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Transmission tariff method application

# FINAL CONSULTATION DOCUMENT

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# 0. Disclaimer

The present Draft Tariff Method Application (Method Application) is distributed for public Final Consultation among shippers and other stakeholders of the Danish gas transmission system.

Please, note that this Final Consultation version will be sealed from changes, while remarks received will accompany the Method Application.

Throughout the document indicative transmission tariffs are shown to illustrate the impact of different method changes. These indicative tariffs are non-binding. Likewise, the indicative tariffs are based on future costs and expected use of the transmission system that may be revised prior to new transportation tariffs coming in force from October 2019.

Similarly, the method elements proposed are non-binding until approved by the Danish Utility Authority (formerly Danish Energy Regulatory Authority).

# 1. Dansk opsummering

## 1.1 Høringsproces

Kommissionens forordning (2017/460) om *fastsættelse af en netregel for harmoniserede transmissionstarifstrukturer for gas*[1] (TAR NC) træder fuldt i kraft fra den 31. maj 2019. TAR NC præciserer det samlede metodiske grundlag for beregning og offentliggørelse af transporttariffer. I overensstemmelse med TAR NC fremsendes høringsmateriale og nærværende metodeanmeldelse til den nationale regulerende myndighed, Energitilsynet (siden 1. juli 2018 *Forsyningstilsynet*), til godkendelse og til Agenturet for Samarbejde mellem Energireguleringsmyndigheder, ACER, for at sikre, at reglerne gennemføres i hele EU på den mest effektive måde.

Derfor indeholder metodeanmeldelsen i modsætning til tidligere anmeldelser ikke blot nye elementer, men også den samlede tarifmetode inklusiv de elementer, som ikke søges ændret men blot stadfæstet under forordningen.

Nærværende version af tarifmetodeanmeldelsen fremlægges til *endelig høring* (Final Consultation) blandt transportkunder og øvrige interessenter til det danske gastransmissionssystem i perioden 31. august til 1. november 2018. Det endelige høringsdokument indeholder ændringer til tidligere versioner foranlediget af den foreløbige høringsproces, der afsluttedes 1. august og har til hensigt, at give høringsparterne en sidste mulighed for at give bemærkninger til Energinets endelige høringsdokument.

Metodeanmeldelsen og høringsdokumenter (bemærkninger fra høringsparterne) overdrages 8. november 2018 til Forsyningstilsynet og til ACER.

Sekretariatet for Energitilsynet har 28. maj 2018 besluttet, at Energinet (som gas TSO) skal:

- foretage den endelige høring i henhold til artikel 26, stk. 1 herunder vurdering af omkostningsfordeling (artikel 5)
- fremsende høringsdokumenterne i den endelige form til agenturet (ACER) jf. artikel 27.

Energinets endelige høringsdokument om referenceprismetoden (final consultation document) er det dokument, der sendes til ACER til analyse i henhold til artikel 27 stk. 1 og 2, og som Energistilsynet træffer beslutning om på grundlag af artikel 27 stk. 4. Energinet er derfor bedt

[1] https://eur-lex.europa.eu/legal-content/DA/TXT/HTML/?uri=CELEX:32017R0460&from=EN

om tydeligt at informere markedets aktører om, at *Energitilsynet (Sekretariatet) ikke foretager en selvstændig høring af referenceprismetoden*. Det vil i forlængelse heraf ikke være muligt, at ændre i metoden fra iværksættelsen af den endelige høring, mens høringssvar fra markedets aktører vedlægges anmeldelsen til brug for Energitilsynets (Forsyningstilsynets) godkendelse og ACERs analyse.

## 1.2 Metodeanmeldelsen

Nærværende metodeanmeldelse er udarbejdet på engelsk og har ikke en selvstændig og fuldstændig dansk version. Det skal understøtte internationale markedsaktørers vurdering og ACERs analyse. Forsyningstilsynets godkendelse forventes udarbejdet på dansk suppleret af et engelsk resumé.

### 1.2.1 Omkostningsallokering (referenceprismetoden)

Det nok primære element i tarifmetoden er omkostningsallokeringsprincippet (referenceprismetoden). Energinet søger med metodeanmeldelsen Forsyningstilsynets godkendelse af en uniform omkostningsallokeringsmetoden til beregning af kapacitetstarifferne fremadrettet. En uniform omkostningsallokering medfører, at kapacitetstarifferne er ens i alle systemets indfødningspunkter (entry) og aftagspunkter (exit).

Uniforme kapacitetstariffer var den gældende metode frem til oktober 2012, hvorefter metoden i den mellemliggende periode har været differentierede kapacitetstariffer, hvor marginale kapitalomkostninger (CAPEX) afledt af systemudvidelser mod Ellund (importkapacitet fra Tyskland) fordeltes til individuelle systempunkter baseret på en nyttevurdering. Omkostninger afledt af det historiske transmissionssystem før disse udvidelser fordeltes fortsat uniformt til alle punkter.

Den delvise differentiering havde til formål at modvirke en eventuel krydssubsidiering af omkostningerne til importkapacitet til de aktører (Nordsøproducenterne), der ikke drog nytte og var i direkte konkurrence med importeret naturgas. Derfor var Nybro Entry (mod Nordsøen) friholdt for omkostningerne til etablering af importkapacitet.

Energinets metode til differentiering vurderes ikke fuldt at lave op til alle krav stillet i TAR NC og samtidig er en væsentlig del af begrundelsen for nyttevurderingen ændret siden 2012. TAR NC stiller både skærpede krav om vurdering af omkostningsfordelingen (art. 5) og beskriver en referenceprismetode til differentiering, kapacitetsvægtet afstand, der samlet gør den nuværende metode til differentiering i det danske transmissionssystem vanskelig at begrunde.

Tyra-feltet står foran en større og flerårig ombygning, der i en længere periode forventes at reducere forsyningen fra den danske Nordsø betydeligt. Tyra-ombygningen medfører, at argumentet om krydssubsidiering ikke i samme grad er relevant begrundelse for den nuværende differentiering, idet Nordsøproducenternes adgang til det danske nedstrømsgasmarked begrænses af tekniske årsager.

Samtidig står transmissionssystemet overfor den største og mest omfattende investeringsbeslutning, Baltic Pipe, der kan forventes i systemets resterende levetid. Baltic Pipe har til hensigt at etablere transitkapacitet fra norske opstrømsrør i Nordsøen gennem det danske transmissionssystem til en ny offshore forbindelse gennem Østersøen til polske og tilstødende transmissionssystemer.

Der skal i 2018 træffes investeringsbeslutning på regeringsniveau i Danmark (såkaldt § 4 godkendelse af Energi- Forsynings– og Klimaministeren) og Polen om projektet. Investeringsbeslutningen om Baltic Pipe er betinget af indgåelsen af 15-årige kapacitetskontrakter i en Open Season og en samfundsøkonomisk projektvurdering. Den altovervejende samfundsøkonomiske begrundelse for Baltic Pipe er forventningen om reducerede gennemsnitlige transportomkostninger. Transitmængderne i Baltic Pipe forøger den samlede fremtidige transport mere end projektets afledte omkostninger forøger samlede omkostninger.

De lavere gennemsnitlige transportomkostninger indikerer at nye transitkunder med en gennemsnitlig betaling bidrager til at holde omkostningerne nede for alle brugere – der er et betydeligt økonomisk dækningsbidrag fra projektet. Det er forskelligt fra Ellund-udvidelserne i 2012, hvor importeret gas erstattede faldende indenlandsk gasproduktion, dvs. at Ellund-projektet ikke havde et dækningsbidrag, der oversteg udvidelsernes omkostninger og de resulterende tariffer var højere.

