



ENERGINET

INFORMATION PACKAGE: USER INVOLVEMENT IN NETWORK DEVELOPMENT PLANNING

Energinet Gas TSO

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GUIDANCE

The Danish gas system is built and developed to facilitate the needs of the users.

As a user of the Danish gas system, you now have an opportunity to influence the development of the system through the so-called Incremental Capacity Process as defined in the EU Network Code.

The process will begin summer 2021 as described in this document.

You are encouraged to send your demands for Incremental Capacities in the Danish gas system, so this can be considered in the overall planning.

You should make yourself familiar with the information exchange and deadlines in the Incremental Capacity process, as outlined in this information package.

THE USE OF THE DANISH GAS SYSTEM WILL INCREASE WITH BALTIC PIPE

The utilization of the Danish gas system is set to increase with Baltic Pipe operational from 2022. This contrasts with the trend in recent years of decreasing need for gas transportation. However, the Danish national consumption is expected to continue to decrease.

With the income from transportation of gas from Norway to Poland via Denmark from 2022, tariffs for all users will be lower than they would otherwise have been. This will benefit all users of the system.

Energinet Gas TSO is the operator of the transmission part of the Danish gas system. We welcome all current and future users to our system, and we want to be able to cater for users' needs for capacity products in the future.

Thus, the question becomes, when looking at our future with Baltic Pipe: Is there indeed enough capacity for all users at our entry and exit points? Or is the flipside of high utilization that we are looking at potential bottlenecks, and a need for investment?

Based on current knowledge, Energinet is expecting high flows in the gas transmission system and no bottlenecks.

Some users may also have been involved in the 2019 Incremental Capacity process. There were no binding bids for Incremental Capacity, after an initial non-binding indication of interest – in short, no need for investment. However, the non-binding indications lead to a separate open season process on new capacity to Lolland-Falster and a subsequent investment decision in 2021.

Under the EU network code on Capacity Allocation Mechanisms (NC CAM), we are obliged to assess demand for so-called Interconnection Points (IP's), by following a

structured process leading from demand assessment to offers and ultimately contracts for incremental capacities with interested users.

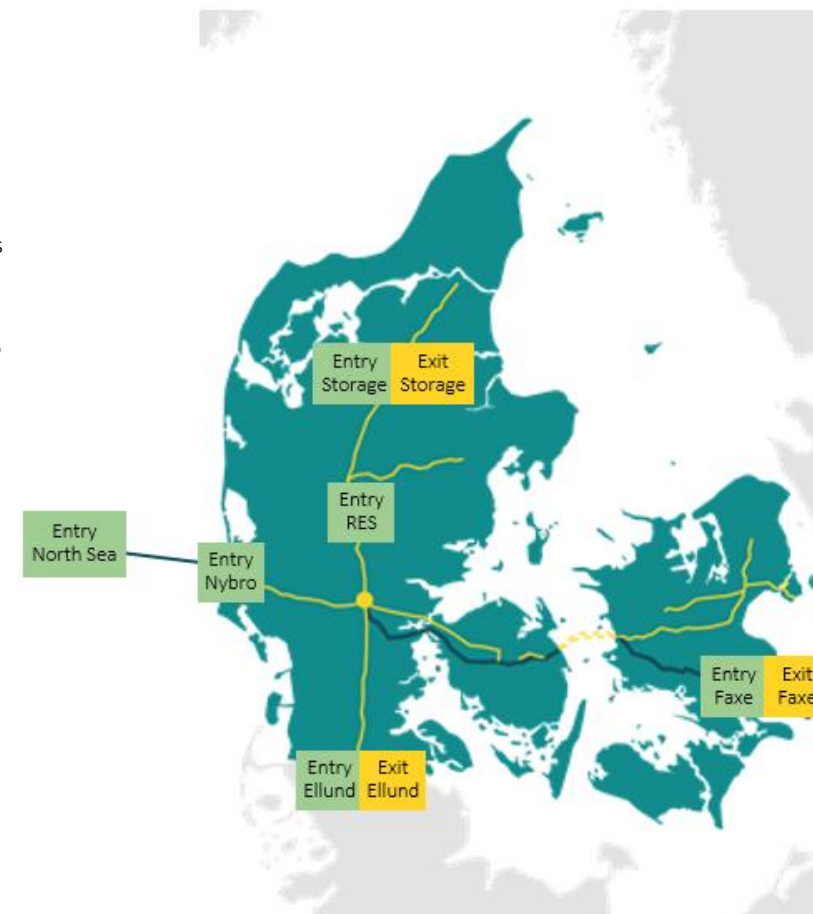
Thus, interests are aligned: We want to make sure user needs are met, users want to make sure their voices are heard, and they can book the capacities they need, possibly as newly-formed incremental capacities, and the EU and regulators want to make sure there is an open, inclusive, and transparent process, and that all user voices are heard.

