Real Time Engineering Ltd

The Moyle Interconnector Trading System (MITS) and the SEM

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Introduction

Topics

➢ Overview of the MITS;

➢ Impact of the SEM on the MITS;

➢ Calculation of Active Interconnector Capacity Holdings (AICHs);

➢ Calculation of Modified Interconnector Unit Nominations (MIUNs).

Overview of the MITS

Brief summary of MITS functionality:

➢Facilitates capacity allocation and energy trading on the Moyle Interconnector;

➢MICH holds Capacity Contract;

➢Energy contracts between MICH and MIU;

➢Interface with the BETTA market (Physical Notifications, Interconnector Scheduling);

➢Currently undergoing redevelopment to comply with obligations of the SEM.

Operation of the MITS in the SEM

Existing MITS functionality that will remain unchanged:

➢Maintenance and Revision of ATC;

➢Capacity Rescale;

➢Energy Rescale;

➢Interface with BETTA.

Operation of the MITS in the SEM

Maintenance and Revision of ATC

➢SONI Staff enter and maintain the ATC on the MITS;

➢When the ATC changes, SONI Control Engineers enter the new values into the MITS as soon as operationally possible;

➢The MITS sends email and SMS alerts to the registered Interconnector Users to advise that there has been a change to ATC;

➢Revised ATC (& MIUNs if post-SEM Gate Closure) are sent to the Market Operator;

➢The Revision of ATC process is described in a bit more detail later in the presentation.

Operation of the MITS in the SEM

Capacity Rescale

➢This is now the process by which Active Interconnector Unit Capacity Holdings (Import and Export) are determined;

➢This process is described in more detail later in the presentation.

Operation of the MITS in the SEM

Energy Rescale

➢This is the process which determines the Modified Interconnector Unit Nominations;

➢This process is described later in the presentation.

Operation of the MITS in the SEM

Interface with BETTA

➢Physical Notifications (PNs), which are equivalent to MIUNs, are calculated and submitted to the BETTA market on behalf of Interconnector Users;

➢Interconnector Schedule is exchanged with NGC UK and sent to the Moyle Operational systems.

Operation of the MITS in the SEM

Amended MITS functionality as a result of new SEM processes:

➢ Entering nominations;

➢ Interconnector Units replacing Energy Contracts;

> ➢ MICH and MIU no longer exist in the MITS;

➢ Gate Closure;

> ➢ Definition of Gate Closure has changed due to SEM Nominations process.

New MITS functionality introduced for the SEM:

➢ Interface with SEM central systems;

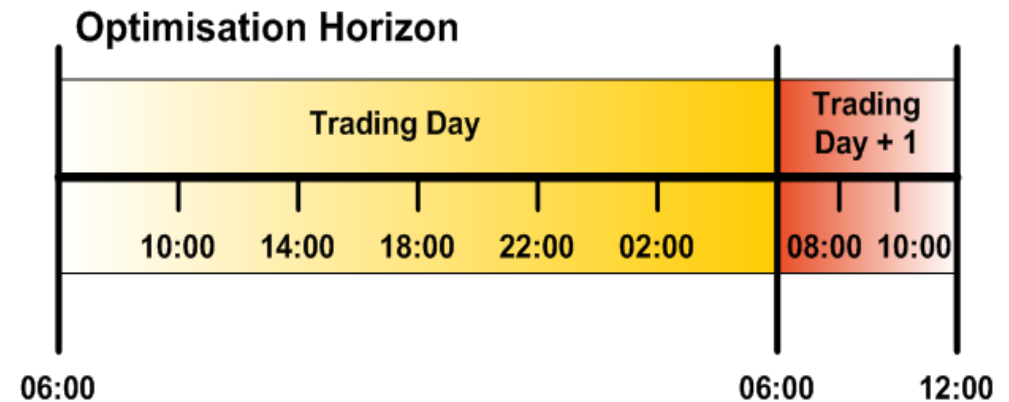➢ SO Interconnector Trades.

Operation of the MITS in the SEM

Interface to the SEM

➢**Five outbound data feeds from the MITS:**

   ➢Available Transfer Capacity;

   ➢Interconnector Unit Capacity Holdings;

   ➢Active Interconnector Unit Capacity Holdings;

   ➢Modified Interconnector Unit Nominations;