Derfor er det Energinets vurdering, at nyttebegrebet til grund for differentierede tariffer ikke er til stede ved Baltic Pipe projektet, og at omkostninger og fordele (lavere tariffer) med rimelighed bør fordeles lige mellem nye og eksisterende systembrugere i form af uniforme kapacitetstariffer.

Uniforme kapacitetstariffer skaber samtidig sikkerhed for nye transportkunder for at de ikke vil oppebære en disproportional andel af fremtidige omkostninger. Det er både en rimelig og nødvendig beskyttelse af nye transportkunder forud for indgåelsen af lange kapacitetskontrakter i en Open Season.

Princippet om uniforme kapacitetstariffer sammen med forslaget om en samlet fælles dansk tarifzone, der inkluderer ny opstrømsinfrastruktur i Nordsøen, behandlet i et notat om tarifprincipper[2], som Energinet har haft i høring blandt markedsaktører og derefter bedt Energitilsynet vurdere forud for denne metodeanmeldelse. Energitilsynets Sekretariat har på den baggrund 31. januar 2017 i forbindelse med Open Season 2017 udtalt sig[3] om de påtænkte principper for markedszone og tariffer, ligesom Energitilsynet (Sekretariatet) har godkendt de regler for allokering af kapacitet, som gælder for Open Season 2017.

### 1.2.2 Øvrige elementer i tarifmetoden

Nærværende metodeanmeldelse bevarer en række principper i tarifmetoden, som allerede er indeholdt i den gældende metode. Det inkluderer metoder (der ikke ændres i forhold til gældende tarifmetode) til fastsættelse af:

- Multiplikatorers og sæsonfaktorers niveau herunder en langsigtet multiplikator i spændet 0.9-0.95, der lægges til tariffen for flerårige kapacitetsbestillinger med en varighed over 5 år.
- Beregning af mindstepriser for ikke-årsstandardkapacitetsprodukter for uafbrydelig og afbrydelige kapacitet.
- Entry- og exitopdeling, dvs. fordelingen mellem indtægter fra kapacitetsbaserede transmissionstariffer i alle entrypunkter og indtægter fra kapacitetsbaserede transmissionstariffer i alle exitpunkter, der fortsat er et såkaldt ex post forhold, dvs. at fordelingen opstår som funktion af reservationer snarere end ved en metodisk fordeling (ex ante).

[2] http://energitilsynet.dk/fileadmin/Filer/Hoeringer/Gas/2016/For_Public_Consultation-_Tariff_principles_and_market_design.pdf

[3] http://energitilsynet.dk/tool-menu/kontakt-og-presseinfo/nyheder/enkelt-nyhed/artikel/baltic-pipe/

- Rabat på kapacitetsbaserede transmissionstariffer i entrypunkter fra og exitpunkter til lagerfaciliteter, der fortsat vil være på 100%, dvs. uden prissætning i transmissionssystemet.

Andelen af transmissionstjenesteindtægter, som skal opkræves som kapacitetsbaserede transmissionstariffer (kapacitets- og volumenopdelingen) er som hidtil beregnet til at dække kapitalomkostninger (CAPEX), mens volumentariffer beregnes til at dække drifts- og vedligeholdsomkostninger (OPEX).

Det er et princip, som transportkunder i dialogen med Energinet har tilsluttet sig, og det er en transparent metode til at allokere omkostninger mellem kapacitet og volumen. Det er samtidig en metode, der sammenlignet med en ren kapacitetstarif medfører, at kapacitet i det danske system bliver billigere og et prissignal til transportkunderne om at kapacitet i det danske system ikke udgør en flaskehals.

Det danske transmissionssystem er designet til at transportere betydelig transitmængder fra den danske Nordsø og forsyne et større hjemmemarked. I takt med faldende produktion fra Nordsøen og aftagende efterspørgsel på hjemmemarkedet er systemet i stigende grad overdimensioneret til nuværende markedsforhold. Anvendelsen af ledig kapacitet i den eksisterende infrastruktur er samtidig en begrundelse for, at Baltic Pipe kan gennemføres med tilstrækkeligt lave afledte tariffer.

TAR NC art. 4 (Transmissions- og ikke-transmissionstjenester og –tariffer) fastslår at transmissionstjenesteindtægter skal opkræves som kapacitetsbaserede transmissionstariffer. Som en undtagelse kan en del af transmissionstjenesteindtægterne kun opkræves som volumentariffer, hvis de opfylder følgende kriterier (art. 4 stk. 3):

i) det opkræves med henblik på at dække de omkostninger, som primært skyldes gasstrømmængden
ii) det beregnes på grundlag af forventede eller historiske gasstrømme, eller begge dele, og fastsættes på en sådan måde, at det er det samme i alle entrypunkter, og det samme i alle exitpunkter

Energinet fortolker Artikel 4, som at hovedparten af de samlede indtægter skal opkræves via kapacitetstariffen, og samtidig at omkostningerne allokeret til en volumenbetaling skal være variabel i forhold til transportmængder.

OPEX' andel af samlede omkostninger er tættere på halvdelen – se figur 3 nedenfor. OPEX' andel forventes at blive reduceret til under 40%, hvis Baltic Pipe projektet gennemføres. *For at sikre, at andelen af samlede kapacitetsindtægter udgør hovedparten af indtægterne har Energinet indsat en administrativ begrænsning for volumenindtægternes andel på maksimalt 40% af de samlede indtægter.* Det har betydning i perioden indtil år 2022, hvorefter det forventes ikke at have praktisk betydning, hvis Baltic Pipe gennemføres, idet CAPEX-andelen forøges.

Der er altså to nye elementer i nærværende metodeanmeldelse:

- Uniforme kapacitetstariffer, der erstatter differentierede kapacitetstariffer
- En begrænsning på volumentariffernes andel af samlede indtægter på 40%, som har til hensigt at sikre, at hovedparten af indtægterne uafhængigt af udvikling i transportmængder og omkostninger tilvejebringes gennem kapacitetstariffen.

I tillæg til metodebeskrivelsen indeholder metodeanmeldelsen også en række beregninger afledt af TAR NC art. 5 (Vurderinger af omkostningsfordeling), der både skal understøtte ACERs vurdering af metoden, og samtidig dokumentere at metoden opfylder universelle krav til prissætningen om transparens, ikke-diskrimination og omkostningsreflektion. Det er særligt omkostningsallokeringen mellem transitkunder og indenlandske forbrugere, som er styrket i TAR NC.

# 2. Introduction

Regulation (EU) 2017/460 establishes a *network code on harmonised transmission tariff structures for gas (TAR NC)*,[4] including rules on the application of a reference price methodology and calculation of reserve prices for standard capacity products. The set out of Union-wide rules have the objectives of contributing to market integration, enhancing security of supply and promoting the interconnection between gas networks. TAR NC has been implemented in stages and comes fully into force from 31st May 2019.

TAR NC aims to harmonise tariff structure across Member States while setting objective indicators by which to compare methodologies. However, the network code also contains some degree of freedom to design methodologies that allows for national market conditions. Energinet proposes to utilise this freedom to design a methodology that constitutes a flexible, transparent and non-discriminatory pricing regime within a transmission system with few capacity bottlenecks, significant transit flows and the emergence with renewable biogas produced locally inside the licensed transmission area. The benefits of harmonisation with tariff setting in adjacent systems or addressing national market conditions should be weighed against each other in designing the tariff methodology. In order to facilitate market involvement Energinet will provide all necessary information in English.

