Process P3 Input and Output Data Flows

Flow	Source	Target Processes	Frequency
Banking Transactions	<i>IESO</i> Bank	Process P3	Daily import of bank transactions

Flow	Source	Target Processes	Frequency
<p><b>Description:</b></p> <ul style="list-style-type: none"> <li>• All bank transactions within the <i>IESO-administered markets</i> bank accounts.</li> <li>• Includes:                             <ul style="list-style-type: none"> <li>○ <i>IESO settlement clearing account:</i> <ul style="list-style-type: none"> <li>▪ Cash receipt and disbursement of <i>invoiced</i> amounts for the <i>physical market</i>;</li> <li>▪ <i>Margin call</i> payments and voluntary prepayments; and</li> <li>▪ Cash receipt of <i>invoiced</i> amounts for compliance penalty <i>invoices</i>.</li> </ul> </li> <li>○ <i>IESO TR clearing account:</i> <ul style="list-style-type: none"> <li>▪ <i>TR</i> cash deposits; and</li> <li>▪ Cash receipt of <i>invoiced</i> amounts for <i>TR auctions</i>.</li> </ul> </li> <li>○ <i>Investment transactions for all IESO-administered markets bank accounts.</i></li> </ul> </li> </ul>			
Flow	Source	Target Processes	Frequency
Dynamic Data Stream "B"	Process P3	Market Cash Management	Daily

Flow	Source	Target Processes	Frequency
<p><b>Description:</b></p> <ul style="list-style-type: none"> <li>Automatically retrieves bank balances and transactions from the <i>IESO-administered markets</i> bank accounts.</li> <li>Includes:                             <ul style="list-style-type: none"> <li>Matching cash receipts and disbursements to <i>market participant</i> accounts for:                                     <ul style="list-style-type: none"> <li><i>Invoiced</i> amounts; and</li> <li>Voluntary prepayments and <i>margin call</i> payments.</li> </ul> </li> <li>Managing cash position</li> </ul> </li> </ul>			

### 6.1.4 Process P4 – Issue Margin Call

#### Description

The Prudential Security process evaluates *actual exposure* (AE) levels for physical transactions (DAM and *real-time market*) and DAM virtual transactions. When a *market participant* reaches their *trading limit*, the Prudential Security process will issue a *margin call*.

#### Input and Output Data Flows

Table 6-4: Process P4 Input and Output Data Flows

Flow	Source	Target Processes	Frequency
Assess Margin Levels	Prudential Security	Process P4	Daily
<p><b>Description:</b></p> <ul style="list-style-type: none"> <li>The Prudential Security process will identify situations in which a <i>market participant's</i> calculated <i>actual exposure</i> for physical (DAM and <i>real-time market</i>) and/or DAM virtual transactions has reached or exceeded the <i>margin call</i> threshold for physical transactions and/or DAM virtual transactional activity.</li> </ul>			
Flow	Source	Target Processes	Frequency
<i>Margin Call</i>	Process P4	Market Cash Management	Triggered internally as required
<p><b>Description:</b></p> <ul style="list-style-type: none"> <li><i>Margin call</i> information, including a unique <i>margin call #</i> and required dollar value is communicated to the Market Cash Management sub-process and the treasury system is updated.</li> </ul>			

### 6.1.5 Process P5 – Cash Receipts/Disbursements

#### Description

Process P5 utilizes bank transactions from the *IESO settlement clearing account* and *IESO TR clearing account* to match cash receipts and disbursements to *invoiced* amounts. This also includes receipt of *margin call* payments and voluntary prepayments.

