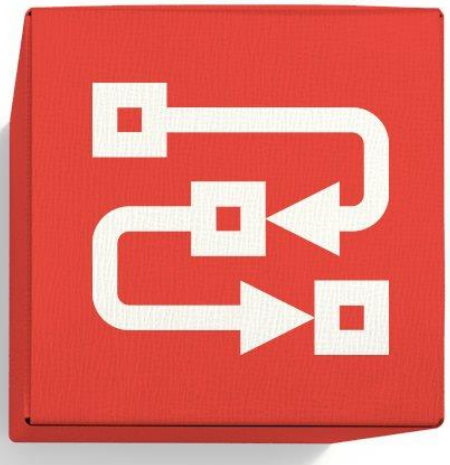
Proposed change to Existing Arrangements for Accessing Licence Baseline Exit Capacity on the National Transmission System at Bacton Interconnection Point

Interconnector UK

10 February 2020



FINAL REPORT

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EXECUTIVE SUMMARY

Interconnector UK Ltd (IUK) has commissioned CEPA to provide an independent review and our economic perspectives on the options and analysis outlined in Ofgem's consultation and accompanying Impact Assessment (IA) regarding the proposed changes to the current arrangement for access to National Transmission System (NTS) Licence Baseline Exit Capacity from the Bacton Interconnection Point (IP). This report sets out our conclusions.

Background and context

The GB gas market is physically connected to the continent via two bidirectional gas interconnectors that connect to the NTS at the Bacton gas terminal: Bacton (IUK) (GB-Belgium) and Bacton (BBL) (GB-Netherland).

At present, National Grid Gas (NGG) is obliged to offer 651.68 GWh/day of Obligated Exit Capacity at the NTS Bacton (IUK) Exit point. The current arrangements in NGG's Licence stipulate that the Obligated Exit Capacity for NTS Bacton (BBL) Exit is set at 0 GWh/day. These arrangements reflect that IUK has for a number of years had the physical capability to import and export gas between GB and Belgium, and firm user commitments were necessary at Bacton to realise the investment. In contrast, *historically* BBL was physically unidirectional, flowing gas only from the Netherlands to GB, although "virtual reverse flow" could be accommodated by netting off.

In September 2019, BBL Company (BBLC) completed a project that allows the BBL pipeline to physically flow gas from the NTS Bacton (BBL) Exit to the Netherlands. BBL's physical export capability of ~170 GWh/day is about a quarter of the current Obligated Exit Capacity allocated to the separate NTS Bacton (IUK) exit point. Neither BBLC nor NTS Bacton (BBL) users have formally requested additional capacity at these points. Shippers wishing to export via BBL are consequently able to access only interruptible and non-obligated NTS exit capacity, in accordance with National Grid's capacity release methodology.

Ofgem is consulting on changes to the existing arrangements for Bacton exit capacity and has produced an IA to assess the costs, risks and benefits of two options for changing the status quo. Ofgem concludes that, in its view, there is a "clear competition benefit" to changing current arrangements, and believes that aggregating capacity at the Bacton exit point would be the "fairest and most competitive" way of reallocating the existing capacity. This would involve using market-based solutions, such as auctions, to allocate the existing baseline capacity at an aggregated NTS Bacton exit point between IUK and BBL. It would treat the baseline capacity at Bacton as "competing capacity" which it argues can facilitate the wider competition benefits which the IA outlines.

Our findings

Ofgem's draft IA does not, in our view, provide sufficient economic justification to adopt any of Ofgem's proposed policy options, compared to the status quo ('do nothing' option). In particular, we find that:

- There are **inconsistencies and, therefore, risks of misleading conclusions being drawn from the Ofgem IA** based on the counterfactual used as the comparison to the policy options.

  For example, Ofgem identifies benefits from increased trading opportunities, liquidity and the attraction of new LNG supplies from changing the status quo. In particular, in facilitating greater access to TTF. But a high degree of price alignment already exists in North West Europe. This would imply that shippers already have sufficient access to the most liquid hubs like TTF, and the benefits are small.

  Other factors – such as global gas market conditions – may have a considerably greater impact on factors such as attracting LNG supplies to the UK. These equally apply to the counterfactual and policy option scenarios, and may reduce, or at least increase the uncertainty of, the potential benefits of reforming the NTS exit capacity arrangements at Bacton relative to a counterfactual.

- The IA's cost benefit analysis (CBA) is mainly based on **qualitative assumptions** rather than quantified evidence of the socio-economic benefits of the policy options.

For example, Ofgem assumes that making additional firm capacity at Bacton IP available to BBL will increase interconnectivity and open up new trading possibilities for shippers. It also assumes that, if BBL could not provide increased access for LNG deliveries, LNG might go to import terminals on the continent.

Evidence to substantiate these fundamental assumptions, used as the basis for justifying the reallocation of capacity rights at the IP, is not provided in the IA.

- A weakness of the IA is the **absence of structured quantified socio-economic analysis** of the impacts on all stakeholder groups affected by each option.

  In particular, there is limited discussion of the impacts on Belgian consumers and industry, the balance of producer and consumer surplus impacts from the proposed reform options relative to the status quo, and, in particular, the impacts on IUK (see below).

- When evaluating impacts that the proposed policy options may have on the two interconnectors, Ofgem use an **inappropriate measure of interconnector value**.

  Ofgem's analysis focuses on the utilisation of the interconnectors, in particular IUK, rather than demand for bookings, which we would suggest is a far better measure of the opportunity costs and value of interconnector capacity to be used when needed (see discussion below).

Related to the above, our review has identified four key points that we consider require particular consideration by Ofgem in finalising its IA, and reaching a final decision on the exit arrangements at Bacton IP.

First, we believe that Ofgem's IA places too much emphasis on the potential – unsubstantiated – short-term benefits for competition of reallocating baseline capacity at Bacton. This is at the expense of potential detrimental long-term impacts that its proposed policy may have on incentives for investment and, therefore, dynamic competition, within the gas sector and the energy system more generally:

- The NTS Bacton (IUK) exit point has been designated as Obligated Exit Capacity.
- This regulatory rule is economically valuable to IUK, because it enables it to obtain valuable firm bookings of its own capacity to shippers, which would be reduced if the designation were changed.
- This can be interpreted as an economic right, even if it has limitations which make it fall short of full economic ownership, as of land or plant.
- The allocation of NTS Bacton (IUK) exit capacity is matched to IUK's physical export capacity – IUK's infrastructure was built and is maintained on the basis of its ability to match its own physical capacity to that available at Bacton IP.

Changing the allocation of capacity despite the regulatory rules potentially results in a loss of earning capacity without full compensation. This can be argued to be an expropriation, and inconsistent with equity. This potentially sets a concerning precedent that economic rights, once established, may not be respected without compensation.

