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28 July 2023

RE: SEM-23-049 Consultation Paper on Imperfections Charge October 2023 – September 2024 (the “Consultation”)

Dear Gavin, Mary,

Bord Gáis Energy (“**BGE**”) welcomes the opportunity to respond to this consultation on the Imperfections Charge proposed for the tariff year 2023/24.

1 Overview of BGE response

BGE welcomes the significant forecast reduction in the Imperfections charge for 2023/24 which is mostly due to the impact of decreasing fuel prices since February 2023, as outlined in the consultation. While this will go some way to alleviate the impact of Imperfections on consumers over 2023/24, BGE is concerned that the benefit of the decrease in fuel costs is undermined by the continued underlying issues related to Imperfections, namely worsening constraints on the system. Suppliers need to be in a position whereby they can forecast, with some certainty, the extent of Imperfections costs that will be imposed from year to year. This would allow suppliers to better predict the impact of Imperfections costs on consumer bills, and thus reduce the volatility of consumer bills. The effective application of the PR5 Framework is critical to reducing constraints, thus reducing the year-on-year swings we are currently seeing in Imperfections costs. In line with its PR5 incentive, we must see the TSO make appropriate grid project decisions which are conducive to our net-zero targets, such that the right investments/projects are made at the right time with the consumer benefit and impact in mind. There are far-reaching changes required on the transmission grid in the next 7 years to achieve the 2030 targets, and beyond 2030 to achieve net-zero, at optimum cost to consumers. Unless the required grid changes and project needs are delivered in a timely manner, we will miss delivering the 2030 targets.

We are concerned that EirGrid has not taken on board many of our previous substantiated views regarding:

- i. The continuing contribution of Total Constraints Costs to Dispatch Balancing Costs (“DBC’s”) undermines the benefit of the significant reduction in fuel prices seen during the 2022/23 Tariff Year¹. These constraints add to the unpredictability of Imperfections costs from year to year. Whereas system improvements should decrease DBCs over time and flatten to an extent the volatility of the Imperfections cost. Detailed in Section 2.
- ii. The lack of transparency into how Imperfections revenues have been used and what constraints have been solved or are in the process of being resolved. Given the current level of volatility in Imperfections costs and K-factors, stakeholders must be given sufficient insight whether the consumers are going to eventually get value for their money i.e., whether the TSO/TAO is making the right investment decisions for the grid with a view to decreasing future consumer costs. As outlined in our concluding paragraph, BGE has made some of these

¹ The fuel price forecasts for 2023/24 are €126m lower than those for 2022/23 (see Consultation Paper, Table 4)

assertions on several occasions previously and we now believe that it is time to consider a more realistic approach to dampen the impact of these risks and the level of volatility that they impose on consumer bills. BGE would welcome a call to discuss our views on alternative approaches that could be taken to manage Imperfections costs in the best interest of the consumer. Detailed in Section 2 and Conclusion.

- iii. The accuracy and transparency of the TSO's forecasting model which underlies the determination of the annual Imperfections Charge. The accuracy of this model is not only critical from a consumer cost mitigation perspective but also in determining a predictable level of Transmission Loss Adjustment Factors ("TLAFs") and Generator Transmission Use of System charges ("GTUoS) for the following year to enable generators budget for such costs. In particular, the TSO must treat interconnected markets equally to the SEM in its modelling processes and ensure that the data underlying the Imperfections model assumptions is made available to stakeholders. Detailed in Sections 3 and Section 4.

