LIST

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IESO Charge Types and Equations

Issue 4.1~~Issue 3.0~~

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This document enumerates the various *charge types* and equations used in the *IESO settlements process* for *IESO-administered markets*.

LST-84

Note – Excerpt of IESO Charge Types and Equations highlights the associated changes that will be presented at the August 19, 2025 stakeholder engagement meeting.

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212 MRP new	Day-Ahead Market 10-Minute Spinning Reserve Settlement Credit (HORSA{1})	MR Ch.9 s.3.1.10	$HORSA\{1\}_{k,h} = \sum^{M}(DAM\_PROR^{m}_{r1,h} \times DAM\_QSOR^{m}_{r1,k,h} + DAM\_PROR^{i}_{r1,h} \times DAM\_QSOR^{i}_{r1,k,h})$	Hourly	Due MP	13	N/A	N/A	N/A	
213 MRP new	Real-Time 10-Minute Spinning Reserve Settlement Credit (HORSA{2})	MR Ch.9 s.3.1.11	$HORSA\{2\}_{k,h} = \sum^{M,T}\{RT\_PROR^{m,t}_{r1,h}\ x\ (RT\_QSOR^{m,t}_{r1,k,h} - DAM\_QSOR^{m}_{r1,k,h}) + RT\_PROR^{i,t}_{r1,h}\ x\ (RT\_QSOR^{i,t}_{r1,k,h} - DAM\_QSOR^{i}_{r1,k,h})\}$ $HORSA\{2\}_{k,h} = \sum^{M,T}\left\{RT\_PROR^{m,t}_{r1,h}\ x\ \left(\frac{RT\_QSOR^{m,t}_{r1,k,h} - DAM\_QSOR^{m}_{r1,k,h}}{12}\right) + RT\_PROR^{i,t}_{r1,h}\ x\ \left(\frac{RT\_QSOR^{i,t}_{r1,k,h} - DAM\_QSOR^{i}_{r1,k,h}}{12}\right)\right\}$	Interval	Either Way	13	N/A	N/A	N/A	
214 MRP new	Day-Ahead Market 10-Minute Non-Spinning Reserve	MR Ch.9 s.3.1.10	$HORSA\{1\}_{k,h} = \sum^{M}(DAM\_PROR^{m}_{r2,h} \times DAM\_QSOR^{m}_{r2,k,h} + DAM\_PROR^{i}_{r2,h} \times DAM\_QSOR^{i}_{r2,k,h})$	Hourly	Due MP	13	13	13	13	

	Settlement Credit (HORSA{1})									
215 MRP new	Real-Time 10-Minute Non-Spinning Reserve Settlement Credit (HORSA{2})	MR Ch.9 s.3.1.11	$HORSA\{2\}_{k,h} = \sum^{M,T} \{RT\_PROR^{m,t}_{r2,h}\ x\ (RT\_QSOR^{m,t}_{r2,k,h} - DAM\_QSOR^{m}_{r2,k,h}) + RT\_PROR^{i,t}_{r2,h}\ x\ (RT\_QSOR^{i,t}_{r2,k,h} - DAM\_QSOR^{i}_{r2,k,h})\}$ $HORSA\{2\}_{k,h} = \sum^{M,T} \left\{RT\_PROR^{m,t}_{r2,h}\ x\ \left(\frac{RT\_QSOR^{m,t}_{r2,k,h} - DAM\_QSOR^{m}_{r2,k,h}}{12}\right) + RT\_PROR^{i,t}_{r2,h}\ x\ \left(\frac{RT\_QSOR^{i,t}_{r2,k,h} - DAM\_QSOR^{i}_{r2,k,h}}{12}\right)\right\}$	Interval	Either Way	13	13	13	13	
216 MRP new	Day-Ahead Market 30-Minute Operating Reserve Settlement Credit (HORSA{1})	MR Ch.9 s.3.1.10	$HORSA\{1\}_{k,h} = \sum^{M} (DAM\_PROR^{m}_{r3,h} \times DAM\_QSOR^{m}_{r3,k,h} + DAM\_PROR^{i}_{r3,h} \times DAM\_QSOR^{i}_{r3,k,h})$	Hourly	Due MP	13	13	13	13	
217 MRP new	Real-Time 30-Minute Operating Reserve Settlement Credit (HORSA{2})	MR Ch.9 s.3.1.11	$HORSA\{2\}_{k,h} = \sum^{M,T} \{RT\_PROR^{m,t}_{r3,h}\ x\ (RT\_QSOR^{m,t}_{r3,k,h} - DAM\_QSOR^{m}_{r3,k,h}) + RT\_PROR^{i,t}_{r3,h}\ x\ (RT\_QSOR^{i,t}_{r3,k,h} - DAM\_QSOR^{i}_{r3,k,h})\}$ $HORSA\{2\}_{k,h} = \sum^{M,T} \left\{RT\_PROR^{m,t}_{r3,h}\ x\ \left(\frac{RT\_QSOR^{m,t}_{r3,k,h} - DAM\_QSOR^{m}_{r3k,h}}{12}\right) + RT\_PROR^{i,t}_{r3,h}\ x\ \left(\frac{RT\_QSOR^{i,t}_{r3,k,h} - DAM\_QSOR^{i}_{r3,k,h}}{12}\right)\right\}$	Interval	Either Way	13	13	13	13	