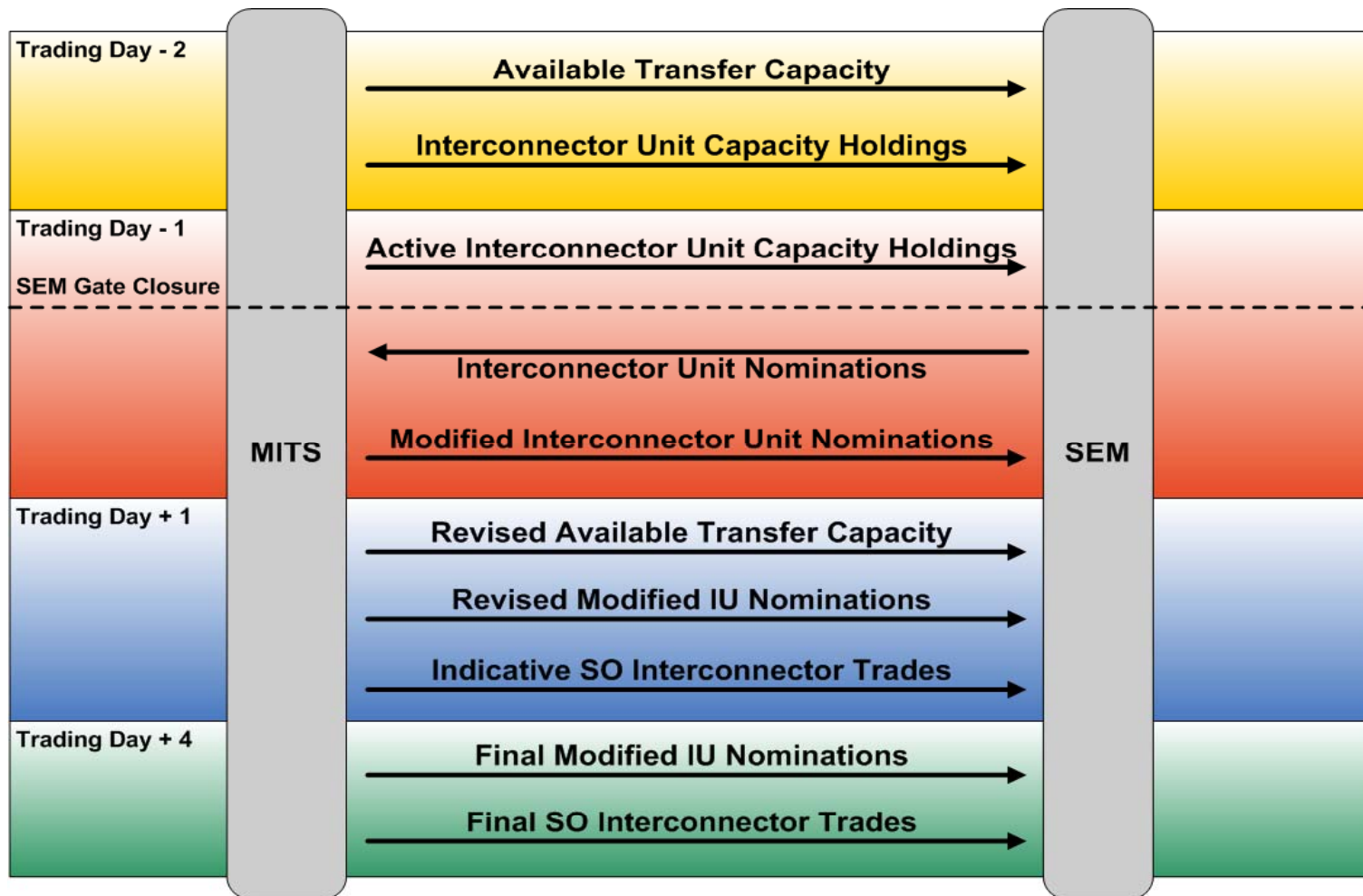   ➢SO Interconnector Trades.

➢**One inbound data feed to the MITS:**

   ➢Interconnector Unit Nominations.

Optimisation Horizon — Trading Day / Trading Day + 1
06:00 | 10:00 | 14:00 | 18:00 | 22:00 | 02:00 | 06:00 | 08:00 | 10:00 | 12:00

Operation of the MITS in the SEM

Interface with the SEM - scheduled feeds

Operation of the MITS in the SEM

Revision of ATC Process

TD-2 – 09:30: Initial submission of ATC to the SEM

Submit Revised ATC to the SEM

TD-1 – 10:00: Initial calculation and submission of Active IU Capacity Holdings to the SEM

Submit Revised ATC to the SEM
Recalculate Active IU Capacity Holdings and Submit to the SEM

TD-1 – Post-SEM Gate Closure: Initial calculation of MIUNs and submission to the SEM

Recalculate MIUNs and Submit to the SEM

TD+1 – 12:00: Scheduled submission of revised ATC to the SEM
Scheduled submission of revised MIUNs to the SEM