2 Fuel price decreases are undermined by the continued contribution of constraints to DBCs

2.1 The TSO must focus on constraints to manage future Imperfection cost levels and volatility

Imperfections costs are driven mainly by DBCs which are mostly made up of constraints costs which are heavily influenced by fuel prices. We welcome that decreased fuel prices have decreased forecasted Imperfections for 2023/24. However, the significant reduction in fuel prices over 2022/23 have been undermined by the continued and worsening contribution of constraints to DBCs which represent the majority of the Imperfections Charge. We also welcome the fact that this year's K-factor adjustment reduces the forecast Imperfections Charge for the coming tariff year, however, more detail is needed on the cause for the €91.17m expenditure over-recovery to allow stakeholders to distinguish between the impact of fuel prices and the impact of constraints on Imperfections costs. BGE asks that the TSO outline how much of this recovery is a result of decreased fuel costs and how much of the recovery is a result of actions taken by the TSO to relieve constraints.

It is imperative that the TSO makes grid investment decisions and undertakes actions that relieve constraints to see enduring predictable lower Imperfections costs over the coming years. This must be done if we are to achieve 2030 and net-zero targets at an optimum cost to consumers. Given the deteriorating nature of the grid, the longer EirGrid delay in addressing constraints issues (i) the more investment will be required to fix constraints and (ii) the more the cost of constraints will continue to impact DBCs and increase Imperfections costs to the detriment of the consumer.

We outlined in our response to the Consultation on Constraint and Imperfections² a full set of consequences of the TSO's lack of effective progression to solve constraints on the system, which includes:

- i. directly increasing consumer bills through the growth in DBC-related Imperfections Charge,
- i. preventing the export of additional MWs from the Cork and Wexford regions, and
- ii. acting as a barrier to competitiveness.

Fixing constraints will lead to more efficient markets, lower consumer costs, improved security of supply and more competition. Regional constraints in Cork are of particular concern to BGE as they prevent the export of additional MWs from the Cork region. Taking the BGE Whitegate CCGT unit at Glanagow in Cork as an example, between 2019 and 2022 we have seen a 13% increase in the number of balancing market actions affecting our output³. The potential value to the Irish consumer of the additional MWs being brought by the connection of the Celtic Interconnector in the Cork region will be

² Submitted on 27 March 2023

³ This is due to the S_MWR_ROI constraint binding (*Imperfections & Constraints Incentive*) which reflects the deteriorating nature of the grid at a time when intuitively substantial investment in this grid should be occurring

significantly undermined if the network constraints in the Cork region are not mitigated ahead of Celtic's connection in 2026/27⁴.

As recently as September 2022 for example, the CRU outlined how the grid is not developing fast enough to manage the required transition over the next 5-8 years which is at least partially due to the TSO's failure to deliver investments.⁵ Unless constraints are addressed urgently to facilitate increasing levels of renewable generation and interconnection, we will miss delivering our 2030 targets. Missing the 2030 targets will undermine renewable investment decisions and the decarbonisation agenda, and ultimately will have cost implications for consumers⁶.

2.2 The TSO needs to provide more transparency on constraints

Given the increase in the Imperfections price from €5.22/MWh in 2018/19 to a forecasted €13.40/MWh for 2023/34, and despite recent volatility in the commodities market, we would by now have expected that planned projects on the grid would deliver improvements that would ease ongoing constraints that are impacting units, including BGE's Whitegate unit in Cork. However, there has been a continued lack of detail on the constraints addressed. Coupled with the increasing level of DBCs, this demonstrates that the TSO failing to construct necessary infrastructure to relieve network constraints as required in line with regulatory arrangements and the Climate Action Plan 2023 ("CAP 2023")⁷. We 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 Imperfections costs and K-factor trends 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.

Higher transparency around the drivers and mitigation actions for these Imperfection costs is required. We ask the TSO to clearly demonstrate to participants the work they are doing to remove existing constraints from the grid, and the effectiveness this work is having in reducing future Imperfections Charge tariffs for consumers⁸. EirGrid's constraint abatement plan should also have a forward-looking aspect to include any expected increase in constraints to the grid from large project connections⁹ and the forecast growth in wind generation (both offshore and onshore) to meet the 2030 targets, as well as the grid works needed to accommodate these projects. These forward views on expected constraints must feed into the forward-looking forecasting of Imperfections Charges as BGE has suggested above.