The current system of NTS exit capacity, both in its inception, design, and language, creates a clear expectation among the owners of facilities connected to Obligated Exit Capacity that it will continue to be so designated as long as it is required. So long as the rights are maintained with sufficient commitment to their future usage, the expectation is that the right will be retained. This is desirable to provide a sufficiently stable environment to secure investment in new transmission-connected facilities, including interconnectors, that rely on being able to continue to access the NTS exit and NTS entry capacity on stable terms to justify their investments.

If such regulatory rules creating economic rights are not respected in the longer term, this increases regulatory risk, creates the potential for stranded assets, potentially increases the cost of capital and reduces the incentives for investment. This applies not only to IUK, but potentially to other infrastructure owners and developers within the energy sector that may rely on economic rights established through a stable regulatory framework, as opposed to legal right by contract. The energy sector:

- Is characterised by high upfront infrastructure costs with long-lived economic asset lives and periods over which investors earn their expected returns from investment.
- These investments often rely on associated economic and/or legal rights to use associated infrastructure set in regulatory rules, such as the NTS in the case of IUK.

Second, Ofgem has suggested the value of the NTS Bacton (IUK) exit point as obligated is of low value to IUK, at least for the tranche that it is proposing to transfer. It observes relatively low average load factor. But even though the average load factor may be low, the value of having this Obligated Exit Capacity does in fact provide a value to shippers, and is valuable to IUK in matching its available capacity.

IUK's customers book capacity because many of them have substantial financial interest in being able to serve across a wide range of conditions, including conditions that do not occur in most years, such as unusually cold episodes, or disruptions of alternative supplies. They can book capacity and rely on it being available when they need it, precisely because Obligated Exit Capacity provides a firm right. In practice, in most years NTS capacity is often available in the short term. Given that short-term NTS capacity has typically been heavily discounted compared to longer term products, this is often an attractive way to acquire NTS capacity.

The same observation that IUK's average usage is relatively low could equally justify an observation that interruptible usage should satisfy BBL's NTS users, as at a high proportion of the time they will be able to ship. BBL seeks to be designated so it can enjoy an increased return from being able to offer firm capacity to shippers. This should have been clarified before it made its commercial investment.

IUK benefits from being able to offer firm capacity to its shippers. When the financial terms an investment relies upon are removed, a financial loss could well be experienced by investors, relative to the market's prior expectation. This is especially true for an asset with high fixed costs. More broadly, as discussed above, for new or recent investments it might produce a reduction in confidence that such rights will be respected, if there is a precedent that they can be reassigned by administrative or other non-market-based means.

Third, Ofgem's IA does not consider how the establishment of competing auctions at an aggregated Bacton exit point may introduce extra uncertainty to shippers: the total amount of NTS exit capacity available on either IUK or BBL will only be confirmed following each auction, and it may not match the entry capacity to the adjacent TSO system the shippers may be able to obtain at the other end of the interconnector. The risk of such capacity mismatch may discourage some shippers from bidding for such capacity in the first place. This may be inefficient if it prevents efficient trades (e.g. profitable arbitrage) from taking place. It may also limit the scope for future bundling of entry-exit capacity that could mitigate the risk associated with capacity mismatch.

The impact these factors may have on competition, liquidity, security of supply etc., is not considered in Ofgem's IA, and may detract from the "clear competition benefits" Ofgem states will result from its options for reforming the existing obligated NTS exit capacity arrangements at Bacton.

Fourth, as we set out in the main report, the purpose of an IA and CBA is to identify the option(s) that best achieve the objectives, where 'best' is typically measured by the greatest net social benefit. This requires consideration of all possible options, given the stated objectives. Although Ofgem has set out two options (i.e. changes to the status quo) in its consultation, we consider there are other options it could, and should, consider.[2]

As part of the scope of this report, we have not evaluated the costs and benefits of those alternative options. However, it would seem that these options need at least to be considered by Ofgem in finalising its IA, before concluding on its appropriate regulatory policy. This is particularly the case, given the issues that we have identified with the current options under consideration (as discussed above).

[2] We discuss these options briefly in the main report informed by IUK's own response to Ofgem's consultation.

Conclusions

We appreciate the challenges in undertaking an IA and comprehensive socio-economic CBA to reflect the issues we have identified above. However, in its current form, we do not consider Ofgem's IA provides a sufficient evidence base to justify its proposed changes to the existing exit arrangements at Bacton IP. The economic issues and impacts require considerably more analysis before a preferred policy direction is identified.

We note that the issues identified above, highlight why any reallocation of exit capacity at Bacton IP should be triggered by a market-based signal, as opposed to an administered reallocation of capacity rights – an IA cannot easily reflect the various costs and benefits that market participants and infrastructure providers would need to internalise to drive an efficient allocation of capacity, and provide an equitable allocation of capacity rights, and the value associated with those rights, at the NTS Bacton IP.

1. INTRODUCTION

This report was commissioned by Interconnector UK Ltd (IUK) in response to Ofgem's consultation dated 9th December 2019 regarding the proposed changes to the current arrangement for access to baseline exit capacity from the Bacton Interconnection Point (IP).[3]

1.1. CONTEXT

The GB National Transmission System (NTS) is physically connected to continental Europe through two gas interconnectors that both 'join' at the complex of terminals at Bacton. The GB gas market is also connected to continental markets via interconnectors from Norway and a number of LNG terminals.

The IUK interconnector between Bacton and Belgium (via the Zeebrugge IP) was completed in 1998 and has the capability to flow gas both ways. The Balgzand-Bacton Line (BBL) interconnector travels between Bacton and the Netherlands, and was completed in 2006. BBL was built with the ability only to physically import gas into the GB gas market, but has been conducting 'virtual' reverse flow operations for a number of years by netting off.

In 2017 National Grid Gas (NGG) and BBL Company (BBLC) jointly undertook a market demand assessment for additional capacity at the NTS Bacton (BBL) exit IP. There was no market signal for additional capacity, resulting in no further investment action taken by NGG. BBLC nevertheless took an investment decision on its side to become physically bi-directional at its own commercial risk. In 2019, BBL became capable of physically exporting gas to the continent. Shippers wishing to export via BBL are able to access interruptible and non-obligated NTS exit capacity consistent with the NGG's current arrangements.

The technical entry capacity of the IUK interconnector is 651.68 GWh/day, which fully matches the exit capacity on NGG side of the Bacton terminal. Similarly, this is matched by IUK's exit capacity on the Belgian side and the entry capacity of the Zeebrugge terminal. With the introduction of physical reverse flow, the BBL interconnector has around 170 GWh/day of export capacity, or roughly a quarter of the NTS exit capacity currently available at the NTS Bacton (IUK) exit point.