#### Input and Output Data Flows

**Table 6-5: Process P5 Input and Output Data Flows**

Flow	Source	Target Processes	Frequency
Market Participant Cash Transactions	Market Cash Management	Process P5	Import of bank transactions are triggered daily
<p><b>Description:</b></p> <ul style="list-style-type: none"> <li>All bank transactions within the <i>IESO-administered markets</i> bank accounts.</li> <li>Includes:                             <ul style="list-style-type: none"> <li><i>IESO settlement clearing account</i>:                                     <ul style="list-style-type: none"> <li>Cash receipt and disbursement of <i>invoiced</i> amounts for the <i>physical market</i>;</li> <li><i>Margin call</i> payments and voluntary prepayments; and</li> <li>Cash receipt of <i>invoiced</i> amounts for compliance penalty <i>invoices</i>.</li> </ul> </li> <li><i>IESO TR clearing account</i> <ul style="list-style-type: none"> <li><i>TR</i> cash deposits; and</li> <li>Cash receipt of <i>invoiced</i> amounts for <i>TR auctions</i>.</li> </ul> </li> </ul> </li> </ul>			
Flow	Source	Target Processes	Frequency
Market Participant Cash Transactions	Process P5	Market Invoicing and Payments	Daily Updates
<p><b>Description:</b></p> <ul style="list-style-type: none"> <li>Cash receipts and disbursements are applied to <i>market participant</i> account and include:                             <ul style="list-style-type: none"> <li>Voluntary prepayments and <i>margin call</i> payments received;</li> <li><i>TR</i> deposits received; and</li> <li>Cash receipts and disbursements for <i>invoiced</i> amounts.</li> </ul> </li> <li>Information used to produce statements of activity (SOAs).</li> </ul>			

## 6.1.6 Process P6 – Accounts Receivable/Payable Files

### Description

The Market Invoicing and Payments sub-process provides the Market Cash Management sub-process with accounts receivable and payable files that contain information on *invoiced* amounts. This initiates the *funds transfer* process.

### Input and Output Data Flows

**Table 6-6: Process P6 Input and Output Data Flows**

Flow	Source	Target Processes	Frequency
<i>Market Participant Invoice</i> Amounts	Market Invoicing and Payments	Process P6	<ul style="list-style-type: none"> <li>▪ Monthly for <i>physical market</i></li> <li>▪ Weekly for financial market</li> <li>▪ Ad hoc for manual <i>invoices</i></li> </ul>
<b>Description:</b> <ul style="list-style-type: none"> <li>• Market Invoicing and Payments sub-process creates accounts receivable and payable files, which contain all <i>market participant invoice</i> details.</li> </ul>			
Flow	Source	Target Processes	Frequency
<i>Market Participant Invoice</i> Amounts	Process P6	Market Cash Management	<ul style="list-style-type: none"> <li>▪ Monthly for <i>physical market</i></li> <li>▪ Weekly for financial market</li> <li>▪ Ad hoc for manual <i>invoices</i></li> </ul>
<b>Description:</b> <ul style="list-style-type: none"> <li>• Market Cash Management imports accounts receivable and payable files with <i>market participant invoice</i> details into the treasury system from the financial system.</li> </ul>			
Flow	Source	Target Processes	Frequency
General Ledger Update	Process P6	Market Accounting	As required
<b>Description:</b> <ul style="list-style-type: none"> <li>• Posting of accounts receivable (<i>debit invoices</i>) and accounts payable (<i>credit invoices</i>) transaction details to the general ledger in the financial system.</li> </ul>			

### 6.1.7 Process P7 – Cash Inflows and Outflows

#### Description

Process P7 utilizes bank transactions within the *IESO-administered markets* bank accounts to update general ledger accounts to reflect cash receipts and cash disbursements. This is an extension of Process P3 used by the Market Accounting process.

#### Input and Output Data Flows

**Table 6-7: Process P7 Input and Output Data Flows**

Flow	Source	Target Processes	Frequency
Bank Transactions	Market Cash Management	Process P7	Daily
<p><b>Description:</b></p> <ul style="list-style-type: none"> <li>• All bank transactions within the <i>IESO-administered markets</i> bank accounts.</li> <li>• Includes:                             <ul style="list-style-type: none"> <li>○ <i>IESO settlement clearing account:</i> <ul style="list-style-type: none"> <li>▪ Cash receipt and disbursement of <i>invoiced</i> amounts for the <i>physical market</i>;</li> <li>▪ <i>Margin call</i> payments and voluntary prepayments; and</li> <li>▪ Cash receipt of <i>invoiced</i> amounts for compliance penalty <i>invoices</i>.</li> </ul> </li> <li>○ <i>IESO TR clearing account</i> <ul style="list-style-type: none"> <li>▪ <i>TR</i> cash deposits; and</li> <li>▪ Cash receipt of <i>invoiced</i> amounts for <i>TR auctions</i>.</li> </ul> </li> <li>○ <i>Investment transactions for all IESO-administered markets bank accounts</i></li> </ul> </li> </ul>			
Flow	Source	Target Processes	Frequency
General Ledger Update	Process P7	Market Accounting	Daily
<p><b>Description:</b></p> <ul style="list-style-type: none"> <li>• Posting of all <i>IESO-administered market</i> bank transactions to update the general ledger accounts in the financial system.</li> </ul>			