Looking to the future, BGE feels strongly about the level of transparency provided to market participants regarding 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 values. 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.

⁴ We see similar concerns for the connection of the Greenlink Interconnector in the Wexford area, and impacts to its delivery of value for the consumer due to network constraints.

⁵ CRU noted that "EirGrid reported that a significant portion (28%) of its PR5 plan [for Investment Planning & Delivery] is behind schedule" in Year 1 of the PR5 period". CRU2022090 Electricity Transmission Network Allowed Revenues for 2023 And Demand Transmission Use of System (D-TUoS) Tariffs 2022/23 (Section 8. Investment Planning and Delivery – pg 24)

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⁶ Consumers have already been facing growing dispatch balancing costs year on year from 2017/18 to 2021/22 whereby more than a 190% increase has been seen.

⁷ Climate Action Plan, page 139

⁸ SEM-22-049 (pg2) – "For 2023/24, and similar to recent Tariff Years, Imperfections Costs are mostly due to Constraints." This is aside from the recent volatility seen in fuel prices since the invasion of Ukraine, with has recently driven Imperfections charges.

⁹ such as the Greenlink and Celtic interconnectors

2.3 BGE's suggested approach to relieving constraints if 2030 and net zero targets are to be achieved

BGE asks that the TSO take on board our suggestions in our response to its consultation on TSO Imperfections & Constraints Multi-year Plan 2023-2027¹⁰ to produce an actual year-on-year reduction in the amount of the constraint costs/ dispatch balancing costs within the Imperfections Charge. In summary, our ask is that the TSO clearly outline:

- iii. the causes and costs of constraints in place for longer than 12 months,
- iv. options considered to remove the constraint (market based/infrastructure based/ operational based) measures, and
- v. the TSO's plan to remove/ not remove the constraint.

We understand that the TSOs have undertaken discussions with the CRU on the matter, but we request an update on this and how the requirements under the Constraints and Imperfections incentive are going to be executed within the PR5 period. We also propose that a 3-year forecast of Imperfections Charge levels is introduced to give stakeholders a forward view of expected tariffs and the impact the expected K-factor recovery in each year may have. For constraint planning and mitigation in the immediate term, we need:

- i. a single joined-up, strategic plan across the TSO projects to resolve existing and forecast grid issues including constraints¹¹. This should prioritise projects and be extremely clear on the problem(s) it will solve and the benefits of resolving the problem(s) from a consumer/ competition/ other perspective e.g., an expanded and forward-looking Transmission Development Plan (TDP) that is inclusive of all planned and projected network developmental changes up to 2030, and
- ii. more transparency on the baseline position that exists before a project is implemented such that impacts from projects and /or actions taken to alleviate impacts on grid and market operation/ development are very clear to all stakeholders.

These tasks in our view must necessarily be undertaken imminently in 2023 if consumer and competition harm is to be mitigated. These tasks are also necessary to maintain a degree of hope that we can meet the 2030 targets to set us on the right trajectory for the longer-term net-zero targets by 2050. Finally, given the cost impacts that system constraints have on the proposed and actual Imperfections Charge, we urge the RAs and the TSOs to expedite the delivery of the projects that are expected to remove and alleviate constraints and so minimise the extent of these costs insofar as possible.

2.4 BGE's suggested approach for reducing the impact of Imperfections Charge, and K-factor volatility on consumer bills

We ask that the over-recovery in the Imperfections Charge for 2023/24 (compared to 2022/23) is distributed across a 3-year period to manage the significant swings in the Imperfections Charge due to commodity price volatility. This, in our view, will smooth out the significant impact of Imperfections charge and K-factor volatility on consumers bills in any one year, and allow a more manageable impact in future years where the impact to the tariff rate should be mitigated to an extent by increasing demand levels.