## 2.1 Stakeholder involvement

It is the intention of Energinet that the present tariff methodology should provide a robust basis for future tariff setting years into the future rather than as a temporary stepping stone that address the present or short term challenges in the market. At the same time, the methodology will be presented to stakeholders at an atypical period of operation in the Danish gas transmission.

In the short to medium term gas flows from Danish production fields is temporarily disrupted as the Tyra field infrastructure is redeveloped during the years 2019 to 2022. During redevelopment supplies from the North Sea will be significantly lowered, while import through Ellund Entry IP provides the majority of gas supplies to the Danish and Swedish markets. This has impact on both transit flows and the cost base, as Energinet is likely to incur temporary additional cost to safeguard security of supply. Once Tyra recommences operation, it is expected that North supplies resumes at close to the present level.

Long-term from October 2022 and forwards Baltic Pipe could have even greater impact on the supply and transit situation. The project is approaching a final investment decision expected in October 2018, and shippers have already entered 15-years long-term supply contracts with a capacity that could result in transit flows magnitudes over the present export from Danish North Sea. If constructed, Baltic Pipe would approximately double the current asset base value, which changes the ratio of CAPEX to OPEX discussed in the present memo.

[4] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2017.072.01.0029.01.ENG&toc=OJ:L:2017:072:TOC

On the cost side of tariff setting, the Danish government has announced in its Energy Strategy that Energinet's electricity and gas TSOs will have a new economic regulation. Hither-to, Energinet's regulation has been self-sustainable cost+ regulation with socio-economic criteria and without extracting rent from the users of the infrastructure.

The future regulation is expected to be revenue cap regulation as is the practice across Danish utility sectors with ex ante efficiency requirements, defined quality targets and revised investment decision procedures. The political mandate for the revised economic regulation stipulates that socio-economic investment criteria and restrictions on extracting profit from the transmission systems are maintained.

In a highly dynamic market situation, it is difficult to show the impact of the proposed tariff methodology as a static picture in a single year. Rather, the methodology should be reviewed over a longer period during which cause and effect may vary. Shippers are encouraged to consider the medium to long term effects, when assessing the proposed methodology's application.

Experience shows that both Energinet and DERA place much significance in the viewpoints and ideas of the shippers when assessing the tariff methodology. Therefore, we hope once again that you will all actively participate in the process towards a revised tariff method.

## 2.2 Consultation process

Transportation tariffs in level and design has direct impact on the use of the transmission system and on the Shippers actively operating in the system. Consequently, Energinet has aimed to have a close dialogue with present and future shippers in developing the methodology. For that reason Energinet have facilitated a number of User Groups and have established a Shipper Taskforce.[5] Energinet is grateful for the active and constructive approach of the participating shippers.

The present version of the Method Application contains methodologies that have been presented and discussed with the Shippers during the drafting phase. However, the full methodology including the cost allocation principle (uniform capacity tariffs) is presented in a coherent form for the first time in this version.

Energinet will also carry out a number of consultations up until the submission to Danish Energy Regulatory Authority (DERA) for approval and to the Agency for the Cooperation of Energy Regulators (ACER) for analysis. The public consultation and approval process is divided into the following stages:

| | | |
|---|---|---|
| i) | Shipper Taskforce attendees of the draft methodology, which is concluded | |
| ii) | Pre-consultation process (1 month duration), also concluded: | 2 July – 1 August 2018 |
| **iii)** | **Final consultation (2 months):** | **31 August – 1 November 2018** |
| iv) | Submission to DERA (5 months approval period): | 8 November2018 |
| v) | Coming into force: | from 1 October 2019 |

The timing of the stages in the public consultation process has been calculated backwards from the date of coming into force and the subsequent need to calculate and publish transportation tariffs to support long-term capacity auctioning on the PRISMA platform from July 2019.

[5] Working group consisting of 9 shippers.

TAR NC stipulates a new procedure for the approval process of the tariff methodology, which shippers and other stakeholders are kindly asked to take note of. In accordance with TAR NC, the consultation documents is forwarded both to DERA as part of the basis for approval and to ACER for analysis to ensure that the network code is implemented across the Union in the most effective way.

ACER shall analyse the following aspects of the consultation document:
(a) whether all the information referred to in TAR NC Article 26(1) has been published;
(b) whether the elements consulted on in accordance with Article 26 comply with the following requirements:
    (1) whether the proposed reference price methodology complies with the requirements set out in Article 7;
    (2) whether the criteria for setting commodity-based transmission tariffs as set out in Article 4(3) are met;
    (3) whether the criteria for setting non-transmission tariffs as set out in Article 4(4) are met.

Within two months following the end of the consultation referred to in paragraph 1, ACER shall publish and send to the national regulatory authority or transmission system operator, depending on which entity published the consultation document, and the Commission the conclusion of its analysis in accordance with paragraph 2 in English. ACER shall preserve the confidentiality of any commercially sensitive information.

The present Method Application is to be seen as a description of the overall thoughts and concepts for the future tariff methodology in the Danish transmission system. The coming tariff methodology has a dual purpose of introducing new cost allocation principles and to demonstrate compliance with the network code on rules regarding harmonised transmission tariff structures for gas (the TAR NC). Therefore, it will contain a justification for elements that are already in force in the transmission tariff methodology, as well as principal revisions.

### 2.2.1 Pre-consultation

The Method Application was presented for a public pre-consultation in writing among shippers and other stakeholders in the Danish gas transmission system during the period 2nd July to 1st August 2018.

The purpose of the public pre-consultation was to allow participants a last opportunity to propose material changes to the methodology as they see fit. Since the Method Application is now put forward in the Final Consultation, the text itself cannot be amended.

### 2.2.2 Final Consultation

On 28 May 2028 DERA's Secretariat (since 1st July *Danish Utility Regulator*) decided that Energinet (as acting gas TSO) shall:

- Conduct the Final Consultation in accordance with TAR NC Article 26 paragraph 1 including assessment of the cost allocation methodology (Article 5).
- Forward the Final Consultation documents in their final form to ACER in accordance with Article 27.

In accordance with the Secretariats decision, Energinet is conducting the Final Consultation from 31st August to 1st November 2018. The Method Application and response from the participating stakeholders is submitted on 8th November 2018 to DERA and to ACER. Information marked as confidential and/or commercially sensitive will not be shared with the public.

Energinet's Final Consultation Document is the document submitted to ACER for analysis in accordance with Article 27 paragraph 1 and 2 as well as the document that DERA shall take and publish a motivated decision on.