## 6.1.8 Process P8 – Issue Invoice / Statement of Activity

### Description

Process P8 includes the issuance of monthly *invoices* for the *physical market*, weekly *invoices* for the financial market and manual *invoices*. Process P8 also includes the issuance of the monthly statement of activity (SOA).

### Input and Output Data Flows

Table 6-8: Process P8 Input and Output Data Flows

Flow	Source	Target Processes	Frequency
Debit/Credit Information	Market Invoicing and Payments	Process P8	<i>Invoices:</i> <ul style="list-style-type: none"> <li>▪ Monthly for <i>physical market</i></li> <li>▪ Weekly for financial market</li> <li>▪ Ad hoc for manual <i>invoices</i></li> </ul> Statement of Activity: <ul style="list-style-type: none"> <li>▪ Monthly</li> </ul>
<p><b>Description:</b></p> <ul style="list-style-type: none"> <li>• <i>Invoices</i> <ul style="list-style-type: none"> <li>○ Create debit and credit <i>invoices</i> based on <i>settlement</i> amounts received from the <i>settlement process</i>.               <ul style="list-style-type: none"> <li>▪ Voluntary prepayments and <i>margin call</i> payments received from <i>market participants</i> after the issuance of the previous month's <i>invoice</i> and up to one <i>business day</i> prior to the issuance of the current month's <i>invoice</i>, will be aggregated and applied to reduce the current month's <i>invoice</i>.</li> </ul> </li> <li>○ Create manual <i>invoices</i> (compliance penalty, late payment charges).</li> </ul> </li> <li>• Statement of Activity (SOA)           <ul style="list-style-type: none"> <li>○ Produce monthly SOA for <i>physical market</i> using <i>market participant</i> transactional information for the calendar month.</li> <li>○ SOA will include opening balance, <i>invoices</i> issued, payments to <i>market participant</i>, receipts from <i>market participant</i>, closing balances, and past due summaries.</li> </ul> </li> </ul>			

Flow	Source	Target Processes	Frequency
Posting of <i>Invoices</i> and SOA	Process P8	<i>IESO</i> Reports Site	<i>Invoices:</i> <ul style="list-style-type: none"> <li>▪ Monthly for <i>physical market</i></li> <li>▪ Weekly for financial market</li> <li>▪ Ad hoc for manual <i>invoices</i></li> </ul> Statement of Activity: <ul style="list-style-type: none"> <li>▪ Monthly</li> </ul>
<b>Description:</b> <ul style="list-style-type: none"> <li>• Posting of <i>invoices</i> and SOAs to the <i>IESO</i> Reports site for retrieval by <i>market participants</i>.</li> </ul>			

### 6.1.9 Process P9 – Data Collection for Prudential Security

#### Description

Process P9 collects data that is provided to the Prudential Security process in order to set *prudential support* for *market participants* transacting in both physical transactions (RTM and DAM) and DAM virtual transactions. *Prudential support* is set:

- based on *invoice* information for “non-metered participants”; and
- based on net creditor status for “metered participants”.

Process P9 also uses data provided to the Prudential Security process to monitor *actual exposure* using voluntary prepayments and *margin call* payments received from *market participants*.

The data inputs into process P9 are determined by Market Invoicing and Payments.