250 MRP updated + name change	10-Minute Spinning Reserve Hourly Uplift (HUSA)	MR Ch.9 s.3.11	**The set of *charge types* 'c' has been updated** $= \sum_{C}^{M,T} TD_{k,h,c}\ x\ \left[\sum^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t} + RQ_{k,h}^{m,i,t}) / \sum_{K}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})\right]$ **Where:** a. C = the set of all *charge types* 'c' as follows: 206,212,213.	Hourly	Due *IESO*	13	N/A	0	13	
251	10 Minute Spinning Market Reserve Shortfall Debit ($ORSSD_{k,r,h}$)	MR Ch.9 s.3.9.2	Manual Entry as per MR Ch.9 s.3.9.2 where the value below which $ORESF_{k,r,h}^{m,t}$ shall be set at zero equals ∞.	Interval	Due *IESO*	13	13	N/A	N/A	
1830	Tariff Response charge for Exports	MR Ch.10 s.4.6	$-1 \text{ x } \sum_T SQEW_{k,h}^{i,t} / 12 \text{ x PRICE}$	Hourly	Due IESO	N/A	N/A	0	N/A	Ontario regulation 25/25
1850 MRP new	Day-Ahead Market Uplift (DAM_UPL)	MR Ch.9 s.4.14.3	$DAM\_UPL_k = -1\ x \left(\sum_{H}^{M} (DAM\_MWP_{k,h}^{m} + DAM\_GOG_{k}^{m}) - DAM\_P2\_PMT\right) \times \sum_{H}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t}) / \sum_{K,H}^{M,T} (AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})$ Where: $DAM\_MWP_{k,h}^{m}$ = is the day-ahead market make-whole payment settlement amount for charge types 1800, 1801, 1802 and 1803, calculated in accordance with MR Ch.9 s.3.4 for market participant 'k' at delivery point 'm' for settlement hour 'h'; $DAM\_GOG_{k}^{m}$ = is the day-ahead market generator offer guarantee settlement amount for charge types 1804, 1805, 1806, 1807 and 1808, calculated in accordance with MR Ch.9 s.4.4 for market participant 'k' at delivery point 'm'; and DAM_P2_PMT = calculated in accordance with MR Ch.9 s.4.14.5.	Daily	Due IESO	13	N/A	0	13	
1851 MRP new	Day-Ahead Market Reliability	MR Ch.9 s.4.14.4	Load Resources, Electricity Storage Resources that are Registered to Withdraw, and Boundary Entity Resources – Export Transactions	Daily	Due IESO	13	N/A	0	13	

	Scheduling Uplift (DRSU – EL_DRSU)		$EL\_DRSU_k = \left(DAM\_P2\_PMT - \sum_{K} V\_DRSU_k\right) \times \sum_{H}^{M,T}(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t}) / \sum_{K,H}^{M,T}(AQEW_{k,h}^{m,t} + SQEW_{k,h}^{i,t})$ Where: V_DRSU_k = the DRSU settlement amount calculated for charge type 1852 in accordance with MR Ch.9 s.4.14.4.1 for market participant 'k' at delivery point 'v' for virtual zonal resources; and $\cancel{DAM\_P2\_PMT = -1 \times \sum_{H,K}^{M} Max(Imp\_DAM\_MWP_{k,h}^{i,2} - Imp\_DAM\_MWP_{k,h}^{i,p1},0) + DAM\_GOG_{k,h}^{m}}$ $DAM\_P2\_PMT = -1\text{x} \sum_{H,K}^{M} [Max(Imp\_DAM\_MWP_{k,h}^{i,p2} - Imp\_DAM\_MWP_{k,h}^{i,p1},0) + DAM\_GOG_{k,h}^{m}]$ and where : $Imp\_DAM\_MWP_{k,h}^{i,p2} = Max[0, DAM\_COMP1_{k,h}^{i} + DAM\_COMP2_{k,h}^{i}]$ and each component is determined as follows: i. $DAM\_COMP1_{k,h}^{i} = -1 \times [OP(DAM\_LMP_{h}^{i}, DAM\_QSI_{k,h}^{i,p2}, DAM\_BE_{k,h}^{i}) - OP(DAM\_LMP_{h}^{i}, DAM\_EOP_{k,h}^{i}, DAM\_BE_{k,h}^{i})]$ ii. $DAM\_COMP2_{k,h}^{i} = -1 \times \sum_{R}[OP(DAM\_PROR_{r,h}^{i}, DAM\_QSOR_{r,k,h}^{i,p2}, DAM\_BOR_{r,k,h}^{i}) - OP(DAM\_PROR_{r,h}^{i}, DAM\_OR\_EOP_{r,k,h}^{i}, DAM\_BOR_{r,k,h}^{i})]$ $Imp\_DAM\_MWP_{k,h}^{i,p1} = Max[0, DAM\_COMP1_{k,h}^{i} + DAM\_COMP2_{k,h}^{i}]$ and each component is determined as follows: a. $DAM\_COMP1_{k,h}^{i} = -1 \times [OP(DAM\_LMP_{h}^{i}, DAM\_QSI_{k,h}^{i,p1}, DAM\_BE_{kh}^{i}) - OP(DAM\_LMP_{h}^{i}, DAM\_EOP_{k,h}^{i}, DAM\_BE_{k,h}^{i})]$ b. $DAM\_COMP2_{k,h}^{i} = -1 \times \sum_{R}[OP(DAM\_PROR_{r,h}^{i}, DAM\_QSOR_{r,k,h}^{i,p1}, DAM\_BOR_{r,k,h}^{i}) - OP(DAM\_PROR_{r,h}^{i}, DAM\_OR\_EOP_{r,k,h}^{i}, DAM\_BOR_{r,k,h}^{i})]$ $DAM\_GOG_{k,h}^{m}$ = calculated in accordance with MR Ch.9 s.4.4.							