TYNAGH ENERGY
LIMITED

EirGrid
The Oval
160 Shelbourne Road
Ballsbridge
Dublin 4

Ref: TEL/PH/17/199

13th October 2017

RE: Proposed Day-Ahead Market Products.

Dear Sirs,

Tynagh Energy Limited (TEL) welcomes the opportunity to respond to the Day-Ahead Market (DAM) products questions:

1. *Do you feel that the I-SEM project should prioritise an approach to DAM product testing which focuses on functionality (i.e. provides the widest range of products) or which focuses on certainty in the short term (i.e. moves to a minimum product set to achieve certainty on products as soon as possible)?*
2. *If a minimum product set is required, or the level of usage limits on the three products combined is overly restrictive, would you prefer an option (Option A) which used simple orders in combination with block orders (approximate max of 4-5 blocks per unit) or an option (Option B) which used simple orders in combination with complex orders?*

In the BLG meeting (05/10) and I-SEM training session documents it has been suggested that submitting a P/Q pair with a price of -€500/MWh would prevent a generator from double two shifting. TEL have two issues with this suggestion. The first is that this bidding strategy may influence the credit cover requirement on the generator. The second issue is if the DAM price is set at or below the P/Q submitted (€0/MWh to -€500/MWh) by the generator. In this instance, there it is possible that the generator will receive an ex-ante quantity greater than 0 MW or and less than its minimum generation level. Such a schedule would be asking the generator to run below their minimum generation or be scheduled off for a period between two cycles.

TEL believe that the current proposal places significant additional risk of double two shifting (starting twice) and infeasible schedules on mid-merit CCGT plants. TEL believe that the consequences of using complex orders in the DAM have not been fully thought through. While generator risk has been discussed, the full implications of infeasible schedules have not been addressed.

TEL believe there are three types of infeasible schedules that could occur under the complex orders; (1) double two shifting in one trading day, (2) being scheduled for less than minimum off time and (3) scheduled below minimum generation levels.

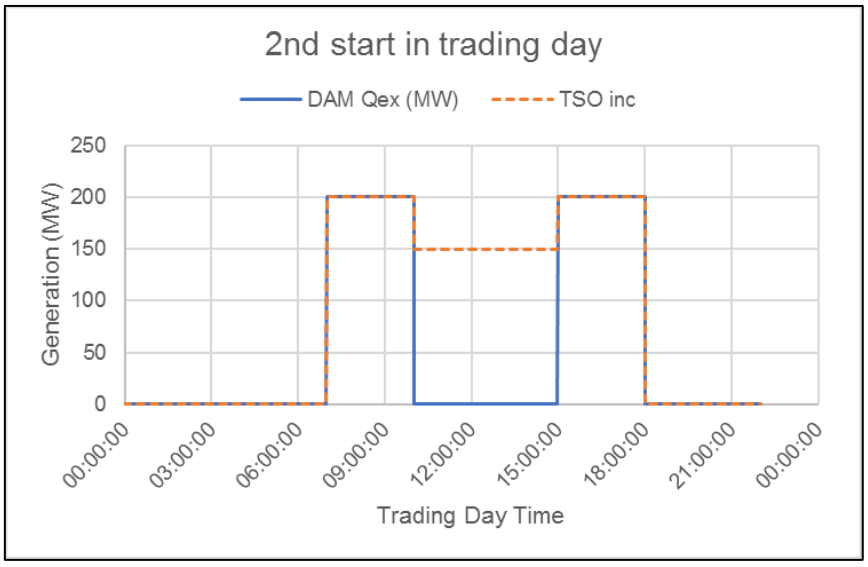
1. A plant has a second start in the same day (double two shifting)
The DAM complex offer has the potential to create a schedule with two starts. If participants were asked to include the cost of a second start up through either the fixed Minimum Income Condition (MIC) or the variable MIC it would be extremely costly to the market. A sample double

The Crescent Building, Northwood Park, Santry
Dublin 9
IRELAND
TEL: +353 (0) 1 857 8700
FAX: +353 (0) 1 857 8701

two shifting DAM schedule is illustrated in the figure below. If a plant were to dispatch to DAM position, as shown in the figure below, they would be exposed to a second start which they will not have recovered through their DAM complex offers.

The other concern to generators is the recovery and payment of start-up costs through F.11 of the T&SC settlement. For example, using the figure below, if the TSO accepts the PN and subsequently decides to inc the plant to their minimum generation level (150 MW from 10:00 to 15:00 in the figure below) the plant will be required under F11 of the TSC to pay back a start-up cost for the second start at 15:00, which they were not paid for in the Day Ahead Market.