It is evident that commodity price volatility is also distorting the level of within year K-factor correction required by the TSO given the substantial (-€231.53m) swing in the proposed level from 2022/23 to 2023/24. We recognise these deferred recovery requests may introduce a cost-recovery delay in any given tariff year for the TSO, but we believe that any cash-flow risk introduced to the TSO operations

¹⁰ Submitted on 27th March 2023

¹¹ As set out in the Electricity Networks Stakeholder Engagement Evaluation (NSEE) Panel Close-out Report 2021 (CRU/202315) – Section 3.6. BGE also called this point out in our submission on the TSO PR5 Strategic Objectives Multi-Year Plan 2022-2026 (dated 10th December 2021).

by the changes proposed must be borne by the TSO in the short-term (e.g., 12-18 months) without impacting Market Participants. This is on the understanding that the TSO will be returned to a cash neutral position in the longer period (e.g., 3 years). We ask that all efforts are made to reduce consumers being exposed to significant swings in K-factors caused by unpredictable commodity prices. In our view, the 3-year recovery of the K-factor and 3-year recovery of cost increases should work together with our proposed 3-year forecast on Imperfection Charges to give a forward view on the level of costs and tariffs expected.

3 Modelling Assumptions and Data sets

BGE acknowledges the scale of the task, and the efforts of the TSOs, to forecast the annual Imperfections Charge. 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. Given that fuel prices have decreased since February 2023, BGE welcomes that the TSO has taken fuel price data from May 2023, as opposed to March 2023 when most of the input data was frozen for PLEXOS. This has led to a relative decrease in Imperfections costs and has increased the accuracy of the model. We also welcome the introduction of an Imperfections Mid-Year Review which provided an advanced more accurate picture of the expected significant changes in Imperfections costs and associated K-factor for 2023/24.¹² We also agree that (i) the Charge Factor should be set to 1 to allow the full recovery of Imperfections costs in 2023/24, and (ii) hourly generation schedules are examined using one schedule to represent the dispatch quantities and another schedule to represent the market schedule quantities.

3.1 Backcast Volatility

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. This is evident in the difference between Forecasted and Outturn values since 2019/20 as outlined in Table 1 below:

Tariff Year	Forecast (€m)	Outturn (€m)	Difference (€m)
2019/20	235	212	-23
2020/21	266	214	-51
2021/22	291	384	+92.48

Table 1 - Forecasted and Outturn values since 2019/20

While we appreciate the significant factors that affect Outturn results such as Covid-19 and the invasion of Ukraine, we believe that the points we raise below, particularly regarding interconnector modelling, offer opportunities for improvements to the TSO forecast model for the Imperfections Charge. These improvements will not only improve the accuracy of system cost forecasts, but also benefit consumers with Imperfections charges that are more reflective of the expected system costs and that are less volatile.

3.2 Demand, Interconnector Flows & Wind Availability

BGE has significant reservations about the effectiveness of interconnector modelling for Imperfections and has consistently raised these issues in previous responses. We do not believe that this modelling approach is reasonable however, we assume that given the imminent arrival of the Greenlink Interconnector, this will force the necessary changes to improve the TSO’s approach to interconnector modelling. It will not be acceptable to add the new Greenlink into the current approach as:

- i. there will be no historic flow data available for Greenlink

¹² [2223-Imperfections-Mid-Year-Report-v3.0.pdf \(soni.ltd.uk\)](#)

- ii. there are significant changes occurring in both SEM and BETTA making it inappropriate to assume that price dynamics will be the same from year to year i.e., the correlation of prices between SEM and BETTA are not reflective of the installed levels of renewables in these markets, and we expect this to be exacerbated by the introduction of Greenlink.

Using flows derived from a single year to forecast interconnector flows is, in our view, inappropriate. We question whether the capacity factors of wind and solar in 2021/22 are representative of an average expected capacity factor? It is also inappropriate to assume that demand and wind are the only factors affecting SEM and BETTA prices and interconnector flows. For example, the accuracy of the interconnector modelling, including for the purposes of modelling Imperfections, could be improved by taking outages in both markets into account as a significant outage can be a major factor into the direction of the flow, and it would be inappropriate to assume that the same outages occur from year to year.