Although only our border point with Germany (Ellund) is a current IP according to the EU definition, we would like to treat also future "IP Faxe" (future export to Poland) and our other points to the NC CAM process to a wide extent, however recognizing unique characteristics of each point.

At entry point Nybro, used by Danish gas production (as well as, in the future, by Norwegian imports as part of the "Entry North Sea" point), it is relevant to consider long-term capacity contracts having conditions precedent on e.g., gas field development milestones.

With the Joint Balancing Zone with Sweden, there are no dedicated capacity products for transportation between Denmark and Sweden. The robustness of the system is secured via an Interconnection Agreement between Energinet and the Swedish TSO, Nordion.

It has come to our attention that some users are considering the future potential for using the gas transmission system for hydrogen transportation. Please note that this is a not part of the Incremental Capacity process. Please contact gasinfo@energinet.dk for questions concerning hydrogen in the gas transmission system.



THE DANISH SYSTEM IS ROBUST, BUT ELLUND USERS NEED TO FOCUS ON GERMAN ENTRY CAPACITIES

With the current understanding of future user needs for capacities, the system – as expanded with Baltic Pipe investments – is capable of meeting combined needs with a very low risk of interruptions

The gas system is flexible and will support various flow scenarios. Capacity in a specific point depends on flow scenarios in the rest of the system – and a high demand in one point can to some extent be supported by redirecting unused capacity from another point. Management of the system is the responsibility of Energinet, with the aim to fulfill capacity contracts with users.

In general, flexibility is a result of such things as operational flow patterns, market model features, and pressure service agreements with connected systems; in addition to the more obvious physical dimensions of the system. Physical expansions are not always the most cost-effective way to create flexibility.

The main “transportation task” of the Danish gas system with Baltic Pipe, and therefore the most important measure of performance, is the ability to transport from west (Danish gas production plus Norwegian gas) to east (center of gravity of Danish and Swedish gas consumption plus transit Poland); subject to pressure limits.

The limitations in this west-to-east transportation is what defines both entry capacity in Nybro and exit to customers in the eastern part of Denmark and in Sweden and towards Poland (Faxe). Withdrawal from Stenlille Storage is necessary to secure firm transportation capacity west to east under given criteria (-13 degrees Celsius temperature).

The net gas consumption in Sweden (net of local sources such as Swedish green gases and regasified LNG) is of particular interest. With our understanding of expected future net gas

consumption, there is enough capacity in the system to meet this, at the same time as a potential user demand for up to 13.4 GWh/h export to Poland.

As there is no signal from the market regarding the future need for transportation to Sweden, we have a requirement to get information on this in other ways. For the purpose of analysis on expected capacities on entry and exit points, a maximum Swedish demand of 3.0 GWh/h has been assumed.

Entry capacity in Nybro will in the future be utilized both by users from Danish North Sea gas production and by users importing gas from Norway. An important fact in this regard is the decision by the Tyra operator, Total, to limit the new Tyra platform’s flow capacity (incl. third-party volumes) to 4.1 GWh/h. This, in addition to limited prospects for flow outside Tyra has been taken into account in the expectation for entry flows in the western part of the system. Entry Nybro can be “disrupted” in case of a major new development in the Danish North Sea – this is, however, expected to take upwards of 10 years from inception to reality.