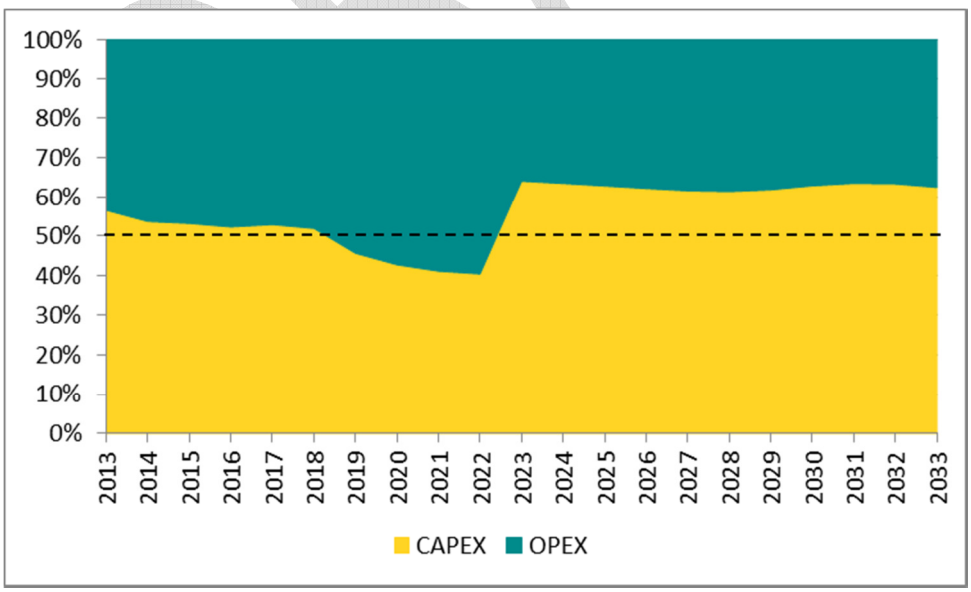
Energinet is requested to stress towards market actors that *DERA (Secretariat) will not conduct an independent consultation of the reference price methodology*. Consequently, it will not be possible to amend the Method Application once the Final Consultation process is initiated. Reponses from participants in the Final Consultation will be separately included to the Final Consultation documents to support DERA's approval and ACER's analysis.

# 3. Requirements of the TAR NC

### 3.1.1 Capacity-/Commodity-split (Article 4)

Energinet proposes to maintain the current capacity-/commodity-split, according to which the capacity tariffs are calculated to recover capital expenditures (CAPEX), and the commodity tariffs recovers operational expenditures (OPEX). According to this principle the current 2017/18 cost base results in a capacity-/commodity-split of 52%/48%. The principle also implies that the split will be dynamic over time as the ratio between CAPEX and OPEX changes. In case that Baltic Pipe is constructed the marginal added CAPEX are increased more than OPEX, leading to a higher capacity share in recovering total expenditures (TOTEX).

*Figure 1*: CAPEX-/OPEX-split, 2013-2032




*Note: The indicative transmission tariffs are shown to illustrate the impact of different method changes. These indicative tariffs are non-binding. Likewise, the indicative tariffs are based on future costs and expected use of the transmission system that may be revised prior to new transportation tariffs coming in force from October 2019.*

The justifications for carrying the principle forward under the revised tariff methodology are:

- No scarcity of capacity in the current market:
    - The Danish transmission system is designed to, and capable of, transporting larger volumes than is utilised today. Without congestion, the emphasis on capacity tariffs to signal scarcity and/or cost of incremental capacity) is hardly justified.
    - Since capacity auctions at Interconnection Points were introduced in year 2013, a total of 75 capacity auctions have resulted in a combined auction premium of less than 1 MDKK. The lack of auction premiums in capacity auctions in the period signals that existing system capacity is ample to serve demand in the present marked.
- Preferred and recognised by the shippers:
    - The principle has been in place since October 2012 and has been widely accepted as a transparent and favoured approach by shippers in repeated user consultations. This is particularly important when considering the shippers having entered long-term transportation contracts under the current tariff methodology with an expectation that the principle is carried forward in future method revisions.
    - Similarly, Energinets investment decisions are based on the present capacity/commodity split that gives a specific risk sharing between existing and new users as well as with the system owner.
- Cost reflectiveness:
    - It reflects the underlying cost structures, and is not based on an arbitrary split as was the case prior to implementing the principle, when the capacity/commodity split was defined ex ante as 75%:25%.
    - CAPEX are largely sunk once investments in infrastructure are implemented. Further, CAPEX are fixed and changes according to fluctuations in the capital market (lending rates) and accountancy principles (depreciation periods and profiles) much more than to changes in use.
    - OPEX are to a higher degree variable on system utilisation in particular in case of significant long-term changes. As example, fuel costs on compressor stations (part of OPEX and highly variable) are directly related to flow pattern.
- Increases benefits of existing infrastructure:
    - System users, namely shippers, pay the full TOTEX of sustaining the infrastructure even when it is not fully utilised. Unused infrastructure constitutes an opportunity cost and ultimately a constraint on the gas market, if capacity tariffs are higher than marginal value. The principle results in lower capacity tariffs than other principles examined, which allocates a greater share of TOTEX to the capacity tariff cost base. The barrier to entry is lowered, which theoretically facilitates a contestable market with increased competition. Further, lower capacity tariffs facilitate more flexible use of the system encouraging emergence of biogas and interaction with fluctuating wind power generation.
    - The Danish gas market is under pressure from renewable energy, energy taxation and increased energy efficiency on the demand side. Lowering capacity tariffs allows the gas market to exploit the inherent system benefits relative to competing energy sources.
    - Transit services for shippers operating in adjacent markets (North Sea upstream and Sweden, Germany and potentially Poland downstream) are benefiting from lower barriers to entry. In particular in the captured Swedish end-market that limited flexibility instruments in their transmission system. Transit flows carry a net contribution to sustain costs of operating the transmission system and aids in

lowering the unit cost of transportation for all users domestically and internationally.

None of the arguments stated above are impervious to changes in market conditions or regulation. If demand for capacity increases to a degree that bottlenecks materialises, it would be reasonable to signal the cost of incremental capacity through the capacity tariffs.

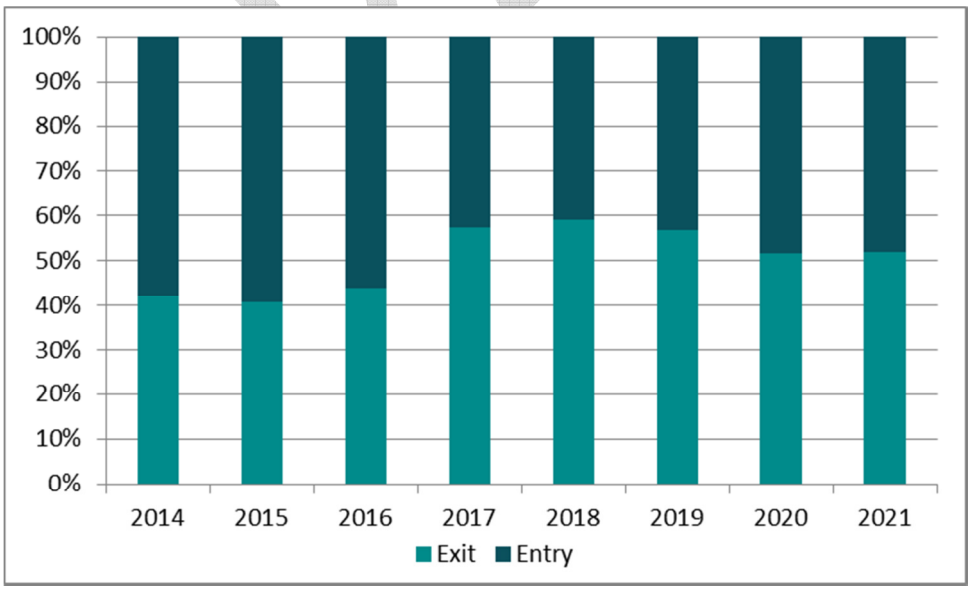
As part of article 4, transmission service revenue should be generated primarily from capacity tariffs. Since that will be challenging do to the CAPEX-/OPEX-split in the period 2020-2022, as shown in Figure 1. For that reason Energinet propose to implement a cap on the costs covered by the capacity tariff, so that no more than 40% of the cost base could be covered by commodity tariffs.