## Input and Output Data Flows

**Table 6-9: Process P9 Input and Output Data Flows**

Flow	Source	Target Processes	Frequency
Invoice Data	Market Invoicing and Payments	Process P9	As required
<p><b>Description:</b></p> <ul style="list-style-type: none"> <li>• Invoice data for physical transactions (DAM and <i>real-time market</i>) and/or DAM virtual transactions.</li> <li>• Required for re-assessment of <i>prudential support obligation</i> for “non-metered participant” and net creditor status for “metered participant”.</li> </ul>			
Flow	Source	Target Processes	Frequency
List of Overdue Invoices	Market Invoicing and Payments	Process P9	As required
<p><b>Description:</b></p> <ul style="list-style-type: none"> <li>• The Prudential Security process is provided with a list of overdue <i>invoices</i> by the Market Invoicing and Payments sub-process to determine if draw-downs are required on <i>prudential support</i> on any <i>market participants</i> who have defaulted on their <i>invoice</i> payment.</li> </ul>			
Flow	Source	Target Processes	Frequency
Voluntary Prepayments and <i>Margin Call</i> Payments	Market Invoicing and Payments	Process P9	As required
<p><b>Description:</b></p> <ul style="list-style-type: none"> <li>• The Prudential Security process is provided with all voluntary prepayment and <i>margin call</i> payment information by the Market Invoicing and Payments sub-process to calculate <i>actual exposure</i> for physical transactions (DAM and <i>real-time market</i>) and/or DAM virtual transactions.</li> </ul>			
Flow	Source	Target Processes	Frequency

**Table 6-9: Process P9 Input and Output Data Flows**

Flow	Source	Target Processes	Frequency
Set Prudential Support	Process P9	Prudential Security	As required
<p><b>Description:</b></p> <ul style="list-style-type: none"> <li>• Pass through of all <i>invoice</i> data received from the Market Invoicing and Payments sub-process to:                             <ul style="list-style-type: none"> <li>○ Re-assess <i>prudential support obligations</i> for “non-metered participants”; and</li> <li>○ Determine net creditor status for “metered participants”.</li> </ul> </li> </ul>			
Flow	Source	Target Processes	Frequency
Monitor Prudentials	Process P9	Prudential Security	As required
<p><b>Description:</b></p> <ul style="list-style-type: none"> <li>• Pass through of all voluntary prepayment and <i>margin call</i> payment data received from the Market Invoicing and Payments sub-process to calculate <i>actual exposure</i> for physical (DAM and <i>real-time market</i>) and/or DAM virtual transactions.</li> <li>• Pass through of list of overdue <i>invoices</i> received from the Market Invoicing and Payments sub-process to determine if a draw-down is required on <i>prudential support</i> for physical transactions (DAM and <i>real-time market</i>) and/or DAM virtual transactions.</li> </ul>			

### 6.1.10 Process P10 – Create/Modify Charge Types

#### Description

Process P10 creates and modifies *charge types* with codes and description for the *settlement process*. This process also determines the GST/HST tax treatment of each new *charge type*.

## Input and Output Data Flows

Table 6-10: Process P10 Input and Output Data Flows

Flow	Source	Target Processes	Frequency
GST/HST Tax Treatment	Market Accounting	Process P10	As required
<b>Description:</b> <ul style="list-style-type: none"> <li>Assessment of <i>charge types</i> to determine GST/HST tax treatment. <ul style="list-style-type: none"> <li>The <i>IESO</i> determines GST/HST applicability in consultation with CRA.</li> </ul> </li> </ul>			
Flow	Source	Target Processes	Frequency
Charge Type Information	<i>Settlement</i>	Process P10	As required
<b>Description:</b> <ul style="list-style-type: none"> <li>The <i>settlement process</i> provides a <i>charge type</i> number, name and description to the Market Accounting sub-process to create new <i>charge types</i> and to modify existing <i>charge types</i>.</li> </ul>			
Flow	Source	Target Processes	Frequency
Charge Type Information	Process P10	Market Accounting	As required
<b>Description:</b> <ul style="list-style-type: none"> <li>The Market Accounting sub-process enters the <i>charge type</i> information into the financial system and is then replicated and made available to the <i>settlement process</i> for calculating <i>settlement amounts</i>.</li> </ul>			
Flow	Source	Target Processes	Frequency
New/Modified <i>Charge Types</i>	Market Accounting	Process P10	As required
<b>Description:</b> <ul style="list-style-type: none"> <li>The Market Accounting sub-process enters the <i>charge type</i> information into the financial system and is then replicated to the <i>settlement</i> system to calculate <i>settlement amounts</i>.</li> </ul>			
Flow	Source	Target Processes	Frequency
New/Modified <i>Charge Types</i>	Process P10	<i>Settlement</i>	As required
<b>Description:</b> <ul style="list-style-type: none"> <li><i>Charge type</i> information (<i>charge type</i> number and name) are entered into the financial system by the Market Accounting sub-process and replicated to the <i>settlement</i> system to calculate <i>settlement amounts</i>.</li> <li><i>Charge types</i> will show as separate line items on <i>invoices</i>.</li> </ul>			

### 6.1.11 Process P11 – Funds Transfer

#### Description

Market Cash Management initiates payment to *market participants*, and records receipt of payment from *market participants*.