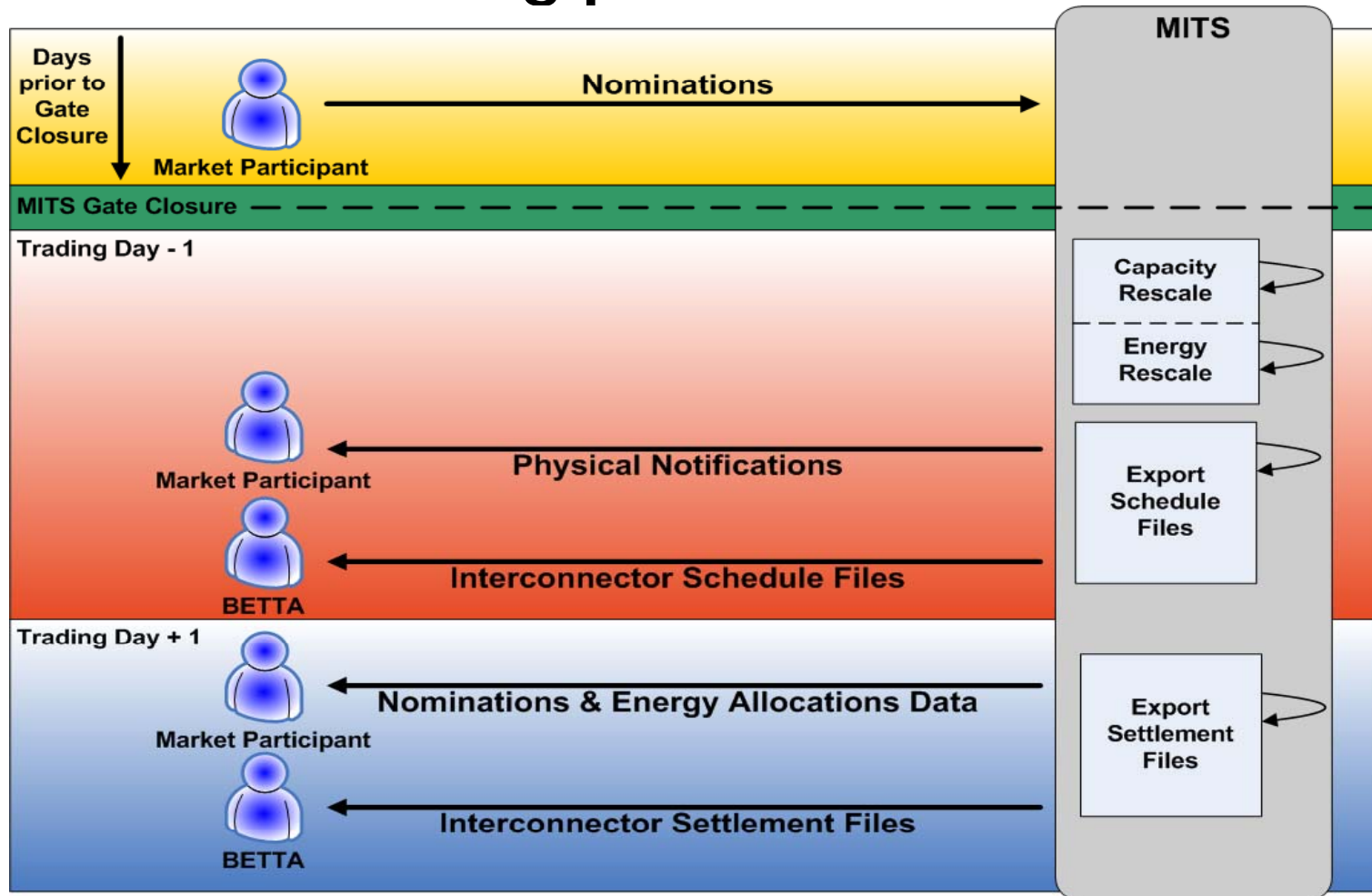# Calculation of Active Interconnector Capacity Holdings (AICHs)

Capacity Rescale

➢Calculation of Import and Export AICH has not changed;

➢In 'normal' operation where the ATC (import and export) has not changed then the AICH = Maximum Capacity Holding;

➢If the ATC is reduced and the sum of all the capacity holdings is greater than the revised ATC, the AICHs are pro-rated in relation to their Maximum Capacity Holdings;