The TSO must prioritise improving the accuracy of the Imperfections model by treating interconnected markets equally to the SEM in its modelling processes. It is concerning that this (between demand, ICs and RES) has not considered geographic coupling of NI and Scotland as it is reasonable to assume that high wind conditions in one location will coincide with the same or similar conditions in the other. Furthermore, as more onshore and offshore wind generation is developed, the accuracy of modelling conditions in interconnected markets will be crucial to (i) improve the extent to which the Imperfections model reflects reality, and (ii) reduce the number of energy-actions taken by the TSO and therefore reduce Imperfections costs. We agree with the TSO's statement in the consultation paper that "*The model indicates that increased levels of renewable generation increase imperfections costs*".¹³

While the current approach to interconnector modelling may suffice in the short term, BGE urges EirGrid to implement a more dynamic approach to modelling the interaction of the SEM with other markets through interconnectors. This must be implemented as soon as possible (before 2024) or at least before Greenlink is commissioned to represent market interactions more accurately. The possible changes resulting from the Greenlink and Celtic interconnector coming online demonstrate the need to develop more proportionate modelling of the flows expected. We believe now is the time to change the approach to modelling interconnected markets, given the additional interconnection expected to become operational / linked with SEM over the coming decade.

3.3 Generation resources and Priority Dispatch Generation

BGE note that Generation resources and Priority dispatch are based on the All-Island Generation Capacity 2023-32 which has not yet been published and therefore, this data is not yet available to stakeholders. BGE requests that EirGrid improve the transparency of this assumption by either (i) publishing the most up to date values available to EirGrid or (ii) publishing the values that these assumptions were based off.

3.4 Zero-carbon Reserves

Reserve requirements feed into the PLEXOS model used to determine Imperfections and the cost of providing reserves from traditional sources of generation can be exacerbated by increased fuel prices. It is important to note that the Climate Action Plan 2023 ("CAP 2023") requires EirGrid and CRU to accelerate the development of Future Arrangements System Services for zero carbon system services. This will ensure that (i) reserve requirements are fully provided by zero-carbon technology by the end of 2023 and (ii) procurement of reserve services from carbon sources phased out by end-2027¹⁴. This challenge is highlighted in CAP 2023 which states that "EirGrid will monitor and reduce emissions resulting from its non-market actions, procuring appropriate system services, and constructing necessary infrastructure to relieve network constraints as required in line with regulatory arrangements".

¹³ [SEM-23-049 Annex 1](#) Page 17

¹⁴ Climate Action Plan 2023, page 139

BGE requests the TSO's view on if the procurement of zero-carbon sources of reserves will impact the Imperfections price from 2023/24 onwards. Our proposed 3-year forecast of Imperfections Charge levels should be introduced to give stakeholders a forward view of expected tariffs and the expected K-factor recovery in each year. We would expect that by 2027 we will see decreased and less volatile imperfections cost given (i) that reserves will be entirely provided by zero-carbon technologies and (ii) the absence of traditional sources of reserves will significantly reduce the correlation between fuel prices and Imperfections costs, and thus the volatility of the Imperfections charge.

3.5 Carbon Price Data

BGE queries why the forecast carbon prices for 2023/24 are based on the long-term fuel forecasts from Thomson-Reuters Eikon and the US Energy Information Administration, while the carbon prices for 2022/23 were based on European Union Allowances (EUAs) for carbon under the EU Emissions Trading Scheme (EU-ETS) which are taken from ICE EUA Carbon Futures index? BGE is also concerned that the carbon price has decreased by 7% at a time when we should instead be building strong carbon signals into the market.