Existing arrangements

The NGG licence sets out the 651.68 GWh/day Obligated Exit Capacity at the NTS Bacton (IUK) exit point, made up of 623.58 GWh/day of Licence Baseline Exit Capacity and 28.10 GWh/day of Legacy TO Exit Capacity.[4]

While BBL is now capable of physically flowing gas towards the continent, this was not the case when exit capacity was specified in NGG's Transporter Licence. Therefore, the Baseline Exit Capacity at the NTS Bacton (BBL) exit point was set at 0 GWh/day.

NGG has received no formal application for additional capacity above this Baseline value for this exit point. NGG can, however, offer a number of capacity products to shippers at the Bacton (BBL) IP including:

- interruptible exit capacity, which can be curtailed without compensation, if required; and
- non-obligated exit capacity, which – although a 'firm' product – will only be offered when NGG determine the network has sufficient capability to provide it.

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[3] https://www.ofgem.gov.uk/publications-and-updates/initial-impact-assessment-and-minded-position-arrangements-accessing-licence-baseline-exit-capacity-bacton-interconnection-point

[4] Ofgem's Impact Assessment mentions only the 623.58 GWh/day, but we understand IUK is clear that all of the 651.68 GWh/day is now Obligated Exit Capacity and is in fact the technical capacity of the connection indicated by NGG.

Ofgem's proposed changes

Ofgem's consultation paper and associated draft Impact Assessment (IA) considers three possible options for exit capacity arrangements at Bacton IP:

- **Option 1: 'Do Nothing'**. Remain in the 'business as usual' baseline scenario of the existing arrangements.
- **Option 2: 'Aggregation'**. The two NTS exit points, Bacton (IUK) and Bacton (BBL), would be combined into one (hypothetical) exit point "to allow competitive access". This would result in a situation of 'competing capacity' – while the full 651.68 GWh/day of Baseline Exit Capacity would remain available to exit the NTS, the mismatch of technical capacity on the interconnectors side means both interconnectors would not be able to export gas up to the maximum technical capacity at the same time.
- **Option 3: 'Reallocation'**. Some of the existing Baseline Exit Capacity at the NTS Bacton (IUK) exit point, up to the current c.170 GWh/day physical reverse flow capability would be reallocated to Bacton (BBL).

Ofgem's current preferred option is Option 2.

1.2. REPORT CONTENT AND STRUCTURE

This short report focuses on the economic theory and issues underlying the changes discussed in Ofgem's consultation. Other aspects, such as detailed discussion of the legal obligations derived from the EU Network Code on Capacity Allocation Mechanisms (CAM NC), are considered out of scope of this report.

The remainder of the document is structured as follows:

- Section 2 assesses the arguments put forward in Ofgem's consultation and IA and offers examples of areas where the analysis does not appear sufficiently robust;
- Section 3 discusses how an economically efficient and equitable outcome can be arrived at when firm capacity is treated as an economic right;
- Section 4 considers the risks associated with the competing capacity required under Ofgem's proposed changes; and
- Section 5 sets out possible alternative approaches that may result in a preferable outcome for all parties, compared to both current arrangements and Ofgem's current proposed option.

2. EVALUATING OFGEM'S IMPACT ASSESSMENT

2.1. OFGEM'S HIGH-LEVEL ARGUMENT

At a high level, Ofgem argues that current exit capacity arrangements are not desirable because their evidence suggests there is:

1. *"a relatively low average utilisation of exit flows at Bacton (IUK);*
2. *relatively strong interest from shippers in additional export capacity offered by BBLC; and thus*
3. *considerable benefits from competition that additional route to export gas to the Continent may bring."* [5]

In this sub-section, we respond to each aspect of the argument in turn.

1. Average utilisation is not the appropriate measure of interconnector value.

One aspect of the IA's argument is that demand for export capacity is low, and therefore firm capacity can be used elsewhere "without significantly impacting exit capacity needs of IUK shippers". However, average utilisation does not accurately reflect the full value of an interconnector. Shippers may value interconnector capacity highly in a relatively small number of periods, while on average flow much less gas than the interconnector's available capacity. As ACER notes, UK-Continental interconnectors have traditionally been used as an optimisation tool, rather than as a primary supply infrastructure.[6] Ofgem's argument therefore risks underestimating the cost of the proposed intervention in terms of financial impact on IUK and NTS Bacton (IUK) exit users of not being able to access all of the current physical capacity under Option 2 (effectively) or Option 3.

Ofgem recognises this to some extent by focusing on average utilisation in the summer months, when GB is typically a gas exporter.

As seen in Figure 2.1 below, this will naturally result in higher utilisation rates than averages across the year as a whole. Capacity by its very nature is a concept that should be considered in terms of maximums rather than averages – the economically efficient level of capacity is one that can adequately withstand peak demand, rather than sizing the network to match average demand. The current NTS exit capacity at Bacton (IUK) appears capable of doing so, with peak demand reaching close to IUK's technical capacity in recent years and historically.