➢No priority allocation of capacity among Interconnector Units.
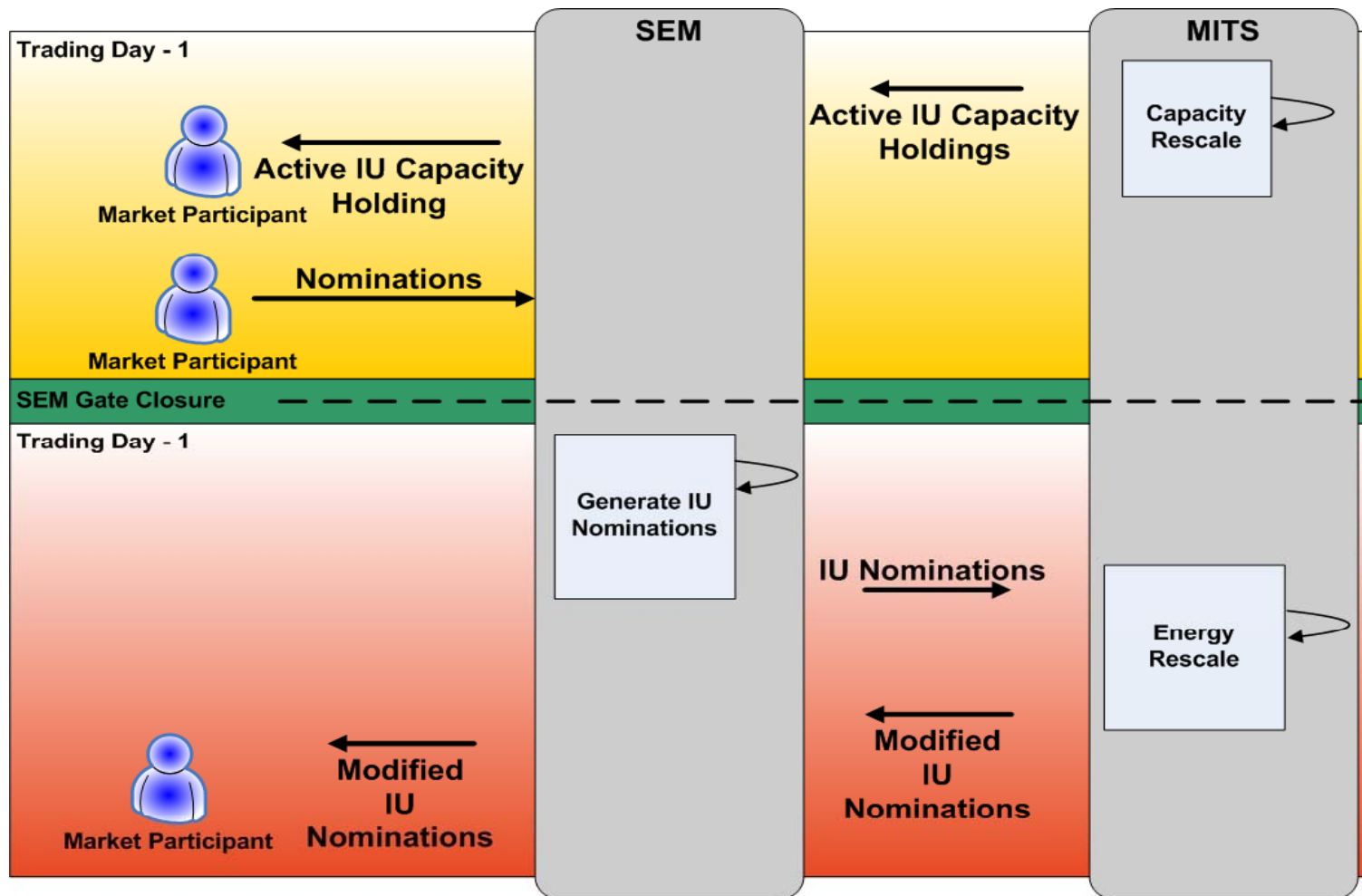
Calculation of MIUNs

Overview of existing process

Calculation of MIUNs

Overview of new process

Calculation of MIUNs

Summary of MIUN Calculation

➤ Rules for calculation remain unchanged since introduction of BETTA;

➤ Specific rules are outlined in both AP2 and the Moyle Interconnector Procedures;

➤ Changes to terminology only;

➤ No redevelopment of calculation engine within MITS;

➤ Rules designed to **equitably maximise the energy allocated** for each trading period whilst respecting the physical constraints of the interconnector;

➤ No priority allocation of energy in the calculation of MIUNs.

Calculation of MIUNs

Rules Summary (1)

➢MIUNs must not exceed IUNs;

➢Interconnector ramp rate divided up pro-rata;

➢The sum of the IUNs cannot exceed the ATC (export and import);

➢If IUN in a trading period < IUN for previous trading period, then ramping must start before the trading period;

➢If IUN in a trading period > IUN for previous trading period, then ramping cannot start until the beginning of the trading period.

Calculation of MIUNs

Rules Summary (2)

➢Where multiple ramps in a trading period result in no change to the sum of the IUNs, all ramps are instantaneous;

➢Any IUNs moving in opposition to the net flow of the interconnector are deemed to move instantaneously;

➢In the case of Moyle, ramps in the 'deadband' +/- 15MW are instantaneous;

Please refer to AP2 and Moyle Interconnector procedures for more detail.

Conclusion

Summary of Topics Covered

➢Overview of the MITS;

➢Impact of the SEM on the MITS;

➢Calculation of Active Interconnector Capacity Holdings;

➢Calculation of Modified Interconnector Unit Nominations.