### 3.2 Entry-/Exit-split (Article 30.1.b.v.2)

The entry-/exit-split define the share of capacity revenues stemming from sales of entry capacity relative to exit capacity. TAR NC states that "Where nothing else is indicated, a 50/50 ex ante entry-/exit-split is used." In the view of Energinet this is relevant in the case of CWD, but notes that there is no entry/exit-split being used in the other cost allocation methodologies.

Entry- exit tariffs in the Danish transmission system has always been calculated as ex-post ratio determined by their relative share of combined reservations. Within a uniform cost allocation methodology, an ex post entry-/exit-split results in a single capacity tariff same for all points independent of direction. Uniform tariffs with an ex ante split would result in a different set of tariffs for entry and exit capacity respectively.

*Figure 2*: Entry-/exit-split 2014 to 2021 based on historically realised and from year 2019 expected capacity reservations




*Note: The indicative transmission tariffs are shown to illustrate the impact of different method changes. These indicative tariffs are non-binding. Likewise, the indicative tariffs are based on future costs and expected use of the transmission system that may be revised prior to new transportation tariffs coming in force from October 2019.*

The ex post ratio is not stable over time, as shown on the figure above. In 2014 to 2016 entry capacity reservations exceeded combined reserved exit capacities, while reverting from 2017 to a higher or equal share of combined exit capacity reservations.

Long-term entry Ellund capacity contracts from 2012 and forward, a high share of transit flows on the route Nybro-Ellund (North Sea to Germany) and wider use of short-term capacity products with lower multiplier and seasonal profile, all contribute to change the ratio over time. During Tyra field renovations demand for entry capacity in Nybro Entry is expected to be reduced.

With the development shown in the figure above, an ex-ante split would result in entry tariffs being lower than exit tariffs until year 2017 and exit tariffs being cheaper in the following period.

In the opinion of Energinet, the ex post split contains advantages that exceed those of the ex-ante split, while it is not a prerequisite when the CWD methodology is not applied:

- Differences from stemming from deviations between budgeted and realised sales of capacity cancels each other out when deviations in entry sales opposes deviations in exit sales. That will reduce over and under recovery of revenues from capacity reservations.
- It provides a simplified price signal with one and same price in all points if combined with uniform cost allocation.

An ex ante split could be used to transfer cost allocated between entry and exit points. An extreme case could be to allocate all costs to exit capacity, thereby setting entry tariffs to zero. Individual shippers have advocated changing the cost allocation to transfer costs during the Tyra renovation period, when import through Ellund Entry point will dominate supplies to the Danish and Swedish gas markets. In view of Energinet, there are the following arguments against such methods to influence the tariffs:

- The entry-exit tariff model is based on (independent) pricing of both entry and exit capacity. Removing e.g. the entry tariff would distort the price signal at a time when entry capacity is temporarily limited.
- Few objective factors in the Danish transmission system could be used to differentiate the cost allocation. This is primarily arguments for tariff differentiation based on cost of expanding the Ellund Entry capacity from year 2012. In this case, incremental costs were allocated to points that benefited from the expansion to safeguard against cross-subsidisation from users of the Nybro Entry point. It allocated cost to the shippers and consumers that signalled the need for incremental capacity. During the Tyra renovation period, Ellund Entry is no longer in direct competition with Nybro, and if Baltic Pipe is constructed it is expected to reduce costs in all points socialising costs and benefits on all system points.
- Auctioning of bundled capacity at border points results in the more fair revenue division between participating TSOs. This is not an argument to safeguard revenues, but to ensure that revenues are shared in a manner that contributes to recover costs of cross-border capacity in both adjacent systems.
- At the same time, it is noted that Energinet is maturing the investment decision on Baltic Pipe based on Open Season long-term sales of capacity in the route. Major changes to cost allocation between entry and exit would have significant impact on the value of Open Season contracts and the cost division implied in the current business model.

Based on the dialogue with shippers in the Tariff Working Group, it is the impression that shippers in majority prefer the ex post allocation method. Please do not hesitate to state your preferences in the hearing process for the tariff methodology, if your viewpoints differ from the arguments stated above. Neither the ex-ante nor the ex post split are required to arrive at uniform tariffs, however any split different from a 50:50 split or the proposed ex post split

should be substantiated with objective arguments that it is cost-reflective and non-discriminating.

### 3.3 Reference Price Methodology (Article 7)

In autumn 2016, a "principle paper" on the tariffs under a Baltic Pipe project was published. A solution could be to apply for the same tariff methodology before the Baltic Pipe comes online, a uniform/postage stamp principle with ex-post entry-/exit-split.

Since the capacity weighted distance reference price methodology is the default methodology, this will also be calculated. For comparison reason the current methodology will also be calculated with the same input variables.

See a deeper description in section 4.2 Comparing uniform capacity tariffs with capacity weighted distance on their effect on competition and transparency

### 3.4 Storage discount (Article 9)

Energinet wishes to continue with the current storage discount of 100 % for both capacity and commodity tariffs. For simplicity the storage points is therefore not taken in to account in the following calculations. It will only in the CWD method cause minor differences in the tariffs due to the weights in the calculations.

### 3.5 Multipliers and seasonal factors (Article 13)

Energinet recommends maintaining the current multipliers for allocated capacity up to and including one year duration and to introduce a new long term multiplier for capacity allocation with duration equal to or exceeding 5 (five) years.

Energinet seeks mandate to set a stepwise increasing long-term multiplier within the range of 0.90 – 0.95 depending on duration (length) of bookings.

The rationale for the multiplier is that shippers with long term capacity bookings incur a greater risk of unused surplus capacity while significantly contributing to providing predictability and financial stability in the tariff structure. The tariff multiplier reflects additional risk on behalf of the individual shipper and overall benefits relative to shorter term bookings.

The multiplier shall be applied to capacity bookings equal to or exceeding 5 years including allocated capacity in Open Season 2017 for the Baltic Pipe project.

For shippers with capacity from the Open Season 2010 in Ellund Entry, a possibility to extend capacity bookings for one year in order to obtain the long term multiplier will be introduced. The justification is that those shippers would otherwise not be able to obtain the long term multiplier from the introduction in 2019.

## 3.6 Cost base and forecasted capacities and flows and resulting tariffs

### 3.6.1 Cost base and over-/under-recovery

*Table 1 Cost base assumptions 2020*

| | mDKK |
|---|---|
| CAPEX | 202.1 |
| Ellund-Egtved share | 43.4 |
| *Compressor in mn. DKK* | *20.9* |
| *Pipeline in mn. DKK* | *22.4* |
| OPEX | 250.4 |
| **Total cost base** | **452.5** |
| **Emergency Ellund-Egtved CAPEX share (1/3)** | **14.5** |
| **Total cost base used for tariff calculation** | **438.0** |
| | |
| **Capacity cost base (60%)** | **262.8** |
| **Commodity cost base (40%)** | **175.2** |

*Note: The indicative transmission tariffs are shown to illustrate the impact of different method changes. These indicative tariffs are non-binding. Likewise, the indicative tariffs are based on future costs and expected use of the transmission system that may be revised prior to new transportation tariffs coming in force from October 2019.*

In the Tyra shutdown scenario, Energinet furthermore expects an extra fuel cost in relation to the compressor of approximately 19 mDKK, which together with other minor costs.
In the tariff methodology 1/3 of the Ellund-Egtved CAPEX is allocated to the emergency tariff and therefor taken out of the cost base.