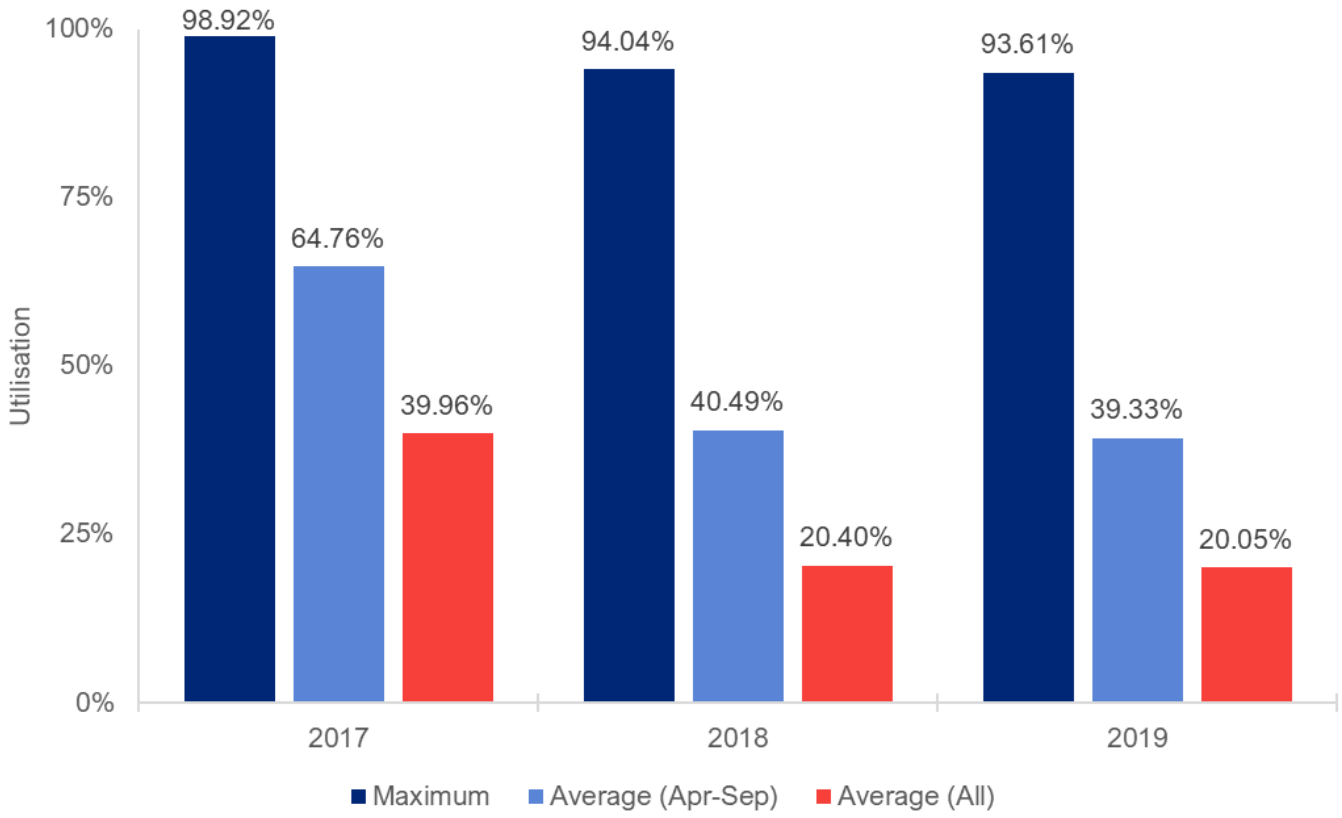
IUK's customers book capacity because many of them have substantial financial interest in being able to serve across a wide range of conditions, including conditions that do not occur most years. They can book capacity and rely on it being available when they need it, precisely because Obligated Exit Capacity provides a firm right. The insurance or hedging nature of such bookings is valuable to them. In practice, in most years NTS capacity is often available in the short term. Given that short-term NTS capacity has typically been heavily discounted, compared to longer-term products, this is often an attractive way to acquire NTS capacity.

IUK itself benefits financially from being able to offer firm capacity to shippers. It could well experience a reduction in revenues and market value if the terms of use of its capacity were changed in this way. More broadly, as we discuss in Section 3, it might produce a reduction in confidence that such rights will be respected, if there is a precedent that they can be reassigned by administrative rather than market-based means.

[5] Ofgem (2019), "*Consultation – Licence Baseline Exit Capacity Arrangements for Bacton*", para 2.20

[6] ACER (2018), "*Market Monitoring Report 2018 – Gas Wholesale Market Volume*", available here

Figure 2.1: Actual physical flows compared to technical capacity at Bacton (IUK) exit point



Source: CEPA analysis of data from https://transparency.entsog.eu/. Note: calendar years.

We note that the same observation that IUK's average usage is relatively low could also equally justify an observation that the ability to access NTS Bacton (BBL) non-obligated and interruptible exit capacity (which is effectively firm most of the time) usage should satisfy BBL's users. A high proportion of the time it can ship, and the BBL export bookings suggest there are no barriers to it selling capacity. BBL seeks to be designated so it can enjoy an increased return from shippers being able to acquire firm NTS exit capacity. For an efficient investment decision, this should have been clarified in advance.

Ofgem has suggested that the relatively low average load of BBL means that expanding exit capacity would be irrational. But it has simply asserted that the value is low, on the grounds of average flow, without considering the value to shippers of certainty of flow. We do not truly know what BBLC or BBL NTS users would be willing to pay for Obligated Exit Capacity, whether that is higher than the cost of increasing the capacity, and how those compare with the value to IUK and IUK NTS users of retaining its Obligated Exit Capacity levels.

2. Standard procedures exist to gauge shippers' interest in additional capacity.

As noted in the consultation document, the European Network Code on Capacity Allocation Mechanisms (CAM) requires transmission system operators (TSOs) to have in place a clear process before incremental capacity is introduced at an IP. In GB, this specific requirement is satisfied by the Planning and Advanced Reservation of Capacity Agreement (PARCA) process. Key aspects of this process include projects requiring clear market signals and evidence of a net societal benefit before they are accepted. This is one example of a standard procedure that has been established ex ante to determine whether major projects should go ahead or not.

Standard procedures such as this play an important role in facilitating economically efficient outcomes. They help to establish that there is sufficient demand for a project, reduce uncertainty (both regulatory and more general), and prevent the arbitrary violation of other important principles, such as economic rights and ownership. We

understand, however, that BBLC carried out its expansion of technical exit capacity without following established procedures. In its 2017 demand assessment report, BBLC note:

> *"The indicative demand is too low to pass even the most favorable [sic] economic test…BBL Company will, however, continue to investigate the possibilities to install physical reverse capability on the BBL-interconnector at its own expense and risk."* [7]

Ofgem's Option 2 would therefore result in Obligated Exit Capacity being made available at Bacton (BBL) without an established standard procedure being followed. While Ofgem state they consider the PARCA process to be "inapplicable and unsuitable on this occasion", a full explanation of their reasoning has not been provided. We observe in passing that such a change is a kind of central planning decision whose value might be better tested by a market transaction.

The "strong interest" inferred from network users' response to call for evidence also falls short of the level required by the CAM for incremental capacity or indeed NGG's PARCA process. It appears that responses received both by BBLC in early 2019 and in Ofgem's Call for Evidence only expressed non-binding interest in firm capacity products at the NTS Bacton (BBL) exit point.

However, this is to be expected as non-binding interest reflects a 'free lunch' for shippers. A positive response to such a question offers the possibility of increased transportation choice (which, all things equal, should be beneficial to shippers[8]), without the risk of having to commit to buying capacity at Bacton (BBL). This will necessarily increase the perceived support, and therefore any qualitative estimate of the benefit. Thus, there is no genuine market signal from users of the value of the facility.

3. Simplistic competition analysis cannot substantiate claims for "limited costs to industry" and "benefits from competition".

Assessing and quantifying the socio-economic impacts of a regulatory change, such as one the being proposed, often requires complex analysis, including the need to estimate impacts on physical flows of gas and the transfer of welfare between various parties. **The level of analysis evident in the IA does not appear robust enough to justify a conclusion that Ofgem's proposed solution is the best one available, or indeed that it will have a net positive societal benefit overall.**

Ofgem's impact assessment guidance[9] notes that policymakers should "compare fully monetised options wherever possible". While it also notes that in some areas, including the potential benefits of opening markets to increased competition, are particularly complex to quantify, this in itself does not justify conducting the IA purely on a qualitative basis, with limited supporting evidence. ENTSOG provide detailed guidance on how to undertake cost benefit analyses relating to gas infrastructure projects, recommending a quantification of benefits wherever possible.[10] While Ofgem state that "limited data does not allow for a quantitative analysis of the competition benefits", efforts have been successful to do so in other areas. Two recent examples of quantitative analysis being performed under similar circumstances are during the roll out of the cap and floor regime for electrical interconnectors[11] and the IA for the Gas Transmission Charging Review.[12]

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[7] BBLC & National Grid (2017), "*Demand Assessment Report for Incremental Capacity between National Grid Bacton IP and BBL Entry/Exit IP Bacton*", available here.