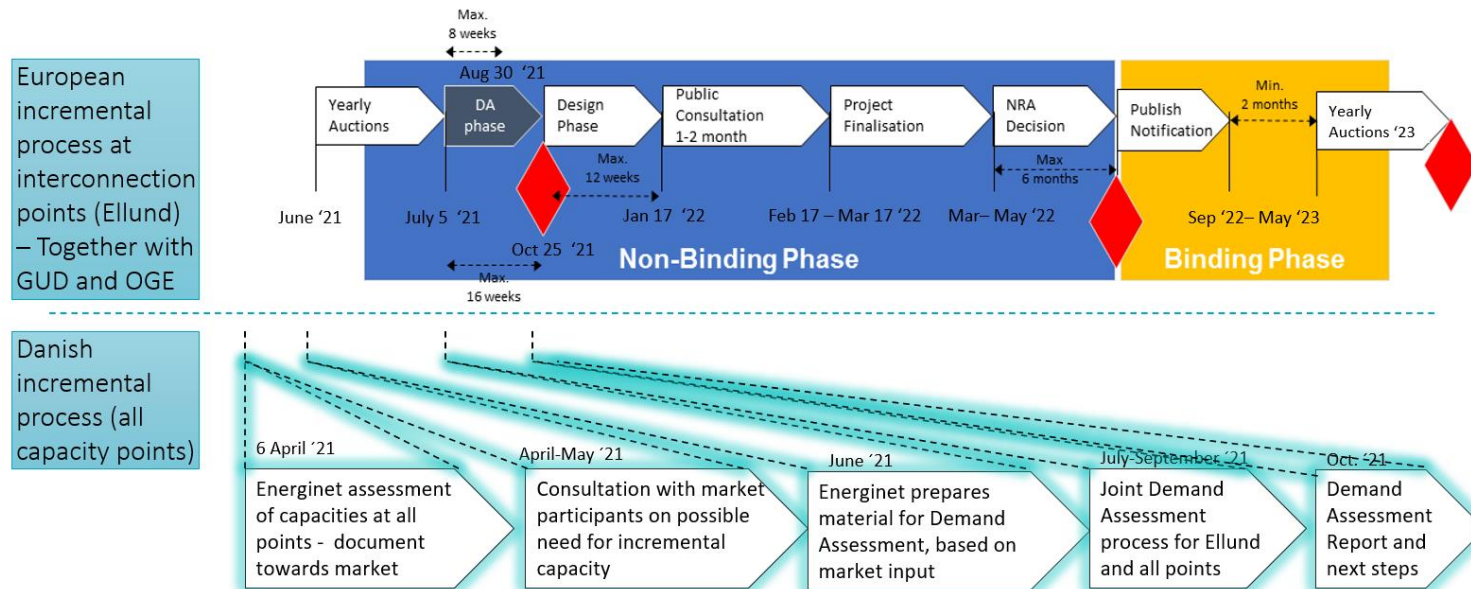
Regarding imports from, and exports to, Germany, the capacity on the Danish side exceeds the capacity on the German side. Ellund users are in this regard referred to the corresponding capacity process at our German neighboring TSO’s, Gasunie Deutschland and Open Grid Europe. Gasunie Deutschland has informed, that in case of construction of one or more LNG import terminals in Northern Germany, Germany will have no firm import capacity from Denmark. It is important that Ellund users make their voices heard towards the German TSO’s in this regard.

Table of expected possible capacities – meaning our expectation for what is possible to transport (across the totality of points) with the integrated system. It does not mean, however, that all those capacities in individual points necessarily will be offered to the market in the future – that depends on market interest in the individual points:

Point	Explanation	Expected possible capacity (GWh/h)
Entry North Sea	Imports from Norway	13.4
Entry Nybro	Imports from Norway + Danish North Sea	20.3
Entry Faxe	Imports from Poland	3.8
Entry Ellund*	Imports from Germany	7.7
Entry RES	Biomethane injection	According to socioeconomic valuation
Entry Storage	Withdrawal from Danish storage	8.2
Exit Faxe	Exports to Poland	13.4
Exit Ellund	Exports to Germany	10.0
Exit Storage	Injection to Danish storage	4.2

* Entry Ellund capacity is expected to be 7.7 GWh/h on a long-term basis

USERS DRIVE NETWORK DEVELOPMENT



Users of the system know their own businesses best, and are the best positioned to look into the “crystal ball” regarding future need for capacities. In case the aggregation of user demands exceeds capacity in a point, the Incremental Capacity process gives users the opportunity to enter into contracts for such extra capacity, steering Energinet to develop the network further.

Network development planning is a balance between meeting demand in due time and avoiding over-investment in infrastructure. As future business models, and thereby demand for capacities from users, is uncertain, it would – in case input for network development was a non-binding process for users – be in a user’s interest to signal a high demand. If Energinet developed the network following the aggregation of such non-binding signals, over-investment could be the consequence. This would then be to the detriment of all users, as tariffs would increase for all.