In the calculations there are assumed no under or over recovery.

### 3.6.2 Forecasted capacities and flows

As sensitivity the calculations in the following will be based on two sets of forecasted capacities and flows.

*Table 2 Forecasted capacities and flows 2020*

| **Flow in GWh** | *2020* |
|---|---|
| Denmark | 27,332 |
| Sweden | 10,890 |
| Export Germany | 0 |
| Total | 38,222 |

| **Capacity in kWh/h/y** | *2020* |
|---|---|
| Exit DK | 3,458,333 |
| Exit Dragør | 1,425,000 |
| Exit Ellund | 1* |
| Exit capacity | 4,883,333 |
| Entry Nybro | 260,000 |
| Entry Ellund | 4,666,667 |
| Entry BNG | 320,000 |
| Entry capacity | 5,246,667 |

*In order for the CWD method to function, all forecasted capacities need to be >0.

*Note: The indicative transmission tariffs are shown to illustrate the impact of different method changes. These indicative tariffs are non-binding. Likewise, the indicative tariffs are based on future costs and expected use of the transmission system that may be revised prior to new transportation tariffs coming in force from October 2019.*

### 3.6.3 Resulting tariffs

The calculation of the shown tariffs is available in the excel-sheet Tariff_calculations_for_STF.xlsx.

*Figure 3:* Simplified system overview (used for CWD)

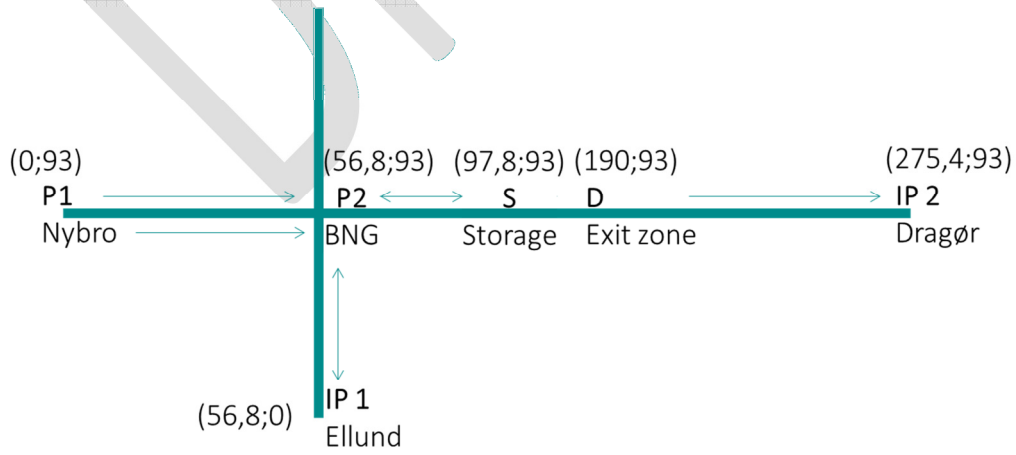


*Table 3*: Resulting tariffs 2019/2020

| **Capacity tariffs [DKK/kWh/h/y]** | | **CWD** | **Uniform tariff** | **Current method** |
|---|---|---|---|---|
| *Exit DK* | *D* | 22.99 | 25.94 | 27.58 |
| *Exit Dragør* | *IP2* | 36.41 | 25.94 | 27.58 |
| *Exit Ellund* | *IP1* | 20.86 | 25.94 | 23.09 |
| | | | | |
| *Entry Nybro* | *P1* | 21.27 | 25.94 | 23.09 |
| *Entry Ellund* | *IP1* | 26.02 | 25.94 | 24.58 |
| *Entry BNG* | *P2* | 13.82 | 25.94 | 23.09 |
| | | | | |
| **Commodity tariff [DKK/kWh]** | | 0.00458 | 0.00458 | 0.00458 |

*Note: The indicative transmission tariffs are shown to illustrate the impact of different method changes. These indicative tariffs are non-binding. Likewise, the indicative tariffs are based on future costs and expected use of the transmission system that may be revised prior to new transportation tariffs coming in force from October 2019.*

### 3.7 Results on cost allocation assessments (Article 5)

The present section has been added to the Final Consultation document.

The Danish Utility Regulator has decided that Energinet shall perform the following cost allocation assessments as part of the final consultation. The cost allocation assessments indicate the degree of cross-subsidisation between intra-system and cross-system network use based on the proposed reference price methodology (uniform capacity tariffs) in comparison with presently in force method differentiated capacity tariffs and with the methodology described in the TAR NC (capacity weighted distance reference price methodology).

The method of the cost allocation assessment is described in greater detail in the TAR NC Article 5. The results, the components and the details of the components for the cost allocation assessments relating to the transmission services revenue to be recovered by capacity-based transmission tariffs and commodity-based transmission tariffs respectively are presented in Table 4.

The cost allocation relating to capacity-based transmission tariffs is based on the cost drivers of forecasted contracted capacity and distance; hence, the capacity weighted average distances are used. The cost allocation assessment relating to commodity-based transmission tariffs is based on the cost drivers of forecasted amount of gas flows and distance; hence, the commodity weighted average distances are used.

The results of the cost allocation assessment relating to commodity-based transmission tariffs are constant across the choice of reference price methodology, as the input and approach to calculating commodity tariffs is the same across the three cost allocation methodologies.

*Table 4*: Cost allocation assessment 2019/2020

| Results on cost allocation assessment | CWD | Uniform capacity tariffs | (Current) Differentiated tariffs |
|---|---|---|---|
| ***Capacity*** | | | |
| Ratio intra | 82,64 | 88,70 | 88,11 |
| *Revenue intra (mEUR)* | *195,65* | *210,02* | *208,61* |
| *Driver intra* | *2.367.608* | *2.367.608* | *2.367.608* |
| Ratio cross | 101,68 | 79,94 | 82,06 |
| *Revenue cross (mEUR)* | *67,18* | *52,81* | *54,21* |
| *Driver cross* | *660.656* | *660.656* | *660.656* |
| **Comparison Index** | **0,21** | **0,10** | **0,07** |
| | | | |
| ***Commodity*** | | | |
| Ratio intra | 10,20 | 10,20 | 10,20 |
| *Revenue intra (mEUR)* | *125,30* | *125,30* | *125,30* |
| *Driver intra* | *12.279.829* | *12.279.829* | *12.279.829* |
| Ratio cross | 12,16 | 12,16 | 12,16 |
| *Revenue cross (mEUR)* | *49,92* | *49,92* | *49,92* |
| *Driver cross* | *4.105.059* | *4.105.059* | *4.105.059* |
| **Comparison Index** | **0,18** | **0,18** | **0,18** |

*Note: The cost allocation assessment is based on the indicative transmission tariffs presented in Table 3. These indicative tariffs are non-binding. Likewise, the indicative tariffs are based on future costs and expected use of the transmission system that may be revised prior to new transportation tariffs coming in force from October 2019. Any changes to the tariffs might also change the cost allocation assessment.*

The CWD methodology yields the greater comparison index (0,21) compared to uniform capacity tariffs (0,10) and differentiated capacity tariffs (0,07).

The comparison index is rather sensitive to the dynamic changes in the Danish gas transmission system during the coming years. In the table below, Energinet has calculated the comparison index also for the previous gas year (2017/2018) and for the sample year (2024/25) if Baltic Pipe is realised.

