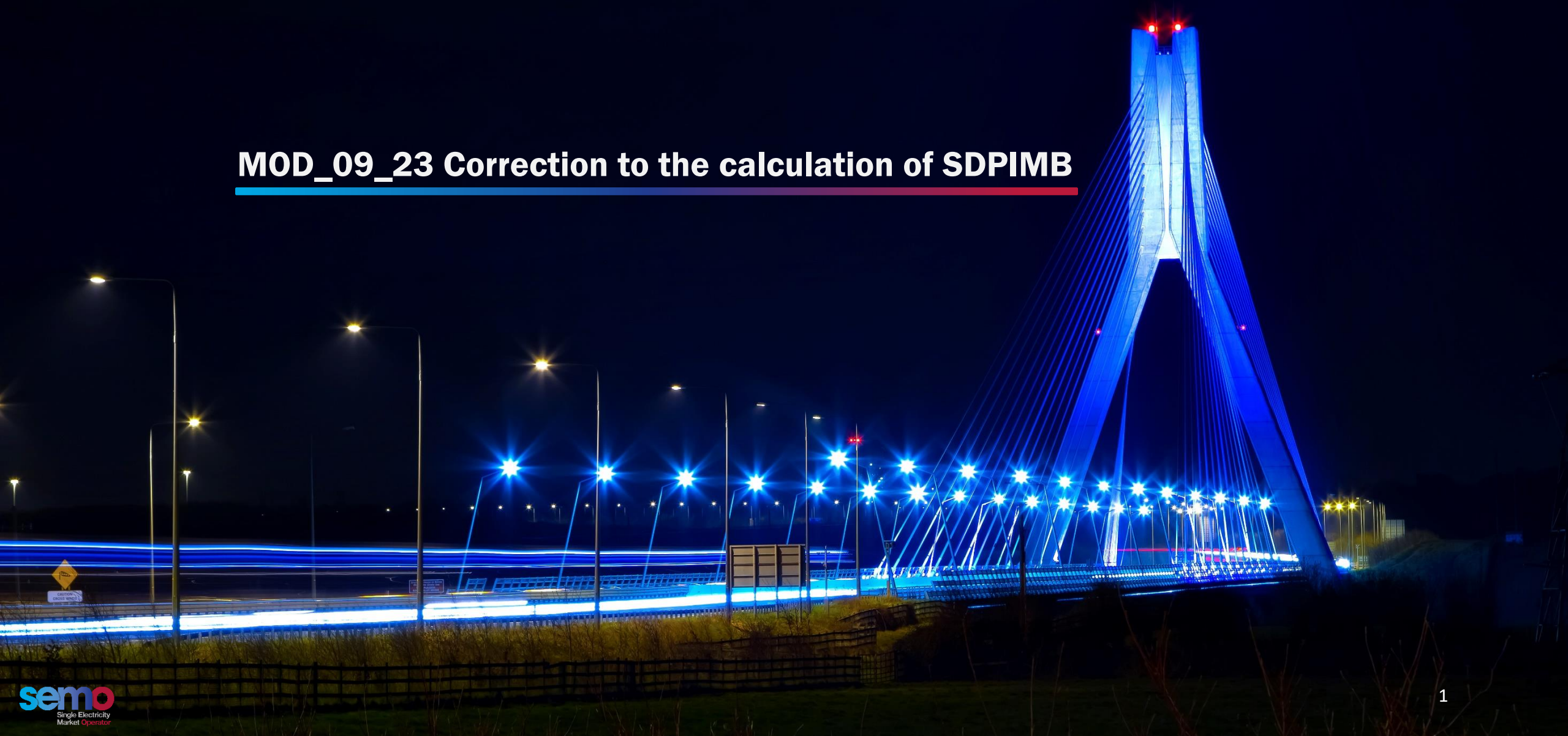


MOD_09_23 Correction to the calculation of SDPIMB



Modification Overview

- This modification has been raised to resolve an issue within the Code with regards to the calculation of SDPIMB.
 - Note this is only an issue within the Code, the Settlement system is calculating SDPIMB correctly.
- SDPIMB is the calculation the standard deviation of the PIMB over the period of the Historical Assessment Period (HAP).
- When calculating the standard deviation, the formula should use the “*sum of the squares*” and “*square of the sums*” for the same sample of data (I.E. same range of data).
- The current SDPIMB formula is incorrect as it calculates the “*sum of the squares*” for the date range within the Undefined Exposure Period (UEP; currently 7 days) instead of the HAP.
- Consequently, the formula in the Code is attempting to calculate the standard deviation using a period of 7 days and 100 days.

Modification Changes

- **Current Formula**

G.14.2.4 The standard deviation of the Daily Average Imbalance Settlement Price ($SDPIMB_g$) in the Historical Assessment Period H to be applied for the Undefined Exposure Period g shall be calculated by the Market Operator as follows:

$$SDPIMB_g = \sqrt{\frac{NDAPIMB_g \times \sum_{d \text{ in } g} (DAPIMB_d)^2 - (\sum_{d \text{ in } H} DAPIMB_d)^2}{NDAPIMB_g \times (NDAPIMB_g - 1)}}$$

where:

- (a) $NDAPIMB_g$ is the number of all Daily Average Imbalance Settlement Prices in the Historical Assessment Period H to be applied for the Undefined Exposure Period g as calculated in accordance with paragraph G.14.2.2;
- (b) $DAPIMB_d$ is the Daily Average Imbalance Settlement Price for Settlement Day d as calculated in accordance with paragraph G.14.2.1; and
- (c) $\sum_{d \text{ in } H}$ is a summation over all Settlement Days d in the Historical Assessment Period.

- **Proposed Change**

$$SDPIMB_g = \sqrt{\frac{NDAPIMB_g \times \sum_{d \text{ in } gH} (DAPIMB_d)^2 - (\sum_{d \text{ in } H} DAPIMB_d)^2}{NDAPIMB_g \times (NDAPIMB_g - 1)}}$$

Questions?