APPENDIX M – COMPENSATION ARISING FROM MARKET ENERGY PRICE REVISION

M.1 PURPOSE AND DEFINITIONS

M.1.1 This Appendix sets forth the criteria and calculations for compensation referred to in section 10.2.10 of Chapter 6. Unless otherwise indicated, the criteria and calculations described in this Appendix shall be applied for each dispatch period and to each generation registered facility.

M.1.2 In this Appendix, the following definitions apply:

\[
\begin{align*}
\text{RMEP}_m &= \text{revised market energy price (in S/MWh) at MNN m for the relevant dispatch period, determined in accordance with section 10 of Chapter 6} \\
\text{IEQ}_m &= \text{injection energy quantity (in MWh) for GRF m for the settlement interval corresponding to the relevant dispatch period, based on the metering data submitted by the market support services licensee for the purposes of the final settlement statement in accordance with section B.3.1 of Appendix 7B} \\
\text{OQ}_m &= \text{GRF m’s scheduled energy output (in MW) for the relevant dispatch period, being:} \\
& \quad \text{its scheduled energy output in the real-time dispatch schedule that is deemed to be dispatch instructions issued by the PSO for the relevant dispatch period, or} \\
& \quad \text{if the PSO did not use the real-time dispatch schedule as the dispatch instructions or if the real-time dispatch schedule was not available, the highest energy output level that GRF m was instructed for the relevant dispatch period} \\
\text{spq} &= \text{index of a specific price-quantity pair in an energy offer} \\
\text{pq} &= \text{index of a price-quantity pair in an energy offer, ordered in ascending order of price} \\
\text{Q}^{m,pq} &= \text{quantity of a price-quantity pair pq of the energy offer of GRF m for the relevant dispatch period}
\end{align*}
\]
\[ P_{m,pq} = \text{price of a } \textit{price-quantity pair } pq \text{ for the } \textit{energy offer of GRF m for the relevant dispatch period} \]

\[ \sum_{pq=1}^{spq} Q_{m,pq} = 0, \text{ for } spq = 1 \]

\[ \text{COMP}_{m,pq} = \text{compensation payable in relation to a } \textit{price-quantity pair } pq\text{ of the } \textit{energy offer of GRF m for the relevant dispatch period} \]

\[ \text{COMP}_{m} = \text{compensation payable to GRF m for the relevant dispatch period} \]

\section*{M.2 Criteria for Compensation}

M.2.1 A \textit{generation registered facility} is eligible for compensation referred to in section 10.2.10 of Chapter 6 for a given \textit{dispatch period} if the revised \textit{market energy price} at the \textit{market network node} associated with the \textit{generation registered facility}:

M.2.1.1 is lower than that in the \textit{real-time price schedule}; or

M.2.1.2 in the event that no \textit{real-time price schedule} was produced, is lower than the price in the \textit{price-quantity pair} spq of its \textit{energy offer} that satisfies the following conditions:

\begin{enumerate}
  \item \[ \sum_{pq=1}^{spq} Q_{m,pq} < OQ_{m} \text{ ; and} \]
  \item \[ \sum_{pq=1}^{spq} Q_{m,pq} \geq OQ_{m}. \]
\end{enumerate}

\section*{M.3 Calculation of Compensation Amount}

M.3.1 The reference quantity, \( RQ_{m} \), for a given \textit{dispatch period} in respect of a \textit{generation registered facility}:

M.3.1.1 which was at all relevant times operating under \textit{AGC}, would be \((\text{IEQ}_{m} \times 2)\); and

M.3.1.2 in all other cases, would be the minimum of \((\text{IEQ}_{m} \times 2)\) and \(OQ_{m}\).
M.3.2 For each generation registered facility which meets the criteria in section M.2.1, the compensation amount as described in section 10.2.10 of Chapter 6 for that dispatch period shall be calculated as follows:

\[ \text{COMP}^m = \sum_{pq=1}^{10} \text{COMP}^{m,pq} \]

M.3.3 For the purposes of section M.3.2, the compensation amount for each price-quantity pair \( spq \) of the energy offer of a generation registered facility shall be calculated as follows:

M.3.3.1 If \( \sum_{pq=1}^{spq-1} Q^{m,pq} \geq RQ^m \), then \( \text{COMP}^{m,spq} = 0 \)

M.3.3.2 Otherwise,

\[ \text{COMP}^{m,spq} = \max[(P^{m,spq} - \text{RMEP}^m), 0] \times \min(\sum_{pq=1}^{spq} Q^{m,pq}, RQ^m) - \sum_{pq=1}^{spq-1} Q^{m,pq} ] \times 0.5 \]

Explanatory Note:
The following example illustrates the compensation calculation, assuming GRF \( m \) meets the criteria under section M.2.1.

\[ \text{COMP}^{m,1} = 0 \text{ (Based on section M.3.3.2, since } P^{m,1} \leq \text{RMEP}^m) \]
\[ \text{COMP}^{m,2} = 0 \text{ (Based on section M.3.3.2, since } P^{m,2} \leq \text{RMEP}^m) \]
\[ \text{COMP}^{m,3} = \max[(120 - 100), 0] \times \min(30, 35) - 20 \times 0.5 \]
\[ = 20 \times 10 \times 0.5 = $100 \text{ (Based on section M.3.3.2)} \]
\[ \text{COMP}^{m,4} = \max[(130 - 100), 0] \times \min(40, 35) - 30 \times 0.5 \]
\[ = 30 \times 5 \times 0.5 = $75 \text{ (Based on section M.3.3.2)} \]

\[ \text{COMP}^{m,5} = 0 \text{ (Based on section M.3.3.1, since } \sum_{pq=1}^{5} Q^{m,pq} = 40 \text{, which is more than } RQ^{m} \text{)} \]

Hence, total compensation payable to GRF m is:

\[ \text{COMP}^{m} = \text{COMP}^{m,1} + \text{COMP}^{m,2} + \text{COMP}^{m,3} + \text{COMP}^{m,4} + \text{COMP}^{m,5} \]

\[ = $0 + $0 + $100 + $75 + $0 \]

\[ = $175 \]

M.3.4 For each request for compensation under section 10.2.10 of Chapter 6 that is received by the EMC, the EMC may request that the PSO provide the following data to the EMC in respect of the generation registered facility for the dispatch period that the compensation request relates:

M.3.4.1 whether the generation registered facility was at all relevant times operating under AGC; and

M.3.4.2 if the generation registered facility was not at all relevant times operating under AGC, provide the dispatch instruction relating to the highest energy output level (in MW) that is issued by the PSO to the generation registered facility.

The PSO shall provide the aforementioned data within 3 business days of the EMC’s request.