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RE: SEM-20-046 - Consultation Paper on Imperfections Charge October 2020 – September 2021 and Reforecast Report October 2018 – September 2019 (the “Consultation”)

Dear Billy,

Bord Gáis Energy (“**BGE**”) welcomes the opportunity to respond to this consultation on the Imperfections Charge proposed for the tariff year 2020/21.

1. Introduction

BGE’s significant concerns regarding this Consultation relate to:

- i. the accuracy of the TSO’s forecasting model which underlies the determination of the annual Imperfections Charge and also the determination of the Transmission Loss Adjustment Factors (“**TLAFs**”) for the following year (i.e. 2021/22), and;
- ii. the continuing upward trend of the Dispatch Balancing Costs (“**DBC**s”), wholly comprised of the Total Constraint Costs, and the near €85m swing in the K-factor Adjustment.

While we welcome the reduction of the proposed Imperfections Charge from €10.40 in 2019/20 to €8.51 for this coming year (2020/21) our review of this year’s Consultation documentation raises considerable concerns about the modelling accuracy of the assumptions and data sets used and the forecast costs making up the proposed Imperfections Charge.

The Imperfections Model needs to be accurate both to determine the Imperfections Charges which are recovered from customers, and also as the model is used to calculate other tariffs such as TLAFs. In our assessment the model as outlined in the Consultation could result in outcomes that have significant negative impacts. Specifically, network power flows flowing into large demand areas may not be as high as modelled. The need for supplementary modelling of €74.09m¹ (a significant increase of €23.6m over last year) highlights that the base model needs a review and in our view an adjustment to ensure it is suitable for the new SEM. There is now almost 2 years of new SEM operational data against which the validity of the model’s forecasting output versus the reality of the market can be considered. We therefore believe that now is the time for a wide-scale review of the forecast models used for the proposed Imperfections Charge, and later for TLAFs (i.e. for the 2021/22 TLAFs), and the modelling assumptions and data sets on which they are based.

It is against this context that we outline our concerns and suggestions in the following order:

- In Section 2, we consider the representation of the cost-based modelling assumptions and data sets used in the forecast model; the introduction of dynamic modelling for market coupling; the potential information benefit of a mid-year reforecast; increasing the forecast horizon for data to 3 years to enable businesses to better plan for the future, and; the impacts that system reinforcements, Interconnectors and large projects have on constraints and TLAF values.
- In Section 3 we offer our views and feedback on some of the specific aspects of the forecast costs identified in the proposed Imperfections Charge consultation including the need for an effective DBC incentive under PR5 and the need to better understand and enable foresight of annual K-factor swings.

¹ Forecast Imperfections Revenue Requirement For Tariff Year 2020/21 (Version 1.0) – p12

Given the considerable impact of the accuracy of this model on consumer bills as well as on commercial outcomes, from a TLAFs perspective for example, we urge the Regulatory Authorities (**RAs**) (and the TSOs) to take on board our queries, concerns and suggestions outlined below before finalising the decision on this Consultation and related modelling. We are available to liaise further with the RAs and TSOs on any aspect raised below at any stage.

2. Modelling Assumptions and Data Sets

BGE acknowledges the scale of the task, and the efforts of the TSOs, to forecast the annual Imperfections Charge in the new SEM. However, the significance of the TSO's task corresponds to the importance of accurate results from the forecast outputs, as the consequences of poor accuracy in the forecasts can be significant in an electricity system where greater interconnectivity and increasing levels of renewable generation are to be delivered.

2.1. Cost-Based Model Assumptions

BGE's first consideration relates to the application of a cost-based model to both the ex-ante and balancing markets. Given that the new SEM is now in operation since October 2018 it is in our view reasonable to assume that the difference in bidding approaches between the ex-ante and balancing markets is recognised by the TSOs in their modelling. However, this does not appear to be the case. For example, in the "SEM - Imperfections Revenue requirement" document² (**Appendix 1**), the TSO states:

"The actual dispatch of generation is based on the same commercial data as used in the production of the market schedule."