#### Input and Output Data Flows

**Table 6-11: Process P11 Input and Output Data Flows**

Flow	Source	Target Processes	Frequency
Accounts Receivable/Payable Information	Market Cash Management	Process P11	As required
<b>Description:</b> <ul style="list-style-type: none"> <li>The Market Cash Management sub-process monitors the <i>funds transfer</i> process between the <i>IESO</i> and <i>market participants</i> and initiates payment from the <i>IESO</i> to <i>market participants</i>.</li> </ul>			
Flow	Source	Target Processes	Frequency
Payment to <i>Market Participants</i>	Process P11	<i>Market Participant Bank</i>	As required
<b>Description:</b> <ul style="list-style-type: none"> <li>Payment to <i>market participants</i> from the <i>IESO</i> will be made four <i>business days</i> following the issuance of the <i>invoice</i> for the <i>physical market</i> and financial market as per the <i>SSPC</i>.</li> </ul> <p>Note: manual <i>invoices</i> have different issuance/payment timelines.</p>			
Flow	Source	Target Processes	Frequency
Payment to <i>IESO</i>	<i>Market Participant Bank</i>	Process P11	As required
<b>Description:</b> <ul style="list-style-type: none"> <li>Payment to the <i>IESO</i> from <i>market participants</i> is required two <i>business days</i> following the issuance of the <i>invoice</i> for the <i>physical market</i> and the financial market as per the <i>SSPC</i>.</li> </ul> <p>Note: manual <i>invoices</i> have different issuance/payment timelines.</p>			

### 6.1.12 Process P12 – Identify Payment Default

#### Description

*Market participants* whose *invoice* payments are late or have not been paid in full by the end of banking hours on the payment due date as specified in the *SSPC* will be considered in default. In this

case the Prudential Security, Compliance and Legal and *settlement* processes require notification for further action.

## Input and Output Data Flows

**Table 6-12: Process P12 Input and Output Data Flows**

Flow	Source	Target Processes	Frequency
Late/Unpaid <i>Invoice</i>	Market Invoicing and Payments	Process P12	As required
<p><b>Description:</b></p> <ul style="list-style-type: none"> <li>Market Invoicing and Payments sub-process will identify <i>invoices</i> that are late or have not been paid in full by the end of banking hours as specified in the <i>SSPC</i>.</li> </ul>			
Flow	Source	Target Processes	Frequency
Notice of Default	Market Cash Management	Process P12	As required
<p><b>Description:</b></p> <ul style="list-style-type: none"> <li>A notice of default will be issued to the defaulting <i>market participant</i> for any one of the reasons identified in <i>market rules</i> Chapter 3, Section 6.3: 'Events of Default'.</li> </ul> <p>For a complete list, refer to <i>market rules</i> Chapter 3, Section 6.3: 'Events of Default'. A notice of default will be issued to the defaulting <i>market participant</i>. If the event of default is not rectified, this will be communicated to the Compliance and Legal process.</p>			
Flow	Source	Target Processes	Frequency
Notice of Default	Process P12	<i>Market Participant</i>	As required
<p><b>Description:</b></p> <ul style="list-style-type: none"> <li>A notice of default will be issued to the defaulting <i>market participant</i> for any one of the reasons identified in <i>market rules</i> Chapter 3, Section 6.3: 'Events of Default'.</li> <li>First notice of default is a general 'Event of Default' and provides the <i>market participant</i> a pre-defined time period to remedy the default.</li> </ul>			
Flow	Source	Target Processes	Frequency
Notice of Default	Process P12	Compliance and Legal	As required
<p><b>Description:</b></p> <ul style="list-style-type: none"> <li>A notice of default will be issued to the defaulting <i>market participant</i> for any one of the reasons identified in <i>market rules</i> Chapter 3, Section 6.3: 'Events of Default'. If the event of default is not rectified, this will be escalated to the Compliance and Legal process where a 'Notice of Intent to Suspend' may be issued.</li> </ul>			