4 Imperfections modelling has knock-on effects for the determination of GTUoS and TLAFs

BGE is concerned that the accuracy of the TSO's forecasting model, which underlies the determination of the TLAFs and GTUoS for the following year, is worsening the already ineffective TLAFs and GTUoS processes. We share EirGrid's view as outlined in both Shaping Our Electricity Future 1.0 and Shaping Our Electricity Future 1.1¹⁵ that "*The transition to lower emissions, and the expected engineering challenges of increased congestion and constraints on the power system and demand increases, suggests that the methodology and required outcomes from the application of GTUoS and TLAFs may need to be reassessed*". The TLAFs and GTUoS processes have also been subject to a lack of transparency and increased volatility in recent years, which in our view, has been worsened by the shortcomings of the Imperfection model which we understand is the same model used to determine TLAFs and GTUoS. We therefore ask that the TSO considers this response in tandem with our responses to the recent SEMC consultations on GTUoS and TLAFs, and to address our asks in those responses. In particular, we urge the TSO to consider our asks within this response which will improve the accuracy of the Imperfections model which determines TLAFs and GTUoS, namely, particularly with regards to interconnector modelling.

5 Conclusion

BGE appreciates the challenge of providing an accurate forecast for Imperfections Charges given the projected risks over the coming year, particularly the volatility in the commodities market and the uncertainty in the system services market. While we recognise that the TSO has attributed the significant positive K-factor to decreased fuel costs which have decreased DBCs, it remains evident that the TSO must do more to alleviate constraints. Given the fast-approaching climate targets and the deterioration of the grid which will drive costs to fix constraints, it is now crucial that the TSO takes immediate measures to alleviate constraints if we are to have any hope of meeting our 2030 and net-zero targets at an optimum cost to consumers. It is also imperative that the TSO takes immediate measures to reduce, insofar as possible, the volatility of Imperfections charges from year to year to minimise the impact of Imperfections costs on consumer bills. To reduce the impact of volatile imperfections on consumer bills, BGE requests that the TSO takes the following actions:

- i. Introduce a 3-year recovery of the K-factor and a 3-year recovery of Imperfections cost increases to work together with a 3-year forecast of Imperfection Charges to give a forward view on the level of costs and tariffs expected.

¹⁵ [Shaping our Electricity Future \(eirgridgroup.com\)](https://eirgridgroup.com)

- ii. Provide more information on the drivers of the forecast K-factor, what the TSO is doing to alleviate constraints and the volatility the TSO expects to see in Imperfections costs over the coming years.
- iii. Update stakeholder on how the requirements under the Constraints and Imperfections incentive are going to be executed within the PR5 period,
- iv. Provide a single joined-up, strategic plan across the TSO projects to resolve existing and forecast grid issues including constraints and more transparency on the baseline position that exists before a project is implemented to alleviate constraints.
- v. Prioritise improving the accuracy of the Imperfections model Imperfections model which must not only be optimum for Imperfections calculations, but also for TLAFs and GTUOS. In particular, the TSO must treat interconnected markets equally to the SEM in its modelling processes.

These actions should be taken as soon as possible to minimise the volatility of Imperfections costs which will become increasingly significant with greater interconnectivity and levels of renewable generation expected to come onto the system. The longer the TSO delays in implementing an accurate Imperfection model, the more volatility will be seen in consumer bills.

I hope you find the above comments and suggestions helpful. BGE recognise that the above response is similar to those we have submitted in previous years. This demonstrates the need for us as an industry to consider alternative approaches to managing Imperfections costs, especially given the increasing level of interconnection, renewables and constraints we expect to see on the system. We recognise that the TSO and RAs have limited control over several factors that feed into Imperfections costs, notably fuel prices. However, it is suppliers and consumers who are bearing the burden of the risk resulting from these highly volatile factors. **We therefore believe there is significant merit for us to consider a more realistic approach to dampen the impact of these risks and the level of volatility that they impose on consumer bills. BGE would welcome a call to discuss our views on alternative approaches that could be taken to manage Imperfections costs in the best interest of the consumer.**

Yours sincerely,

Niamh Trant
Regulatory Affairs – Commercial
Bord Gáis Energy
{By email}