*Table 5*: Change in comparison index over time

| Comparison Index for capacity tariffs | CWD method | Uniform method | Current method |
|---|---|---|---|
| *2017/2018* | *0,12* | *0,09* | *0,13* |
| *2019/2020* | *0,21* | *0,10* | *0,07* |
| *2024/2025* | *0,01* | *0,06* | *0,13* |

Note: The calculation of comparison index in year 2024/2025 is based on a scenario in which Baltic Pipe is realised and based on assumed location on entry and exit points related to said project. The resulting index is likely to change when calculated on realised CAPEX and final choice on routing and point locations.

Based on the above-standing indices, Energinet concludes that uniform capacity tariffs results in a lower degree of cross-subsidisation between intra-system and cross-system network compared to CWD and that the cost allocation methodology also is more resilient to changes in the

cost base and flow patterns once Tyra gas field renovation completed or if Baltic Pipe project is realised. It is also noted that the resulting index of uniform capacity tariffs (0,10 (10%) or smaller) does not exceed 10 percent, in which case and according to Article 5 (6) the national regulatory authority shall provide the justification for such results in the decision referred to in Article 27(4).

# 4. Choice of reference price methodology (uniform capacity tariffs)

As part of the maturation of the Baltic Pipe project, Energinet announced the intention to seek method approval for a socialized and uniform cost allocation methodology (uniform capacity tariffs, i.e. equalization, whereby the same reference price is applied to some or all points within a homogeneous group of points). Additionally, Energinet aims to extend the uniform cost allocation principle to new offshore infrastructure required to bring gas from the Norwegian offshore export system to the onshore system in the Ellund Entry Point creating a Danish tariff zone.

Both principles are intended to create the basis for an investment decision on the Baltic Pipe project with a fair and transparent cost allocation. The latter of the two new tariff principles (Danish tariff zone) will be subject to a separate method application submitted for regulatory approval once a firm investment decision on the Baltic Pipe project is reached.

The present chapter aims to provide the justification for the socialized and uniform cost allocation methodology.

The following chapter is structured around the following sections:
1. The legal basis for the choice of reference price methodology;
2. Comparison between the characteristics of uniform capacity tariffs and capacity weighted distance methodology as stipulated in the TAR NC;
3. The tariff principles in relation to Baltic Pipe project.

## 4.1 Legal basis for the reference price methodology

The reference price methodology (or cost allocation principle) is the cornerstone of any gas transmission tariff methodology, guiding how the allowed revenues for transmission services are allocated to various system points in the entry-exit model.

The main overall principles of reference price methodology are stated in Article 13 of Regulation (EC) No 715/2009. Tariffs, or the methodologies used to calculate them, shall be:

- *transparent*, take into account the need for system integrity and its improvement and reflect the actual costs incurred, whilst including an appropriate return on investments, and, where appropriate, taking account of the benchmarking of tariffs by the regulatory authorities.
- applied in a *non-discriminatory* manner and *set separately for every* entry *point* into or exit point out of the transmission system.
- *facilitate efficient gas trade and competition*, while at the same time *avoiding cross-subsidies* between network users and providing incentives for investment and maintaining or creating interoperability for transmission networks.

Further, according to TAR NC, the reference price methodology shall comply with the following requirements (Article 7):

(a) enabling network users to reproduce the calculation of reference prices and their accurate forecast;
(b) taking into account the actual costs incurred for the provision of transmission services considering the level of complexity of the transmission network;
(c) ensuring non-discrimination and prevent undue cross-subsidisation including by taking into account the cost allocation assessments set out in Article 5;
(d) ensuring that significant volume risk related particularly to transports across an entry-exit system is not assigned to final customers within that entry-exit system;
(e) ensuring that the resulting reference prices do not distort cross-border trade.

Article 6 of TAR NC additionally states that adjustments to the application of the reference price methodology to all entry and exit points may only be made to set a rebate to and from storage facilities or as a result of one or more of the following:

(a) benchmarking by the national regulatory authority, whereby reference prices at a given entry or exit point are adjusted so that the resulting values meet the competitive level of reference prices;
(b) equalization, whereby the same reference price is applied to some or all points within a homogeneous group of points;
(c) rescaling, whereby the reference prices at all entry or all exit points, or both, are adjusted either by multiplying their values by a constant or by adding to or subtracting from their values a constant.

### 4.1.1 TAR NC Capacity weighted distance reference price methodology

The default reference price methodology mentioned in the TAR NC is the "Capacity weighted distance reference price methodology", which aims to allocate the allowed revenue by taking into account the infrastructure asset base, the forecasted contracted capacity at entry and exit points (or a cluster of points), and the distance of the pipeline routes between an entry point and an exit point.

Other price methodologies can however be applied upon regulatory approval. Other methodologies shall according to the network code be compared to the results of the capacity weighted distance tariffs.

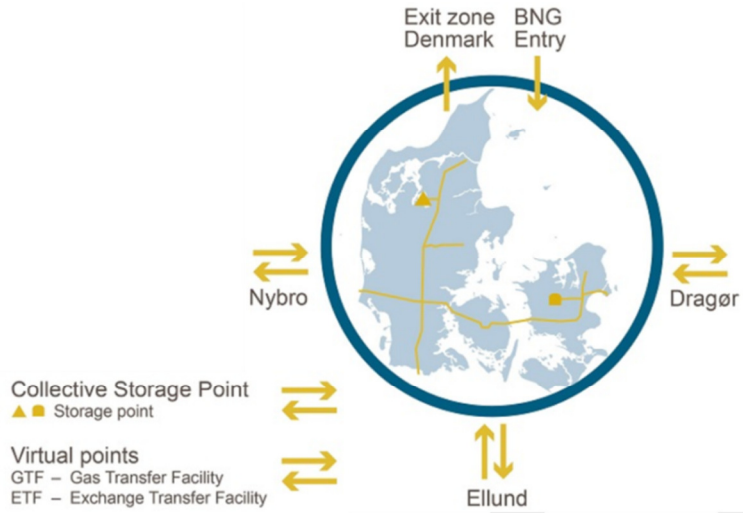
## 4.2 Comparing uniform capacity tariffs with capacity weighted distance on their effect on competition and transparency

### 4.2.1 Taking into account the actual costs incurred for the provision of transmission services considering the level of complexity of the transmission network

The Danish transmission system services a geographically, relatively small and homogeneous gas market – see the figure below. There are two main entry points competitively supplying the market (Nybro Entry and Ellund Entry) from domestic production in the Danish North Sea and imported gas from Germany respectively. In addition, bio natural gas (BNG Entry) is a virtual entry point for locally produced biogas that is still marginal in volume but rapidly growing. Dragør Entry Point from Sweden is not used today, due to the Swedish market being supplied from the Danish transmission system (Dragør Exit).

Offtake from the system is organised with three exit points to Sweden (aforementioned Dragør Exit), to Germany (Ellund Exit) and to the North Sea (Ellund Exit). The latter not being in demand from the shippers due to lack of end users in the North Sea. All offtake points towards direct consumers and distribution networks are clustered in the Exit zone Denmark.

*Figure 4*: The Danish market model




The system dimensioning is based on historically larger home market consumption and the need to evacuate larger surplus production from the North Sea than is currently produced. Therefore, there is significant over capacity in the system to service a declining production and consumption base, which will be utilised for transit from Norway to Poland, if the Baltic Pipe project is realised.