The potential double two shifting schedule will expose generators to non-recovery of the start-up costs from the second start-up in the DAM if run to the schedule or liable to pay start-up costs to SEMO if kept on.



2. A plant is off for less than its minimum on time

A second issue with double two shifting is the possibility that the complex offers could create a DAM schedule that is in violation of the generators minimum on time (4 hours). The figure below illustrates such a DAM schedule where the generator is required to switch off at 13:00 for 2 hours and come back on at 15:00.

The TSOs current position on linking PNs to the ex-ante position is that the PNs must be within the maximum and minimum availability. Thus, the generator may decide to abide by the de facto rules regarding FPN's and effectively bid in their technically infeasible ex ante position. This would force the TSO to decide whether to Inc or Dec the participant from its ex ante position. The onus for this is now on the TSO to solve not the participant.

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The Crescent Building, Northwood Park, Santry, Dublin 9, IRELAND

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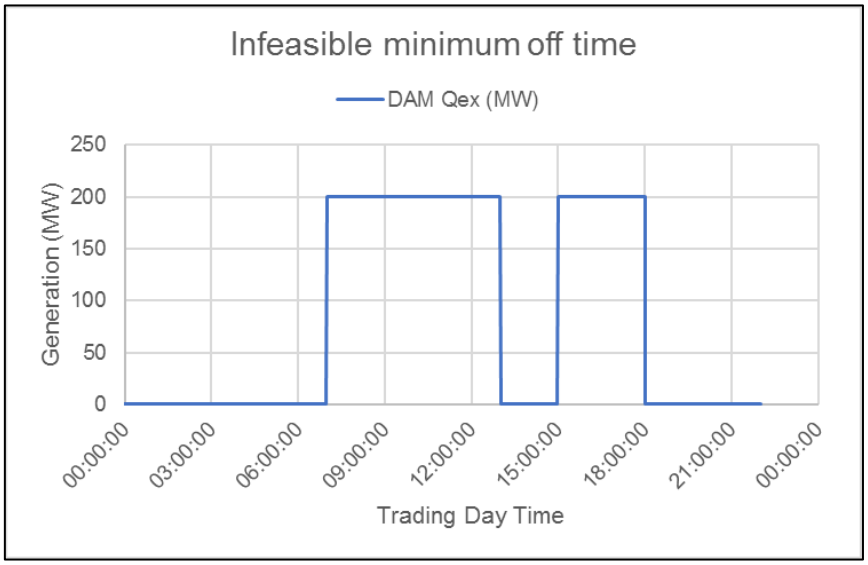
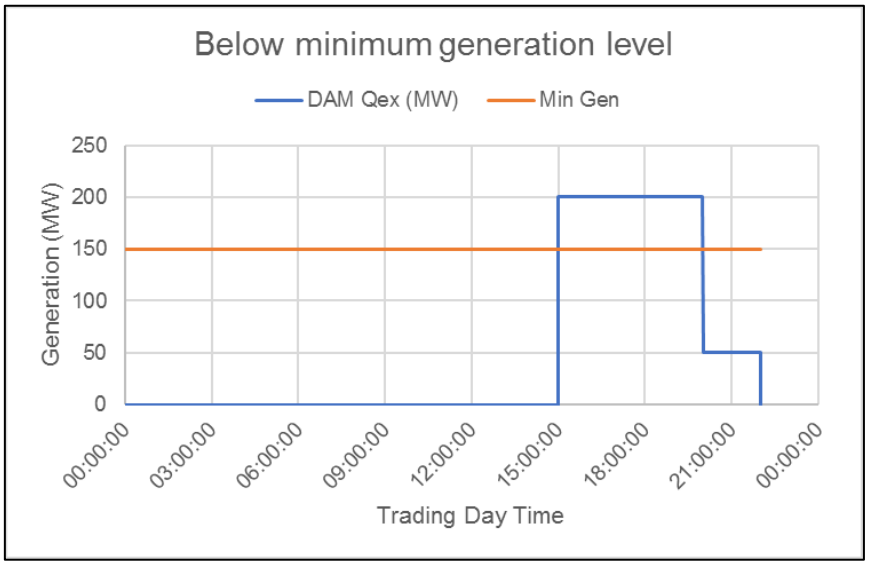


However, as in example 1, the participant would still be liable to pay back the additional market start to SEMO under F.11.