Therefore, just as the EU NC CAM protects the interest of an *individual user* (by ensuring the user’s voice is heard), it also protects the interest of the TSO (and by extension, the *sum of users*) by ensuring that network development for IP’s is done in tandem with binding commitments from users in the form of capacity contracts.

The incremental process executed by Energinet this year will include the following main steps:

1. Energinet will gather first demand signals via dialogue with the market (April-May 2021).
2. After the Annual auction on 5 July 2021, Energinet will forward Demand Assessment Questionnaires for all capacity points in the Danish system.
3. Market participants may forward non-binding demand indications until 8 weeks after the annual auction (until 30 August 2021).

4. Energinet will publish a Demand Assessment Report, covering all points latest 16 weeks after the annual auction (until 25 October 2021). The report will conclude if the IC process will continue for one or more points – or, if no sufficient indications were received, the process may end.
5. If the process continues, next steps will be a design phase, market consultation and decision by DUR.
6. If incremental capacity is decided, the additional capacity will be offered in auctions at the respective point(s).

For Ellund, the IC process will be followed, whereas for other points, Energinet will apply the Incremental Capacity process to the extent reasonable, but with freedom to take unique characteristics of the points and its users as a basis for adjustments, should demand assessments indicate an interest in network development.

Energinet also invites the market to inform us, in case a need is seen for new or expanded capacity in specific locations in the Danish gas system, towards the Joint Exit Zone (i.e., for new end-user demand in Denmark).

The findings in the Demand Assessment Report will figure in Energinet’s Long-term Development Plan (LDP) which will be published in 2022. The LDP is a new refined plan to create overview and transparency of Energinet’s future potential investments and with the intention to increase involvement from stakeholders and the public.

DEMAND ASSESSMENT QUESTIONNAIRE TO USERS

Energinet will forward a Demand Assessment Questionnaire to the market, to gather non-binding demand indications from market participants

The questionnaire will be used to gather information on:

- Relevant point
- Relevant systems/TSO's
- Capacity duration (gas years)
- Amount
- Possible conditions

Some points might require more information, in order to perform a sufficient assessment. Any additional data requirements will be explained in detail, when the questionnaire is forwarded to the market.

For IP Ellund, the incremental capacity process is a joint task between Energinet and the two adjacent systems in Germany (Gasunie Deutschland and Open Grid Europe).

For other points, the incremental capacity process is solely performed by Energinet, but any demand indications will obviously be subject for discussion with the respective adjacent systems.

Information from users will be treated as confidential, except in the aggregate form of total demands at points.

Incremental capacity and non-binding indications														
ID no.	Point in Danish gas transmission system	Explanation	Total capacity (GWh/h)	Booked capacity (GWh/h)	Available capacity (GWh/h)	Start (year/month)	End (year/month)	Annual (MWh/year)	Hourly capacity (kWh/h)	Daily loadfactor 0,xx (%)	Yearly profile (daily/monthly) enclosed - Yes/no ?	Request submitted to other adjacent system operator/TSO - Yes/No, name	Conditions for long term contract	Further remarks
1	Entry North Sea	Imports from Norway	20.3	10.6	2.8									
2	Entry Nybro	Danish North Sea (Tyra-Nybro and South Arne-Nybro)		0	9.7									
3	Entry Faxe	Imports from Poland	3.8	0	3.8									
4	Entry Ellund	Imports from Germany	7.7	3	4.7									
5	Entry RES	Renewable Energy Source injection in gastransmission in Denmark	technically "unlimited"	0,4*	technically "unlimited"									
6	Entry Storage DK	Withdrawal from Danish storage facilities	8.2	0	8.2									
7	Entry "New Denmark "	Any new Entry point in Denmark apart from RES (i.e. LNG or onshore gasfield)	0	0	0									
8	Exit Faxe	Exports to Poland	13.4	10.6	2.8									
9	Exit Ellund	Exports to Germany	10.0	0	10.0									
10	Exit Storage DK	Injection to Danish storage facilities	4.2	0	4.2									
11	Joint Exit Zone (Sweden)	Part of Joint Exit Zone (Denmark + Sweden)	3.0	0	3.0									
12	Joint Exit Zone "New Denmark "	Any new Market demand in Denmark (i.e. large industrial area/municipality) without connection to gastransmission system	0	0	0									

Link to Energinet's webpage on Incremental Capacity, with 2019 results:

- <https://en.energinet.dk/Gas/Shippers/Incremental-capacity>

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