Flow	Source	Target Processes	Frequency
Default Information	Process P12	Prudential Security	As required
<b>Description:</b> <ul style="list-style-type: none"> <li>When a <i>market participant</i> has failed to pay their <i>invoice</i> by the timelines specified in the <i>SSPC</i> and/or failed to remit a <i>margin call</i> payment, the Prudential Security process is notified and uses this information to:                             <ul style="list-style-type: none"> <li>determine if draw-downs are required on <i>prudential support</i> on any <i>market participants</i> who have defaulted on their <i>invoice</i> payment; and</li> <li>re-calculate <i>actual exposure</i> for physical transactions (<i>DAM</i> and <i>real-time market</i>) and/or <i>DAM</i> virtual transactions.</li> </ul> </li> </ul>			

### 6.1.13 Process P13 –Calculate Default Levy

#### Description

In the event of a *default levy* situation, the Market Accounting sub-process will provide the *settlement process* with the *default amount* to be recovered from *market participants*. The *settlement process* will calculate each *market participant's* proportionate share of the *default levy*.

#### Input and Output Data Flows

Table 6-13: Process P13 Input and Output Data Flows

Flow	Source	Target Processes	Frequency
Default Amount	Market Accounting	Process P13	As required
<b>Description:</b> <ul style="list-style-type: none"> <li>Market Accounting sub-process will be informed by the Market Invoicing and Payments sub-process of the default amount resulting from non-payment of <i>invoice</i> by a <i>market participant</i>.</li> </ul>			
Flow	Source	Target Processes	Frequency
<i>Default Levy</i>	Process P13	Settlement	By 6 <sup>th</sup> <i>business day</i> after the default month
<b>Description:</b> <ul style="list-style-type: none"> <li>Market Accounting sub-process will provide the <i>settlement process</i> with the <i>default amount</i> to be recovered from <i>market participants</i>.</li> <li>The <i>settlement process</i> will calculate each <i>market participant's</i> proportionate share of the <i>default levy</i>.</li> </ul>			

## 6.2 Internal Process Impacts

The internal processes currently used for Market Billing and Funds Administration process will continue to have relevance in the future *real-time market* and day-ahead market.

Internal processes related to Market Billing and Funds Administration include:

- Clear Market.

Some of the internal processes are related to various *IESO* processes that interact with the Market Billing and Funds Administration process. For the most part, the Market Billing and Funds Administration process under the market renewal program do not impact the internal procedures that address these related areas. However, in some areas this may be contingent upon the tools impact of the future *real-time market* and day-ahead market.

The design of internal *IESO* processes are for internal *IESO* use as documented in Appendix C, and are not included in the public version of this document. Appendix C details the impacts to internal processes in terms of existing processes that support the new market requirements, existing activities that need to be updated, and process and information models that may need to be updated to support the future market. There are no process or activity changes required for the future *real-time market* and day-ahead market for the internal processes.

– End of Section –

## Appendix A: Market Participant Interfaces

The following table provides a description of the changes and additions to *IESO* technical interfaces and forms with *market participants* that may be required to support the Market Billing and Funds Administration process design of the future day-ahead market and *real-time market*. These interfaces will be retained and will not require any modifications

**Table A-1: Existing Market Participant Interfaces to be Retained**

MP Interface Name	Interface Type	Description of Impact
<i>IESO</i> Reports Site ( <a href="http://reports.ieso.ca/">http://reports.ieso.ca/</a> )	Web client	No changes required
Telephone call or e-mail <i>IESO</i> Customer Relations	Network	No changes required
Online <i>IESO</i> ( <a href="https://online.ieso.ca/suite/">https://online.ieso.ca/suite/</a> )	Web client	No changes required
<i>Electronic funds transfer</i> (EFT): <ul style="list-style-type: none"> <li>• direct deposit</li> <li>• wire payment</li> <li>• electronic data interchange (EDI)</li> </ul>	Network	No changes required
Complete 'Notification of Prepayment – IMO_FORM_1130' <i>Electronic funds transfer</i> (EFT) to <i>settlement account</i> : <ul style="list-style-type: none"> <li>• direct deposit</li> <li>• wire payment</li> <li>• electronic data interchange (EDI)</li> </ul>	Network	No changes required

– End of Section –

## **Appendix B: Internal-Facing Procedural Requirements *[Internal only]***

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**This section is confidential to the IESO.**

– End of Section –

# **Appendix C: Internal Business Process and Information Requirements *[Internal only]***

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**This section is confidential to the IESO.**

**– End of Section –**

## Appendix D: Settlement Amounts

The tables that follow identify the *settlement amounts* that will be new, amended, replaced or disposed of under the MRP.