The TSO further outlines that it uses a cost-based generator model to determine the ex-Ante unconstrained market. In the new SEM, market participants are free to bid strategically into the ex-Ante unconstrained market. The Balancing Market Principles Code of Practice ("**BMPCOP**"), or Bidding Code of Practice (or "**BCOP**") as is currently still being applied, is only relevant when Eirgrid are incrementing or decrementing the unit away from the ex-Ante position (that being the Final Physical Notification – **FPN**) through a balancing action which is settled against the complex commercial offer data ("**CCOD**"). BGE therefore believes that the RAs and TSOs need to revise and adjust the assumptions the TSO is using in their model to determine Dispatch Balancing Costs (**DBC**s) particularly with respect to applying appropriate assumptions for the SEM ex-ante unconstrained market.

Continuing with the current assumptions (i.e. no recognition in the difference in bidding between the ex-ante and balancing markets) in our view potentially raises the risk of increased imperfections costs for consumers and inaccurate network flows and constraint actions. The alternative approach (i.e. recognising the difference in bidding between the ex-ante and balancing markets) potentially reduces this risk given the starting point for the TSO in dispatch in the new SEM is a unit's ex-ante trades (Final Physical Notification – **FPN**). It is plausible in BGE's view to consider that a unit may bid into the ex-ante markets in the new SEM and obtain an FPN that could differ from an FPN that may be based on a unit's CCOD. Depending on the unit and its location on the network for example, the TSO in keeping the unit as close to its FPN as possible (as is required under the new SEM optimisation function) could lead to the solving of local network contingencies without actually incurring constraints costs. Overall BGE believes that updating the model to better reflect the difference in bidding between the ex-ante and balancing markets potentially will change the network flows, losses, constraints and outage planning requirements for the area. Updating the model could also by corollary have an expected positive impact for consumers in terms of reduced dispatch balancing costs where constraint actions are reduced.

A review of the forecast models could also facilitate the provision of an increased level of data to support prudent business management and planning for the benefit of market participants. We ask for data to be made available to participants such as the modelled output and key influencing factors for any year on year changes and that this data be provided for up to 3 years ahead.

2.2. Mid-Year Reforecast

² Forecast Imperfections Revenue Requirement For Tariff Year 2020/21 (Version 1.0) –Appendix 1: "Overview of Imperfections and Modelling Constraint Costs", section 2.1 (p23)

We believe that there is merit in scheduling a reforecast of imperfections charges mid-year for information purposes using updates that are being seen in market operations. These changes could include changes being observed, and could include updated flows / restrictions and infrastructure assumptions, and the impacts of “one-off” events such as the COVID-19 restrictions impact in H1 2020. The output of the mid-year reforecast could provide an advanced more accurate picture of the expected costs making up the Imperfections Charges at year-end and provide insight as to the accuracy of the model and the potential for any significant K-factor changes which is critical information from a consumer perspective. We are not however in favour of the output from the reforecast being used mid-year to change the Imperfections Charge as we do not consider that a mid-year change would be in the consumer interest.

2.3. Dynamic modelling of SEM with interconnected markets

Given the geographic coupling of NI and Scotland, it is reasonable to assume that high wind conditions in one location will coincide with the same or similar conditions in the other. As more onshore and offshore wind generation is developed, this coupling of wind generation and the similarity of conditions between NI and Scotland may serve to further decrease the exports from NI over the Moyle Interconnector. Therefore, the assumption by the TSOs that during high wind conditions the Moyle Interconnector (IC) would be a net exporter merits an assessment of how the TSOs model the ISEM and GB markets in the longer term. The result that the Moyle IC is a net exporter when high wind occurs has not always turned out in the market even when viewed on an hourly directional flow basis.