[8] Although see points later in this section for a discussion of whether this is truly the case.

[9] Ofgem (2016), "*Impact Assessment Guidance*", available here

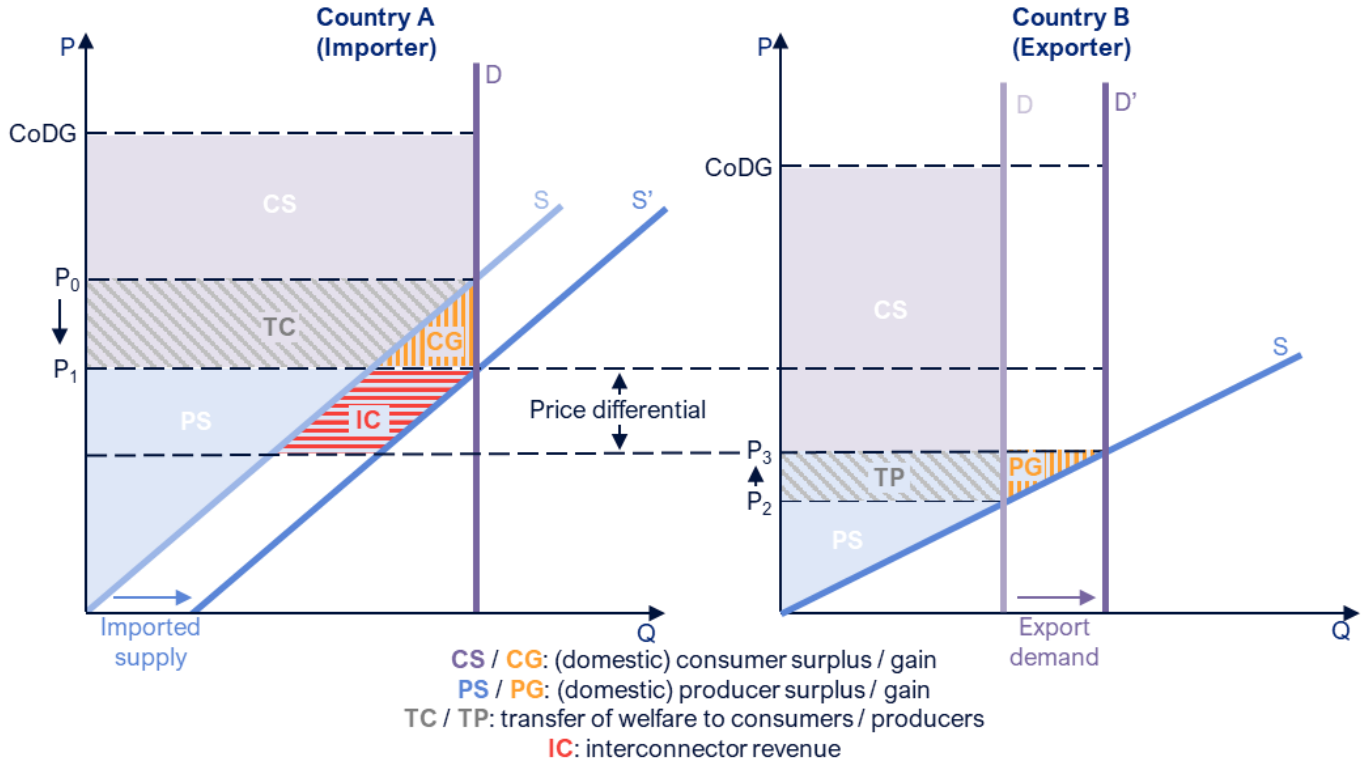
[10] ENTSOG (2018), "*2nd ENTSOG Methodology for Cost-Benefit Analysis of Gas Infrastructure Projects*", available here.

[11] Pöyry (2017), "*Near-term interconnector cost-benefit analysis: independent report (cap & floor window 2)*", available here.

[12] Ofgem (2019), "*UNC678 minded-to decision and draft impact assessment*", available with additional analytical support from CEPA here.

In Section 2.2, we consider the importance of including fully specified alternative options. When assessing the impact of an interconnector project, a full social welfare assessment should take into account the effects on all parties involved. This means GB consumers and producers of gas, the interconnector developer, as well as other interconnector owners, and consumers and producers in other connected countries. Figure 2.2 presents a simplified summary of the fundamental economic value of an interconnector flowing from country B to country A.[13] While TC and TP reflect transfers between consumers and producers within each country, CG, PG, and IC reflect the net gain from trade between markets (or equivalently, a reduction in deadweight loss).

Figure 2.2: Fundamental economic value of interconnectors



Source: CEPA analysis, adapted from Pöyry (2017) – 'Near term interconnector cost-benefit analysis – C&F window 2

Note – CoDG – Cost of Disruption of Gas Supply

One immediate observation is that it is not enough to state that there will be "benefits from competition" or that a proposed change "benefits to consumers", as different actors will be impacted differently.

If the cost to any one network user group is excessively large, then a proposed change may not be justified, even if it leads to a (small) net benefit.

Figure 2.2 shows that an increase in exports will in fact tend to decrease domestic consumer welfare in the exporting country (area TP) for example. With more gas flowing out of GB, higher demand could push prices at the NBP up, at least in the short term. While this may be offset to some extent by benefits to GB producers, a systematic CBA is required to determine whether this trade-off is worthwhile. Ofgem's IA also fails to consider non-domestic consumers and producers, such as those likely to be impacted in Belgium by the proposed change.

A second observation is that the IA fails to identify the deadweight loss existent under the current arrangements, beyond an implied lack of competition. Adequately explaining an existing distortion, should one exist, is a necessary step towards determining the best way to correct for it. **However, there is evidence to suggest that there is little**

[13] This does not necessarily capture all costs and benefits. For example, this static diagram does not reflect the potential longer-term negative impacts described in section 3.2.

adverse impact on competition under the current arrangements, and so the competition benefits have been overemphasised. For example, with respect to the state of the North West Europe gas market Oxford Energy note:

> *"In North West Europe (TTF, NCG, Gaspool, ZEE, PEGN), price alignment and price level convergence continues to be strong: this region behaves as if it is a single-price area, i.e. a fully integrated trans-national market for gas."* [14]

This would suggest that Ofgem's stated (qualitative) benefit of increased access to the liquid TTF hub is likely to be smaller than suggested. A high degree of price alignment would imply that shippers already have good access to TTF and other hubs in North West Europe via Belgium, with few issues. In practical terms, it would mean that there are limited opportunities for arbitrage between the two transport routes, which would be the main factor for shippers' choice between export through IUK or BBL.