**NOTE: The *settlement amounts* below are subject to change pending the completion of the Market Settlement detailed design document.**

**Table D-1: New Settlement Amounts**

Name
Hourly Physical Transaction <i>Settlement Amount</i> {1}
Hourly Physical Transaction <i>Settlement Amount</i> {2}
Hourly Virtual Transaction <i>Settlement Amount</i> {1}
Hourly Virtual Transaction <i>Settlement Amount</i> {2}
Hourly Physical Transaction <i>Settlement Amount – Physical Bilateral Contract</i> {1}
Hourly Physical Transaction <i>Settlement Amount – Physical Bilateral Contract</i> {2}
DAM Hourly <i>Operating Reserve Settlement Amount</i> {1}
DAM Hourly <i>Operating Reserve Settlement Amount</i> {2}
DAM <i>Operating Reserve Uplift</i>
DAM Make-Whole Payment
DAM Make-Whole Payment Uplift
DAM Reliability Unit Commitment Uplift
<i>Real-Time Market Make-Whole Payment</i>
<i>Real-Time Market Make-Whole Payment Uplift</i>
DAM <i>Transmission Rights Settlement Credit</i>
DAM <i>Transmission Rights Auction Debit</i>
Congestion Rents and Marginal Loss Residuals
Generator Offer Guarantee
Generator Offer Guarantee Uplift
NQS Failure Charge
NQS Failure Charge Uplift
Reference Level <i>Settlement Amount</i>
Reference Level <i>Settlement Amount Uplift</i>

**Table D-2: Amended Settlement Amounts**

Current Real-Time Market Settlement Amount	Amendments after DAM Implementation
<i>Operating Reserve Shortfall Settlement Debit</i> <i>Market rules reference: Chapter 9, Section 3.8</i>	Amended to reflect the new DAM <i>settlement amount</i> for <i>operating reserve</i>
<i>Intertie Offer Guarantees (IOG) and IOG OFFSET for wheel-through transactions</i> <i>Market rules reference: Chapter 9, section 3.8A</i>	Amended to reflect applicability only in real-time and interactions with RT MWP
<i>Generation Station Service Rebate</i> <i>Market rules reference: Chapter 9, Section 2.1A.9</i>	Amended to reflect new DAM and RT <i>settlement amounts</i> for uplifts
Administration Pricing <i>Market rules reference: Chapter 7, Section 8.4A.9</i>	Amended to reflect new DAM and PD failure procedures
Real-Time Import Failure Charge <i>Market rules reference: Chapter 9, Section 3.8C</i>	Amended to incorporate new intertie congestion pricing rules
Real-Time Export Failure charge <i>Market rules reference: Chapter 9, Section 3.8C</i>	Amended to incorporate new <i>intertie</i> congestion pricing rules

**Table D-3: Replaced Settlement Amounts**

Current Real-Time Market Settlement Amount	Replacement after DAM Implementation
Net Energy Market <i>Settlement Credit</i> (NEMSC) <i>Market rules reference: Chapter 9, Section 3.3</i>	Replaced by the first and second <i>settlement</i> components of Hourly Physical Transaction <i>Settlement Amount</i> (HPTSA)
<i>Operating Reserve Settlement Credit</i> (ORSC) <i>Market rules reference: Chapter 9, Section 3.4</i>	Replaced by the first and second <i>settlement</i> components of Hourly <i>Operating Reserve Settlement Amount</i> (HORSAs)
Hourly Uplift (HUSA) – <i>Operating Reserve</i> component <i>Market rules reference: Chapter 9, Section 3.9</i>	Replaced by the DAM <i>Operating Reserve Uplift</i> (DORU)
Generation Cost Guarantee Payment <i>Market rules reference: Chapter 9, Section 4.7B</i>	Replaced by Generator Offer Guarantee (GOG)
Generation Cost Guarantee Recovery Debit <i>Market rules reference: Chapter 9, Section 4.8</i>	Replaced by Generator Offer Guarantee Uplift