While the current approach may suffice in the short term, BGE proposes that the implementation of a more dynamic approach to modelling the interaction of the SEM with other markets through interconnectors would, in our view, be more beneficial in the longer term. The possible changes resulting from the Celtic interconnector (IC) coming online suggest the need to develop more proportionate modelling of the flows expected. We believe now is the time to consider changing the approach to modelling interconnected markets, given the additional interconnection expected to become operational / linked with SEM over the coming decade. Modelling developments and improvements before the Celtic IC is commissioned should facilitate a more dynamic representation of the market interactions for the longer term, if the modelling changes are initiated as soon as possible.

2.4. Reinforcements

Given the cost impacts that system constraints have on the proposed and actual Imperfections Charge as well as other tariffs such as TLAFs, we urge the RAs and the TSOs to expedite the delivery of the projects expected to remove and alleviate these constraints and so minimise the extent of these costs insofar as possible.

Looking to the future, BGE feels strongly about the level of transparency provided to market participants of the impact of large projects (such as the Celtic interconnector and increased renewables) on the transmission system, the related planned system reinforcements to accommodate these large projects, and their effects on TLAFs values³. We again request that data (including the impact of planned reinforcements on constraints and TLAf levels on a regional basis) be made available to participants for up to 3 years ahead.

3. Views on Imperfection Charge Proposals

3.1. Dispatch Balancing Costs

We note the continued upwards trend of the DBCs forecast for the coming year, made-up wholly of the Total Constraint Costs. With the real impact these costs have on end consumers, BGE is encouraged by the fact that the RAs have recognised this issue specifically in the current PR5 Consultation⁴ by “...proposing an incentive to reward the TSO for introducing measures/processes to reduce or curtail imperfection costs which are ultimately passed onto the end electricity customers.” We note that the previous incentive mechanism applicable to the TSO to reduce DBCs below forecasts has finished and there is no incentive detailed for the coming year. We welcome the inclusion in the PR5 proposal of a new Strategic Objective incentive for the TSO focused on Imperfections⁵, and we are interested to understand the topics and metrics that the CRU

³ Please see BGE’s response to EirGrid’s Proposed Transmission Loss Adjustment Tariffs (TLAFs) for 2020-2021, dated 31st July 2020 (Section 4, p3)

⁴ (CRU-20-078) PR5 Regulatory Framework, Incentives and Reporting consultation paper, section 8.11 Imperfections & Constraints (p62)

⁵ (CRU-20-078) PR5 Regulatory Framework, Incentives and Reporting consultation paper, Table 13 – CRU PR5 TSO Proposals (p51)

expect to appear on the balanced scorecard for assessment as proposed.⁶ While the proposed incentive looks at a set of planned measures by the TSO to reduce imperfection costs over the PR5 period which is proposed to be assessed annually, BGE asks that the TSO is incentivised to produce an actual year on year reduction to the amount of the constraint costs/ dispatch balancing costs within the Imperfections Charge (rather than the annual increases we are seeing). The delivery of system reinforcement projects that demonstrate a reduction on DBCs and/or an improvement on TLAFs could be an appropriate metric for this incentive.

We see incentives related to the reduction in DBCs as additional to incentives put in place for the TSO to achieve increased stability of the system and to operate it and develop it in such a way as to keep the system costs that are passed on to the customer as low as possible.

We also take this opportunity to re-iterate our ask outlined in section 2.1 above around the appropriateness of applying cost-based assumptions for ex-ante bidding in the new SEM. An adjustment of the model as suggested in section 2.1 could also in our view potentially go some way to alleviating the level of DBCs.