One of the few areas where the IA provides some quantitative analysis is in the discussion of forward price as an indication of gas flow direction towards the continent (see Figure 3 in the IA). However, this again only provides limited evidence that there are significant arbitrage opportunities not currently being exploited. For example:

- Less than three months of data is offered, with no indication of price spreads prior to the introduction of physical reverse flow at BBL.
- The flat segments evident in the chart of ZTP-NBP spreads may be indicative of limited liquidity in this particular market for forward contracts, compared to the TTF-NBP spread. Some of the differential between the two could simply be driven by this – i.e. spreads appear different only because there are fewer observable price points in the ZTP market.
- Comparing the physically flowed gas between ZTP-NBP with the (primarily) virtual flow between TTF-NBP is not reflective of the potential price spreads in the case where both routes have physical flow capacity. Virtual and physical flow are different products with different characteristics. In particular, the virtual flow allowed at BBL is necessarily dependent on the demand for physical entry to GB. This inherent uncertainty will be priced into a lower value for the product, which would accentuate any price differential currently observable. This would therefore overestimate any potential benefit once physical exit flow was introduced.

2.2. FURTHER OBSERVATIONS

As well as there being key weaknesses in its core argument, there are a number of statements made in the consultation and associated IA that can be challenged. These include the following:

The counterfactuals and sensitivities are not fully specified.

The purpose of an IA or CBA is to identify the option(s) that best achieve a policymaker's stated objectives, where 'best' is typically mainly measured by the greatest net social benefit. A critical aspect of any methodology is, therefore, to ensure that the analysis properly considers all the feasible scenarios that might occur. In addition to possible alternative policy options, this also includes making sure the baseline counterfactual is properly specified. Ofgem's IA does not appear to achieve this standard:

- **The baseline counterfactual is poorly specified.** Ideally, for a CBA to accurately capture the full net social benefit of the proposed changes, the baseline options would be compared against one in which BBLC have not undertaken the cost of investing in physical reverse flow capability.[15] Failing to capture this

[14] Oxford Economics (2017), "*European traded gas hubs: an updated analysis on liquidity, maturity and barriers to market integration*", pg. 18, available here.

[15] This is related to the previous discussion on the importance of clear and consistent market tests as standard procedures to prevent unilateral and socially inefficient investment decisions.

in the baseline would tend to overestimate any potential benefits coming from increased LNG trade, taking into account that investment was required to create it.

- **Not all feasible alternative options have been considered.** For example, Ofgem have not justified why expanding technical capacity is not a feasible alternative beyond stating it is "inapplicable and unsuitable on this occasion". If the designation as obligated at the NTS Bacton (IUK) exit were tradable, there would be a market test of whether construction of additional capacity was desirable. Other options such as expanding the use of oversubscription and buyback have also not been considered.
- **No sensitivity analysis has been undertaken.** While the IA proposes a number of potential benefits, their magnitude (or existence) depends critically on uncertain drivers. For example, future gas demand and prices can drive the magnitude of the benefits, but both are difficult to predict. The qualitative analysis offered in the IA fails to recognise the uncertainty around the suggested benefits.

Claims regarding the future of LNG growth are speculative and unsubstantiated.

One of the potential benefits proposed by Ofgem is that:

> *"Greater physical capacity for gas traders to export gas to continental markets will make the UK a relatively more attractive destination for gas supplies e.g. LNG… Due to the limited evidence base, we have been unable to monetise the above benefits. However, the qualitative responses from CfE suggest there may be incentivised increased LNG deliveries resulting in a moderate additional benefit."*

This is largely irrelevant because there is no proposal to increase the physical capacity to export gas, which is usually constrained by the exit capacity at Bacton. It will only apply when from time to time capacity is constrained on an interconnector, e.g. for maintenance. More generally, these claims appear to be highly speculative and have limited supporting evidence.

Security of supply benefits are overemphasised.

The security of supply benefits proposed by Ofgem are based primarily on the previous assertion that the change to exit capacity at Bacton will have a meaningful impact on LNG supplies to GB. As discussed above, this is a speculative and implausible argument, and so it should be attributed little weight until further evidence is provided.

3. FIRM CAPACITY AS AN ECONOMIC RIGHT

In this section we set out the following points:

- NTS Bacton (IUK) exit point is Obligated Exit Capacity.
- This obligated capacity creates the valuable ability for IUK to sell its firm Bacton entry and Zeebrugge exit capacity to shippers, a rule that has the character of an economic right, even if it has limitations which means that it falls short of full ownership, such as that of land or plant.
- Removal, or assignment in whole or part to another party, of such a right without full compensation can be argued to be an expropriation, and inconsistent with equity.

3.1. OBLIGATED EXIT CAPACITY AS AN ECONOMIC RIGHT

To an interconnector owner, the fact that the exit capacity used to access the interconnector in the export direction is "Obligated Exit Capacity" is a valuable economic right.

Ofgem describe the implication of the NTS Bacton (IUK) exit capacity being an Obligated Exit Capacity as follows.

> *"This in effect enshrined in the Licence a flat enduring exit baseline for each network point which in turn could be marketed and allocated to network users as contractually guaranteed 'obligated' or 'firm' capacity."* [16]

Ofgem further referred to the origin of the "enduring regime" in a footnote of the 2006 Transmission Price Control Review. This clearly set out "the release and allocation of two NTS exit capacity products, namely flat and flexibility capacity".[17] Flat capacity was available in return for a financial commitment, in order to avoid the NTS suffering stranded assets, and in return the user enjoyed "prevailing rights". The same passage refers to capacity not taken up in this way as "unsold", implying capacity that was so taken up was indeed "sold". However, NGG retained the right to sell daily interruptible capacity on a "use-it-or-lose-it" basis, i.e. capacity the holders of enduring rights were not immediately using could be sold to others. Although the regime for IP Exit Capacity differs from other Exit Capacity due to additional European obligations, Ofgem's reference in the IA to the "flat enduring exit baseline" as mentioned in these documents suggests that they recognise that economically the same issues apply.

The 2006 Transmission Price Review set up these arrangements specifically to avoid stranded assets in the NTS. But similar issues of stranded assets also exist on the other side of the entry or exit point. Investors connecting to the grid also require the confidence of a continuing commitment to its continuing ability to have its connection treated as Obligated Exit Capacity, for its own financial security and value. The quid pro quo, that this is a prevailing right if commitment is the same on each side, appears fair.