3. A plant is scheduled to below its minimum generation level:

The third possible schedule is an ex-ante quantity below the generators minimum generation level, as shown in the figure below. The generator cannot meet this schedule as it cannot submit a PN with a value below its minimum generation level.



Potential Solution

The selection of the DAM products is an issue that impacts on generators, the RAs, the T&SC, SEMO, SEMOpx and the TSOs. TEL have tried to determine a solution that would (a) reduce generators exposure to the potential infeasible scheduling from a product set of simple and complex order, (b) allow the SEMOpx to progress with the PCR process and (c) be simple and quick to implement. To solve the scheduling risk, TEL propose that generators could use a combination of the SEMOpx proposal for DAM complex P/Q at €0/MWh or below and the following:

1. Generators can submit DAM PNs exactly as per the DAM ex-ante position. For example, generators submit DAM PNs that are in violation of the minimum on/off times.
    - This is currently not an issue according to the information from the I-SEM training session.
2. Generators can submit BM complex inc and dec P/Q pairs with the start-up costs spread across the relevant periods. (See appendix for example)
    - The TSOs will dispatch & schedule the generator as per the submitted Technical Offer Data which will not allow a violation of the minimum on/off times.
    - Therefore, the TSO will have to make a decision to dec or inc the generator from the DAM PN.
        - It should be noted that if the TSO incs the generator to it's minimum generation or decs the generator to 0 MW neither of these actions will set the imbalance price as both actions will flagged. Therefore, this proposal will not impact on the imbalance pricing.
    - The RAs will need to allow market participants to include start-up costs in the complex P/Q pairs for such periods via the BMBCOP.
3. Section F .11 is amended so that generators will not be charged to pay back a second start in one day.

TEL agree that submitting a DAM complex P/Q at €0/MWh or below could reduce the amount of times EUPHEMIA creates a double two-shift schedule. However, when EUPHEMIA does create such a schedule the generator should not be exposed to the costs of the second start-up. The above proposal reduces the generators exposure to F.11 in the T&SC simply and effectively by allowing the TSO to make the most economic decision to deviate from the DAM PN. TEL do not believe that all of the scheduling risk should be placed upon the generators and urge the project team and RAs to consider this proposal or to host a workshop with attendance from the RA's, SEMO, SEMOpx, the TSO and industry to discuss these implications amongst others of using complex order types.

In response to the specific questions asked;

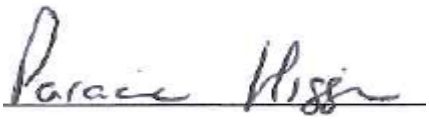
1. *Do you feel that the I-SEM project should prioritise an approach to DAM product testing which focuses on functionality (i.e. provides the widest range of products) or which focuses on certainty in the short term (i.e. moves to a minimum product set to achieve certainty on products as soon as possible)?*
    - Following the comments made by the Project team and the RAs at the BLG (05/10), TEL feel that the I-SEM project should prioritise an approach to DAM product testing with focuses on certainty in the short term while trying to find solutions, such as the one proposed in this response, that will reduce the scheduling risk to generators.
2. *If a minimum product set is required, or the level of usage limits on the three products combined is overly restrictive, would you prefer an option (Option A) which used simple orders in combination with block orders (approximate max of 4-5 blocks per unit) or an option (Option B) which used simple orders in combination with complex orders?*
    - TEL believe that block order with a maximum of 4-5 blocks per unit is not a viable option for go-live. Consequently, TEL agree with progressing with simple order in combination with complex orders if it is implemented in conjunction with TEL's proposed BM Complex P/Q bidding and ex-ante PN submission solution.

In summary, SEMOpx may think that "*scheduling risk only affects a subset of the units which are present in the SEM*"[1] but this subset will grow significantly with the increase in installed wind

[1] Information paper on SEMOpx Day-Ahead Market Products (October 2017)

capacity required to achieve the 2020 targets. TEL urge the TSOs, SEMO, SEMOpx and RAs to address the concerns on scheduling risk from a DAM with only simple and complex products.