3.2. K-factor

We welcome the fact that this year's K-factor adjustment reduces the proposed Imperfections Charge for the coming tariff year, but we request further details on the cause for the near €85m swing in the K factor Adjustment between last year and this. We agree with the RAs' minded position "*...to allow the full over-recovery to be applied to the 2020/21 tariff*" but we would ask the TSO to advise if this level of tariff recovery volatility is expected to continue in the coming years and how such volatility can be predicted in future. In general we request the RAs' and TSOs' views on the expected K-factor trend for the next 3 years and whether, or what, actions may be taken to reduce the scale and volatility of the annual K-factor swing / value.

3.3. Specific adjustments and amendments to the 2020/21 forecast

Regarding Pumped Storage, we welcome the decision by the RAs to revise down the forecast costs associated with pumped storage units from €11.6m to €6m on the basis that there is no change to the treatment of the units in the new SEM. We query however if the €6m figure as proposed needs to be examined further to understand if the TSOs are forecasting, scheduling and dispatching these units appropriately in the new SEM to minimise the associated dispatch balancing costs. We support the direction by the RAs to the TSOs that they "*...would expect the TSOs to continue to strive to match the market position of the units in dispatch as closely as possible*"⁷ in a bid to reduce the forecast costs. We agree with this principle applying across all unit assumptions in the TSO modelling - where operational datasets are available for units these should in our view be incorporated into the model to reflect a position nearer to the unit's actual running. (Please see our views on the forecasting model in Section 2.1). Such an approach would in our view be more reflective of the new SEM trading rules market participants are operating under since 1 October 2018.

3.4. Additional Risks

We agree with decision by the RAs to withhold €15m of the €30m being sought by the TSOs for the "must not run" TCG (Transmission Constraint Group) as it is already contained within the PLEXOS modelling. We do however challenge the basis for the €15m that was left in place. The basis of these costs is New Cost Drivers in 2020/21 but they are generally contingency estimates (COVID-19 impacts, BREXIT, Clean Energy Package) when the likelihood or impact of the risk materialising is not detailed. This additional charging proposal can unnecessarily increase the level of Imperfections Charge to consumers and may lead to volatility in the K-factor in coming years. We suggest that costs allocated to the TSO are based on the certainty of their impact and so we ask the RAs to reconsider this allowance of €15m to the TSOs under Additional Risks. Designation of this kind of money is also indicative of the urgent need to carry out network reinforcements as soon as possible.

3.5. Fixed Cost Payments

We recognise the need for Fixed Cost (or "Make Whole") payments to units within SEM as they are identified by the TSOs "*...to account for specific additional costs incurred or saved in respect of a Unit where, as a result of a Dispatch Instruction, the Unit is dispatched differently to its Final Physical Notification...*"⁸. These have been on an increasing trend in past years but have more than doubled in the last 3 years⁹ to this year's figure

⁶ We will engage further with the CRU on this issue through the PR5 process

⁷ SEM-20-046 Section 1.1 (p4)

⁸ TSO Imperfections Revenue Requirement 2020/21, footnote 5 (p16)

⁹ SEM-20-046 Section 3.10, Table 2 (p13)

of €15.38m. This cost is on foot of TSO actions and we ask the RAs to query the basis of this increase, include an explanation of such within the Imperfections Charge decision paper, and advise if we are to see this rate of increase continue in the coming years or what actions can be taken to mitigate the trend. The delivery of system reinforcement projects as discussed in Section 2.4 could encourage a positive change to this trend – an additional benefit from expediting system reinforcement project deliveries.

3.6. Miscellaneous

BGE welcomes the specific adjustments and amendments identified in the Consultation relating to the Interconnector Ramp Rate Disparity forecast; the inclusion of NI Gas Transportation Charges (GTC); and the increase associated with the forecast reduction in demand. Furthermore, the continued exclusion of Other System Charges (**OSC**) from the Imperfections Charge by forecasting zero for it is supported.

4. Conclusion

In conclusion, BGE has ongoing concerns as to the level of system charges being imposed that will ultimately impact the end consumer. The Imperfections charge is a key concern for us. Forecast charges need to be as close to the actual outturn costs as possible to minimise the scale and volatility of the cost impacts from these charges on consumers. The assumptions used in the forecast model, and the data sets used directly contribute to the accuracy of forecast outputs.