<b>Current Real-Time Market Settlement Amount</b>	<b>Replacement after DAM Implementation</b>
Day-Ahead Production Cost Guarantee <i>Market rules reference: Chapter 9, Section 4.7D</i>	Replaced by DAM Make-Whole Payment

**Table D-4: Replaced TR Settlement Amounts**

<b>Current Market TRs</b>	<b>Future Market DAM TRs</b>
<i>Transmission Rights Auction Settlement Debit</i> <i>Market rules reference: Chapter 9, Section 2.7</i>	DAM <i>Transmission Rights Auction Debit</i>
<i>Transmission Charge Reduction Fund</i> <i>Market rules reference: Chapter 9, Section 3.6.2</i>	Congestion Rents and Marginal Loss Residuals
<i>Transmission Rights Settlement Credit</i> <i>Market rules reference: Chapter 9, Section 3.6.1</i>	DAM <i>Transmission Rights Settlement Credit</i>

**Table D-5: Disposed of Settlement Amounts**

<b>Current Real-time Market Settlement Amount</b>
Hourly Uplift (HUSA) – Congestion Management <i>Settlement Credit</i> component <i>Market rules reference: Chapter 9, Section 3.9</i>
Hourly Uplift (HUSA) – NEMSC component <i>Market rules reference: Chapter 9, Section 3.9</i>
Hourly Uplift (HUSA) – Ramp Down <i>Settlement Amount</i> component <i>Market Rules reference: Chapter 9, Section 3.9</i>
Hourly Uplift (HUSA) – Day-Ahead Import Failure Charge component <i>Market rules reference: Chapter 9, Section 3.9</i>
Hourly Uplift (HUSA) – Day-Ahead Export Failure Charge component <i>Market rules reference: Chapter 9, Section 3.9</i>
Hourly Uplift (HUSA) – Day-Ahead Linked Wheel Failure Charge component <i>Market rules reference: Chapter 9, Section 3.9</i>
Congestion Management <i>Settlement Credit for Energy (CMSC)</i> <i>Market rules reference: Chapter 9, Section 3.5</i>

<b>Current Real-time Market Settlement Amount</b>
Ramp Down <i>Settlement Amount</i> (RDSA) <i>Market rules</i> reference: Chapter 9, Section 3.5A
Day-Ahead <i>Intertie Offer</i> Guarantee (DA_IOG) <i>Market rules</i> reference: Chapter 9, Section 3.8A.2A
Day-Ahead Import Failure Charge <i>Market rules</i> reference: Chapter 9, Section 3.8B
Day-Ahead Export Failure Charge <i>Market rules</i> reference: Chapter 9, Section 3.8D
Day-Ahead Linked Wheel Failure Charge <i>Market rules</i> reference: Chapter 9, Section 3.8E
Day-Ahead Generator Withdrawal Charge <i>Market rules</i> reference: Chapter 9, Section 3.8F

– End of Appendix –

# References

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<b>Document Name</b>	<b>Document ID</b>
MRP High-level Design Single Schedule Market	DES-13
MRP High-level Design Day-Ahead Market	DES-14
MRP High-level Design Enhanced Real-Time Unit Commitment	DES-15
MRP Detailed Design: Overview	DES-16
MRP Detailed Design: Authorization and Participation	DES-17
MRP Detailed Design: Prudential Security	DES-18
MRP Detailed Design: Market Settlement	DES-28
Market Manual 5: Settlements, Part 5.6: Physical Markets Settlement Invoicing	MDP_PRO_0035
Market Manual 5: Settlements, Part 5.8: Financial Markets Settlement Invoicing	MDP_PRO_0047
Market Manual 5: Settlements, Part 5.9: Settlement Payment Methods and Schedule	MDP_PRO_0036
Notification of Prepayment	IMO_FORM_1130
Market Rules for the Ontario Electricity Market (Market Rules)	MDP_RUL_0002

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