Yours sincerely,



Paraic Higgins
I-SEM Analyst

TYNAGH ENERGY LIMITED

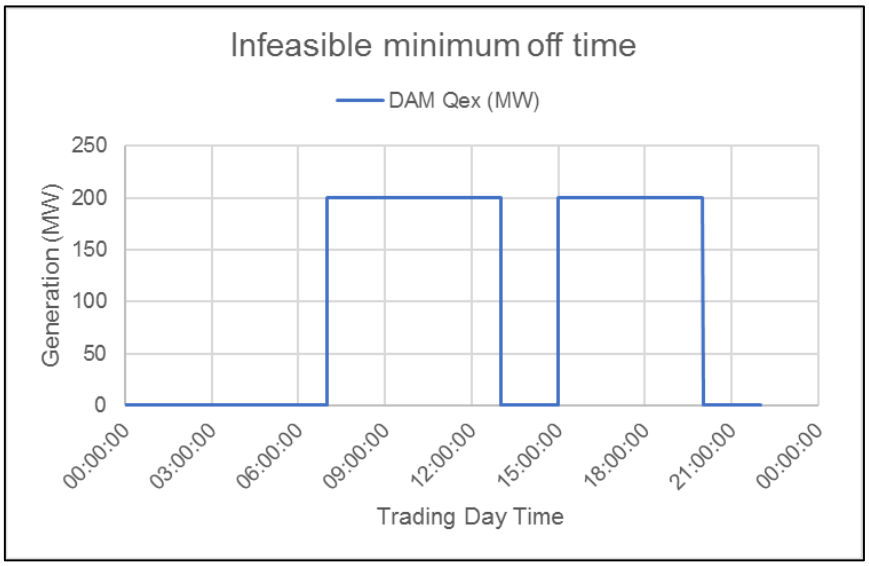
The Crescent Building, Northwood Park, Santry, Dublin 9, IRELAND

TEL: +353 (0) 1 8578700 • **FAX:** +353 (0) 1 8578701

Appendix

Example 1

- Start-up cost: €50,000
- Min generation: 200 MW
- Max generation: 300 MW
- DAM Schedule:
    - First cycle is for six hours.
    - Off for two hours.
    - Second cycle is for five hours.
    - The average DAM Price was €55/MWh from 07:00 to 13:00.



- Generator submits BM Complex P/Q pairs at 13:00 D-1 which will apply at the start of the trading day:

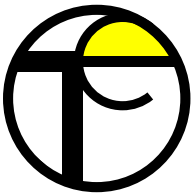
Q (MW)	Dec P (€/MWh)	Inc P (€/MWh)
0	€0	€0
200	€50.00	€50.00
300	€55.00	€55.00

- At 05:45 the generator will submit a new BM Complex P/Q pairs:

Q (MW)	Dec P (€/MWh)	Inc P (€/MWh)
0	€13.33	€13.33
200	€50.00	€175.00
300	€55.00	€180.00

    - The Dec P for 0 MW of €13.33/MWh was calculated as follows:

€55/MWh (the clearing price in the DAM)
less



€41.67/MWh (€50,000 / 6 hours (length of time for the first cycle) / 200 MW (dec amount to 0 MW))

- The Inc P for 0 MW of €175 /MWh was calculated as follows:

€50/MWh (SRMC at 200 MW)
plus
€125/MWh (€50,000 / 2 hours (length of time for the first cycle) / 200 MW (dec amount to 0 MW))

- At 06:00 the TSO will decide to either dec the plant to 0 MW from 07:00 to 13:00 or inc the plant to 200 MW from 13:00 to 15:00.
  - If the TSO decs the plant off from 07:00 to 13:00 the generator will:
    - receive €66,000 (€55 x 200 MW x 6 hours) in the DAM
    - pay SEMO €16,000 (€13.33 x 200 MW x 6 hours) for a dec and €50,000 through F.11 for the start-up at 07:00
    - resulting in a net financial position of €0 and no scheduling risk
  - If the TSO incs the plant to 200 MW from 13:00 to 15:00 the generator will:
    - receive €70,000 (€175 x 200 MW x 2 hours) for the inc
    - pay SEMO €50,000 through F.11 for the second start up at 15:00
    - have a SRMC expenditure of €20,000 (€50 x 200 MW x 2 hours)
    - resulting in a net financial position of €0 and no scheduling risk

- It should be noted that if the TSO incs the generator to it's minimum generation or decs the generator to 0 MW neither of these actions will set the imbalance price as both actions will flagged. Thus the TSO action will not impact on the imbalance pricing for these periods.

- At 14:15 the generator will submit a new BM Complex P/Q pairs that will continue for the remainder of the trading day:

Q (MW)	Dec P (€/MWh)	Inc P (€/MWh)
0	€0	€0
200	€50.00	€50.00
300	€55.00	€55.00