In Section 2 above, we have highlighted why in our view there are opportunities for improvements to the TSO forecast model for the Imperfections Charge that will benefit not only the accuracy of the forecast Imperfections Charge for the coming tariff year, but the further use of the model in the following year in determining TLAFs. Given the starting point in dispatch is a unit's FPN and the difference in bidding approaches in the ex-ante and balancing markets in the new SEM versus old SEM, we believe that the TSO needs to account for this difference. Accounting for the difference in bidding approaches in our view may lead to more accurate reflections of network flows and constraint actions and importantly DBC levels for consumers and the potential to mitigate K-factor volatility. There is now almost 2 years of new SEM operational data against which the validity of the model's forecasting output versus the reality of the market can be considered. Now is the time for a wide-scale review of the forecast models used and applied pursuant to this Consultation to evaluate the accuracy of the forecast model, and remediate any significant discrepancies identified.

An improvement in the accuracy of the forecast model could improve levels of Imperfections Charge to the benefit of the consumer. There is also considerable scope in our view for an improvement in the forecast model to determine more accurate and predictable TLAFs. This modelling enhancement should provide more accurate system cost forecasts, and benefit consumers with charges that are increasingly reflective of the expected system costs and that are less volatile. Other areas for consideration by the RAs in improving the model under Consultation include:

- i. reforecasts at mid-year providing insights on model accuracy and identifying the potential for any significant year-end corrections needed – we do not however suggest changes to the Imperfections Charge during the tariff year as we do not believe that would be in the consumer interest;
- ii. the provision of the modelled outputs and key influencing factors to any year on year changes to support prudent business planning for up to 3 years ahead;
- iii. the introduction of dynamic modelling of the interaction of SEM with connected markets to build on from the wind-interconnector flow model currently in use for SEM-GB, and;
- iv. the inclusion of the impacts from planned grid reinforcements on constraints and TLAF levels on a regional basis as part of the 3-year forecast set.

In general, as outlined in Section 3 above, we welcome the proposed reduction in the Imperfections Charge for the coming tariff year 2020/ 21 as against the current Imperfections Charge for 2019/ 20, and we support the reductions made by the RAs to the initial TSO proposed charge. It is noted however that some costs continue to trend upwards (e.g. DBCs, Fixed Cost Payments) and we ask the RAs to address these trends with the TSOs by incentivising a real year-on year reduction in the DBC levels, and publishing a clear plan (that will likely need to include the expedient delivery of system reinforcement projects) to reduce the rising Fixed Cost Payments.

In line with our views¹⁰ that the modelling of units in the forecast should strive to closely match the unit as dispatched, we welcome the RAs' reduction of the costs allocated to Pumped Storage Units but we would ask that the suggested sum be further interrogated for any further reductions, and that the principle of modelling the units to closely match their dispatch is used across all units. The almost two years of data available since new SEM go-live should assist in this regard.

BGE appreciates that a number of additional risks are projected in the coming tariff year, but we request that funds allocated to them in the model are based on a calculated consideration of the likelihood and impact they may have as opposed to a set contingent value. Using contingent values can risk unnecessary increases to the proposed Imperfections Charge and increases to the K-factor in coming years.

Finally, we support for this year, the RAs' proposal to fully apply the K-factor amendment resulting in a slight reduction in the forecast. We ask however that considerations and views on the expected K-factor trend in the next 3 years are provided to understand their predictability and the actions that may be taken to reduce the scale and volatility of the annual K-factor value.

I hope you find the above comments and suggestions helpful. If you have any queries thereon please do not hesitate to contact me.

Yours sincerely,

Ian Mullins
Regulatory Affairs – Commercial
Bord Gáis Energy

{By email}

¹⁰ Section 2.1