

Settlement Statements and Charge Types

Design Working Group Meeting
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1. Settlement Statements and Charge Types

- There is a need to modify some settlement charges and add new settlement charges with the implementation of EDAC
- The following slides include the EDAC formulae for reference purposes with the Excel workbooks describing the Settlement Statements

- Component 1 =
$$\left(\int_0^{\min(DACS, RTCS, AQEI)} DAO \right) - [RTP \times \min(DACS, RTCS, AQEI)]$$
- Component 2 =
$$\left(\int_{\min(DACS, OpCap, (\max(RTCS, AQEI)))}^{\min(DACS, OpCap)} DAO \right) - \max\left(0, \int_{\min(DACS, OpCap, (\max(RTCS, AQEI)))}^{\min(DACS, OpCap)} RTO \right)$$
- Component 3 (Constrained ON) =
$$\int_{RTUS}^{DACS} RTO - RTP \cdot [DACS - RTUS]$$
- Component 3 (Constrained OFF) =
$$RTP \cdot [DACS - RTCS] - \int_{RTCS}^{DACS} RTO$$

- Component 4 = $\sum RTP_{OR} \times RTUS_{OR} - \int_0^{RTUS_{OR}} RTO_{OR}$

Where

- $RTUS_{30R} = \text{Max}[0, \text{min}(\text{DACS} - RTUS_E, RTUS_{30R})]$
- $RTUS_{10NS} = \text{Max}[0, \text{min}(\text{DACS} - RTUS_E - RTUS_{30R}, RTUS_{10NS})]$
- $RTUS_{10S} = \text{Max}[0, \text{min}(\text{DACS} - RTUS_E - RTUS_{30R} - RTUS_{10NS}, RTUS_{10S})]$

- Component 5 (Scenario 1) = DA_SUC

- Component 5 (Scenario 2) = $DA_SUC - (DA_SUC \times SU_INT / 12)$

Where

- Scenario 1 is when the participant achieves MLP within the first 6 intervals
- Scenario 2 is when the participant achieves MLP between interval 7 - 17
- DA_SUC = Day-ahead start-up cost submitted by participant
- SU_INT = number of intervals required to achieve MLP

- The following formulae are used for calculating a guarantee in Day 2 when there is a constrained in respect MGBRT related to a Day 1 start

- Component 1 =

$$\left(\int_0^{\min(DACS, RTCS, AQEI)} DAO \right) - [RTP \times \min(DACS, RTCS, AQEI)] - \left(\int_0^{MLP} DAO - RTP \times MLP \right)$$

- Component 3 – MLP > RTUS (Constrained ON) =

$$\int_{RTUS}^{DACS} RTO - RTP \cdot (DACS - RTUS) \quad \text{---} \quad \int_{RTUS}^{MLP} RTO - RTP \cdot (MLP - RTUS) \quad \text{---}$$

Note: For Component 3 (Constrained ON) when $DACS \geq RTCS > RTUS$, DACS is replaced with RTCS in the formula

- Component 1 =
$$\left(\int_0^{\min(DACS, RTCS)} DAO \right) - [RTP \times \min(DACS, RTCS)]$$
- Component 2 =
$$\left(\int_{\min(DACS, RTCS)}^{DACS} DAO \right) - \max \left(0, \int_{\min(DACS, RTCS)}^{DACS} RTO \right)$$
- Component 3 (Constrained ON) =
$$\int_{RTUS}^{DACS} RTO - RTP \cdot [DACS - RTUS]$$
- Component 3 (Constrained OFF) =
$$RTP \cdot [DACS - RTCS] - \int_{RTCS}^{DACS} RTO$$

- If withdraw notification is received at or 4 hours prior to real time (PD – 4), then
 - Withdrawal Charge = $\sum_{i=1}^n [\text{Max}\{\theta, (\text{Min}(\text{PD Ontario MCP, RT Ontario MCP}) - \text{DA Offer}) \times \text{MLP}\}]$
- If withdraw notification is received later than PD-4, then
 - Withdrawal Charge = $\sum_{i=1}^n [\text{Max}\{\theta, (\text{RT Ontario MCP} - \text{DA Offer}) \times \text{MLP}\}]$

- Day-Ahead Import Failure Charge =
Min[Max[0, (PD Ontario MCP – DA Offer) x MWh
deviation], Max(0, PD Offer – DA Offer) x MWh
deviation]

- Day-Ahead Export Failure Charge =
Min[Max(0, (DA Bid – PD Ontario MCP) x MWh
deviation), Max(0, DA Bid – PD Bid) x MWh
deviation]

Minimum of

$(\text{DA Price Spread} - \text{PD-1 Price Spread}) \times (\text{MW Deviation})$

and

Maximum of
(RT Import Failure Charge)
and
(RT Export Failure Charge)