In NGG's licence,[18] the mechanism to transfer a designation of Obligated Exit Capacity from one to another exit point is through the substitution regime, which NGG sets out in its Exit Capacity Substitution Methodology Statement. This Substitution Methodology makes clear that capacity which remains Obligated is "sold" and not available for substitution administratively to another exit point. It also explicitly ringfences IP capacity from substitution, which we understand is to ensure compliance with EU regulations. There is also no explicit mechanism for a voluntary transfer of designations, as might happen if there were a voluntary trade so the transfer was compensated. The European Interconnection Document and CAM Network Code provide a mechanism for a party

[16] [16] Ofgem (2019), "*Impact Assessment – Licence Baseline Exit Capacity Arrangements for Bacton*", para 1.14

[17] Ofgem (2006), "*Transmission Price Control Review: Final Proposals*", Appendix 9, para 1.47

[18] Special Condition 9A.

to apply for an increase in incremental capacity at interconnector points. This is applicable to the increase in obligated capacity at the BBL exit point.

3.2. THE EXPECTATION OF RESPECT OF ECONOMIC RIGHTS

This system, both in its inception, design, and in the language of documents cited above, creates a clear expectation among the owners of facilities connected to obligated exit capacity that it will continue to be so designated as long as it is required. So long as the rights are maintained with sufficient commitment to their future usage, the expectation is that the right will be retained.

Standard economic theory states that clear and transparent regulatory frameworks ensure that actors understand what is feasible and acceptable. However, the more instances in which a regulator is willing to deviate from the agreed state of play or agreed market tests, the less credibility the regulatory framework has. A transparent and stable framework is desirable to provide a sufficiently stable environment to secure investment in new transmission-connected facilities, including interconnectors, that rely on being able to continue to access the exit and entry capacity on stable terms to justify their investments. If such regulatory rules creating economic rights are not respected in the longer term, this increases regulatory risk, creates the potential for stranded assets, potentially increases the cost of capital and reduces the incentives for investment.

In the present case, there is nothing in Ofgem's Option 2 that would prevent BBLC from further unilaterally expanding their interconnector's technical capacity in the future, even if this reflects a misallocation of resources for society.

The situation bears some considerable similarity with airport slots. These are assigned rights, subject to various rules, and with various constraints and risks on their use. While there is no formal property right set out in law,[19] there is extensive precedent in continuing to respect established process. Large sums of money changing hands represent the confidence airlines have that this will continue, and their present rights will continue to be respected. The competition authorities recognise that the secondary trade is important to the efficient use of airport slots that have been administratively allocated, so long as the present system continues.[20] Equally the secondary trade requires reasonable confidence as to the enduring nature of the right.

Planning permissions for land also bear some similarity. Once granted such a permission, and satisfying any conditions applying, the right to use the land for the permitted purpose persists. Conditions when the right is first granted may compel you to make a contribution to public infrastructure, or make arrangements to reduce the impact of your activities on your neighbours. However, there are no subsequent interferences, and such permissions are not sold by the state. The state might on occasion compulsorily purchase the land from you because it wishes to reallocate it for reasons of the wider good that would be otherwise difficult to achieve, but it has to buy it at full value, together with recognition of any disturbance it causes.

3.3. EQUITY AND EFFICIENCY

Ofgem's documents refer to a need to take account both of fairness and efficiency. Expropriating a valuable right is generally considered inequitable. It also reduces confidence in the established terms of trade that investment relies on, and an adverse impact on investment may negatively impact competition and efficiency in the long term.

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[19] The court has recognised ownership to the extent that it permitted the bankrupt airline Monarch to sell its slots, as opposed to releasing them for reallocation without compensation as would otherwise happen to a slot that an airline simply ceased to use. But it has not been tested if such rights can be withdrawn from an airline without compensation, for example if airport capacity was reduced, or by changing the allocation rules so that the rights were no longer persistent. Airlines have sometimes been required to release slots as a condition for being allowed to complete a merger.

[20] Competition and Markets Authority (2018) "*Advice for the Department for Transport on competition impacts of airport slot allocation*", available here..

Usually we find that the market, if it is allowed to operate, is more efficient than administered decisions on resource allocation and investment. Sometimes there are difficult impediments to a market solution and an administrative solution is indicated, but often any expropriated rights are compensated.

The IA suggests that the efficiency gain is worthwhile and the unfairness – or at least the value of what is transferred – is low. We would suggest an alternative conclusion because:

- There are other ways of achieving an efficient allocation that does not require "expropriation";
- The value of the firm right may have been underestimated, and thus the unfairness of requiring IUK NTS users to give it up may have not been fully appreciated;
- BBLC's decision to invest in reverse flow capability might have been inefficient, if it relied upon the associated NTS exit capacity being Obligated Exit Capacity, without facing the cost of securing additional capacity or the opportunity cost of removing obligated capacity from the NTS Bacton (IUK) exit point;
- The administrative transfer of rights proposed in the IA does not provide a proper test whether the construction of incremental exit capacity is in fact efficient or inefficient.

As we discussed in Section 2, an IA should ideally consider all options in examining the most appropriate future regulatory policy. We set out possible alternative opportunities and options that Ofgem could potentially consider in finalising its IA in Section 5.

4. IMPLICATIONS OF COMPETING AUCTIONS AT BACTON

Ofgem state their belief in the consultation document that competing auctions would lead to an efficient exit capacity allocation at Bacton. In this context, by 'competing auctions' they mean auctions that have been established to allocate scarce NTS exit capacity at Bacton, in situations when shippers would wish to purchase more NTS exit capacity from GB than what is technically feasible. While the allocation of scarce capacity on the basis of shippers' willingness to pay is generally efficient, there may be negative implications for such auctions for NTS exit capacity at Bacton that are not present with auctions for Bacton NTS entry capacity.

As noted above, NTS entry capacity at Bacton matches the technical capacity of BBL and IUK. Thus, 'contractual congestion' would only occur if shippers wish to obtain more entry capacity than what is technically feasible. Shippers would not face a significant risk that they obtain entry capacity into GB but not matching exit capacity from the Continental systems. This is because total (technical) entry capacity at Bacton and total (technical) exit capacity at the Continental ends of the interconnectors match, and also because individual shippers have an incentive to match their entry-exit capacity bookings.

In contrast, the establishment of competing auctions at an aggregated Bacton exit point will necessarily introduce extra uncertainty for shippers, since the total amount of NTS exit capacity available at Bacton would not match the Bacton entry capacity of the two interconnectors. For IUK this has implications for matching capacity at the Zeebrugge point with Fluxys, Belgium.

Furthermore, since the CAM NC requires that auctions for capacity at interconnection points be conducted simultaneously, and that capacity be allocated independently of every other auction process, under Ofgem's Option 2, the amount of capacity shippers manage to obtain on either IUK or BBL will only be confirmed following each auction. This uncertainty would likely have a negative impact on shippers' behaviour, and is likely to discourage some bookings that would happen otherwise. It could even result in a scenario where, due to the risk of capacity mismatch, the full exit capacity of Bacton (IUK) and Bacton (BBL) combined is not fully utilised, even when it is efficient (and profitable) to do so.

CAM NC requires the system operators to make the maximum possible technical capacity available to users at interconnection points, and also implies that the volume of 'bundled' capacity[21] made available is also maximised. This point is acknowledged as the justification for the current arrangements at the Bacton (IP) entry point:

> *"The baseline capacity of Bacton IP ASEP was set close to the sum of the maximum technical import capability of both interconnectors, in order to maximise the offer of bundled cross-border capacity, which was another of CAM requirements"* [22]

The concept of bundled capacity was introduced into the CAM NC because of the risk of capacity mismatch associated with unbundled entry and exit capacity. Option 2 could limit future bundling of capacity, since capacity bundling requires specifying a path along which capacity is obtained, and the interconnectors and system owners would not know before the auctions how much capacity they can offer as bundled.

[21] Per CAM NC, 'bundled capacity' means a standard capacity product offered on a firm basis, consisting of corresponding entry and exit capacity on both sides of an interconnection point.

[22] Ofgem (2019), "*Consultation – Licence Baseline Exit Capacity Arrangements for Bacton*", para 2.9

5. ALTERNATIVE SOLUTIONS

As has been set out in the preceding sections, Ofgem's IA does not, in our view, provide sufficient economic justification for Ofgem to adopt any of its proposed policy options to replace the status quo. We also consider that it places too much emphasis on the potential – largely unsubstantiated – short term benefits for competition of reallocating baseline capacity at Bacton, without considering the impact this may have on competition in the longer term, within the gas and energy sector more widely in GB, given the potential regulatory precedent it would set. Potential negative implication of competing auctions at Bacton do not also appear to have been considered.

Any change from the current arrangements should satisfy a number of criteria. In particular, we consider that a suitable solution should:

- be compliant with existing legal and regulatory frameworks;
- enable, and where feasible promote, competition in gas markets to the benefit of consumers and network efficiency; and
- achieve the above without causing undue detriment to any one party and with clear support from stakeholders.

Note that a solution that can achieve the second and third requirements is likely to also satisfy a market-based economic test to determine whether it would lead to a net social benefit.

In this section, we introduce a number of potential solutions that Ofgem's final IA should, in our view, consider in reaching a final regulatory decision and view on the costs and benefits of reforming the existing exit capacity arrangements at Bacton IP. These include:

- methods to facilitate the equitable allocation of capacity rights through trade;
- increasing baseline capacity at the Bacton IP; and
- options to increase utilisation of existing capacity under current exit arrangements.

As part of the scope of this report, we have not sought to evaluate the costs and benefits of these potential alternatives to Ofgem's current consultation options. However, it would seem appropriate that these options are at least considered before finalising the IA and Ofgem's proposed regulatory policy.

This is particularly the case, given that the issues we have identified with Ofgem's assessment of the current options compared to the status quo, as discussed in previous sections.

Facilitate the equitable allocation of capacity rights through trade

In Section 3, we set out the risks and potential negative impacts of reallocating a potentially valuable economic right without compensation. There is also currently no explicit mechanism for "substitution" of obligated exit rights to occur when those rights are in current use.

If it were possible for such rights to be transferred as a voluntary trade, it would enable the proposed substitution to be assessed by the market. Trade in economic rights is widely recognised an efficient and equitable method to reassign them. It therefore seems appropriate to consider options to facilitate it in a suitable way. There are numerous advantages to this:

- It offers the potential to re-designate a fraction of the Bacton obligated exit capacity from the Bacton (IUK) exit point to another exit point, if it is more highly valued by the party connected at that exit point, and in the most efficient quantity.
- If such a trade cannot be agreed at a value below the cost of expanding NTS exit capacity at Bacton, then this is a more satisfactory market test of whether it is efficient for NGG to expand the exit capacity instead.

- BBLC and BBL NTS users will face the opportunity cost of any taking over the obligated capacity, thus obtaining an efficient return on its investment, rather than one that depends on obtaining valuable rights for free.
- IUK and IUK NTS users are properly compensated for any portion of the right that it gives up to another party, avoiding the unfairness of "expropriation".

IUK has to compete with Norwegian supplies and LNG imports, among others. Therefore, it considers it has a proper incentive to consider the value of the right, and trade it if an appropriate value is offered.

Increase baseline capacity

A trade-off between IUK and BBLC and their respective NTS users for Obligated Exit Capacity at the Bacton IP would not be necessary if the total volume of NTS technical exit capacity was expanded. As previously noted, Ofgem have not justified why expanding technical capacity is not a feasible alternative, beyond stating it is "inapplicable and unsuitable on this occasion".

There are already processes in place that ensure this can only be undertaken following a clear market signal (and/or if required for security of supply reasons). While there has been a lack of clear signal from BBLC or its users to date, this option should still be assessed in the context of a counterfactual to Ofgem's current preferred Option 2. For example, analysis may show that it would be cheaper to expand technical capacity by (up to) 170 GWh/day at the NTS Bacton (BBL) exit point, given the potential opportunity costs from reallocating Bacton (IUK) Obligated Exit Capacity. In this case, even without market demand, this would further demonstrate that Option 2 was not the most economically efficient approach to take.

Increase utilisation under current arrangements

We understand from IUK that it may also be possible to increase available NTS exit capacity without requiring investment in incremental technical capacity. Under current arrangements, there is scope for NGG to increase the utilisation of existing capacity to the benefit of both itself and network users through a number of approaches.

For example:

- **Oversubscription and buy-back (OSBB).** When provided with an appropriate incentive framework, TSOs can develop innovative approaches to efficiently manage the booking of capacity, acknowledging the fact that not all booked capacity will ultimately be utilised. This approach is commonly used as a technique to manage congestion on networks, and we understand that the German TSO is currently exploring its use to deal with physical constraints under new trading arrangement proposals.
- **Expanded firm non-obligated products.** As noted previously, Ofgem's observation that IUK's average usage is relatively low would imply that there is already a material ability to access NTS Bacton (BBL) non-obligated and interruptible exit capacity (which is effectively firm most of the time), and this can already satisfy BBL's users to some extent. The possibility of expanding the number of similar products offered – for example to longer durations than the daily and with-day products currently available – could be explored to further satisfy demand.
- **Dynamic calculation.** As gas systems become more interconnected, the network dynamics become more complicated. In turn, it becomes more challenging to accurately calculate the available capacity available at any given time, which has to take into account factors such as the properties of gas, the use of any flexibility services offered, gas demand at exit points, and operational approaches by SOs. If NGG can develop more accurate calculation methodologies, they can better understand, predict, and manage available capacity.

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