In view of Energinet, there is limited reasoning in allocating historical asset costs to individual users and points, which is the reasoning behind the capacity weighted distance methodology. Along the same lines, there is a need to maintain equilibrium of costs to enter the system from competing entry points to strengthen competition and to avoid distorting cross-border trade. Uniform capacity tariffs appear to provide the more cost-reflective prices compared to the capacity weighted distance methodology.

### 4.2.2 Facilitate efficient gas trade and competition

Further, tariffs calculated according to the capacity weighted distance methodology results in rather extreme price differences in the system – see the table below. Such tariff differentiation (75% difference between lowest and highest tariffs) would adversely impact on competition between points and routes in the Danish transmission system.

*Table 6*: Resulting tariffs 2019/2020 and variation (spread) from average (uniform) tariffs

| **Capacity tariffs [DKK/kWh/h/y]** | | **CWD** | | **Uniform tariff** | **Current Methodology** | |
|---|---|---|---|---|---|---|
| | | Tariff | Spread | | Tariff | Spread |
| *Exit DK* | *D* | 22.99 | 89% | 25,94 | 27.58 | 106% |
| *Exit Dragør* | *IP2* | 36.41 | 140% | 25.94 | 27.58 | 106% |
| *Exit Ellund* | *IP1* | 20.86 | 80% | 25.94 | 23.09 | 89% |
| | | | | | | |
| *Entry Nybro* | *P1* | 21.27 | 82% | 25.94 | 23.09 | 89% |
| *Entry Ellund* | *IP1* | 26.02 | 100% | 25.94 | 24.58 | 95% |
| *Entry BNG* | *P2* | 13.82 | 53% | 25.94 | 23.09 | 89% |
| | | | | | | |
| **Commodity tariff [DKK/kWh]** | | 0.00458 | | 0.00458 | 0.00458 | |

*Note: The indicative transmission tariffs are shown to illustrate the impact of different method changes. These indicative tariffs are non-binding. Likewise, the indicative tariffs are based on future costs and expected use of the transmission system that may be revised prior to new transportation tariffs coming in force from October 2019.*

*Table 7*: Tariffs for 2018/2019 in force as of 1st October 2018[6]

| | | | |
|---|---|---|---|
| Firm capacity charge/reservation prices (annual) | Entry capacity, DKK/kWh/hour/year | Ellund<br>Nybro, BNG, Dragør | 14.36<br>12.32 |
| | Exit capacity, DKK/kWh/hour/year | Ellund<br>Exit zone, Dragør | 12.32<br>16.51 |
| Commodity charge | DKK/kWh | | 0.00460 |

### 4.2.3 Ensuring non-discrimination and prevent undue cross-subsidisation

Uniform capacity tariffs were in force from year 2006 until October 2012. Since that date, differentiated capacity tariffs are applied to allocate the cost of expanding import capacity from Germany , Ellund Entry to individual points based on a utility argument. Differentiated tariffs were introduced to safeguard against cross-subsidisation between entry points.

However, in coming years, the Tyra gas field renovation curbs supplies from the North Sea and supplies to the Danish-Swedish gas markets will come predominantly from imported gas through Ellund Entry. Consequently, the cross-subsidisation argument is no longer a valid reasoning for differentiated tariffs.

Uniform capacity tariffs inherently allocate costs (or allowed revenues) evenly among system points based on combined total capacity reservations. This is a more robust cost allocation methodology as the Danish transmission system stands before a period of highly dynamic changes in flow patterns. In coming years, it the Tyra field renovation that delimits capacity demand in Nybro Entry. In medium to long term, it is the possible realisation of the Baltic Pipe project that results in new large transit volumes.

Additionally, having the same entry tariffs across the system arguably is the better safeguard to foster competition from different supplies sources.

[6] https://en.energinet.dk/Gas/Tariffs-and-Fees

### 4.2.4 Transparency and enabling network users to reproduce the calculation of reference prices

Uniform capacity tariffs provides the more transparent price signal compared to the capacity weighted distance methodology. It enables shippers to reproduce the tariff calculation based on a split on the CAPEX/OPEX cost base and total expected capacity reservations.

In view of Energinet, alternative cost allocation methodologies depends on a number of additional methodological definitions, in particular the placement of virtual delivery points within the system (Danish Exit zone and BNG), as well as calculating the weighted average distance dynamically as infrastructure and flow patterns change over time.

### 4.2.5 Non-transmission services (emergency supply services)

Energinet is in charge of providing emergency supply services to national gas consumers as decided by the Competent Authority (Danish Energy Agency) and in accordance with Regulation (EU) 2017/1938 concerning measures to safeguard the security of gas supply.[7]

The allowed revenue of the emergency supply services are calculated to recover the cost of purchasing emergency supply instruments from underground storages, capacity rights in adjacent systems to Nybro (North Sea upstream infrastructure) and interruptible consumers. Additionally, 1/3 of CAPEX relating to Ellund capacity expansion (approx. 14 million DKK in 2019) is allocated to the emergency supply cost base in accordance with the Danish Utility Regulator's decision on 21 June 2016 (16/02068).[8] The abovementioned share of CAPEX related to Ellund capacity expansion of the allowed revenues of the transmission system is 3.7% in 2019.

The cost base and resulting tariffs of the emergency supply services are separated from the transmission tariffs and as such not regulated by the TAR NC. The transmission services and emergency supply services have

The methodology for calculating the cost of emergency supply services is unchanged by the present method application.

## 4.3 Baltic Pipe, Energinets tariff principles and DERA's Opinion

Uniform capacity tariffs are the basis for the business case evaluating the socio-economic cost-benefits of the Baltic project as well as the basic risk sharing arrangement between domestic and transit users of the Danish transmission system.

Since the Baltic Pipe project increases volumes through the Danish transmission system than incremental costs, it is expected to lower the average cost of transportation – see the figure below. Furthermore, participants in the Open Season 2017 are bound contractually to a significant capacity reservation for 15 years after the project is realised (expected to be in operation from October 2022).

Uniform capacity tariffs are proposed as a reasonable cost and risk sharing instrument safeguarding participants in the Open Season against tariff pancaking. In the view of Energinet,

7 Regulation (EU) 2017/1938 of the European Parliament and of the Council of 25 October 2017 concerning measures to safeguard the security of gas supply and repealing Regulation (EU) No 994/2010: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2017.280.01.0001.01.ENG&toc=OJ:L:2017:280:TOC

8 http://energitilsynet.dk/gas/afgoerelser/tilsynsafgoerelser/2016/energinetdk-allokeringsmetode-for-ny-infrastruktur-i-tarifferne-gas/

uniform capacity tariff methodology is a sound and robust principle that can be extended beyond the realisation of Baltic Pipe.

Consequently, the principles have been subject to a public hearing with shippers in the Autumn of 2016 receiving the acceptance of participating shippers and then submitted to the Danish Energy Regulatory Authority (DERA) requesting a non-binding Opinion to be released as comfort to the participants in the Open Season 2017. Energinet's tariff principle paper with a justification based on socio-economics can be found here:
http://energitilsynet.dk/fileadmin/Filer/Hoeringer/Gas/2016/For_Public_Consultation-_Tariff_principles_and_market_design.pdf

DERA was informed about the principles at a Board Meeting on 31 January 2017, and the Authority consequently released an opinion in July 2017:
https://en.energinet.dk/-/media/Energinet/Gas-DGK/Dokumenter/Baltic-Pipe/Open-Season-2017/Opinion-on-Principles-for-market-zone-and-tariffsikke-tjekket5039289docx.pdf?la=en

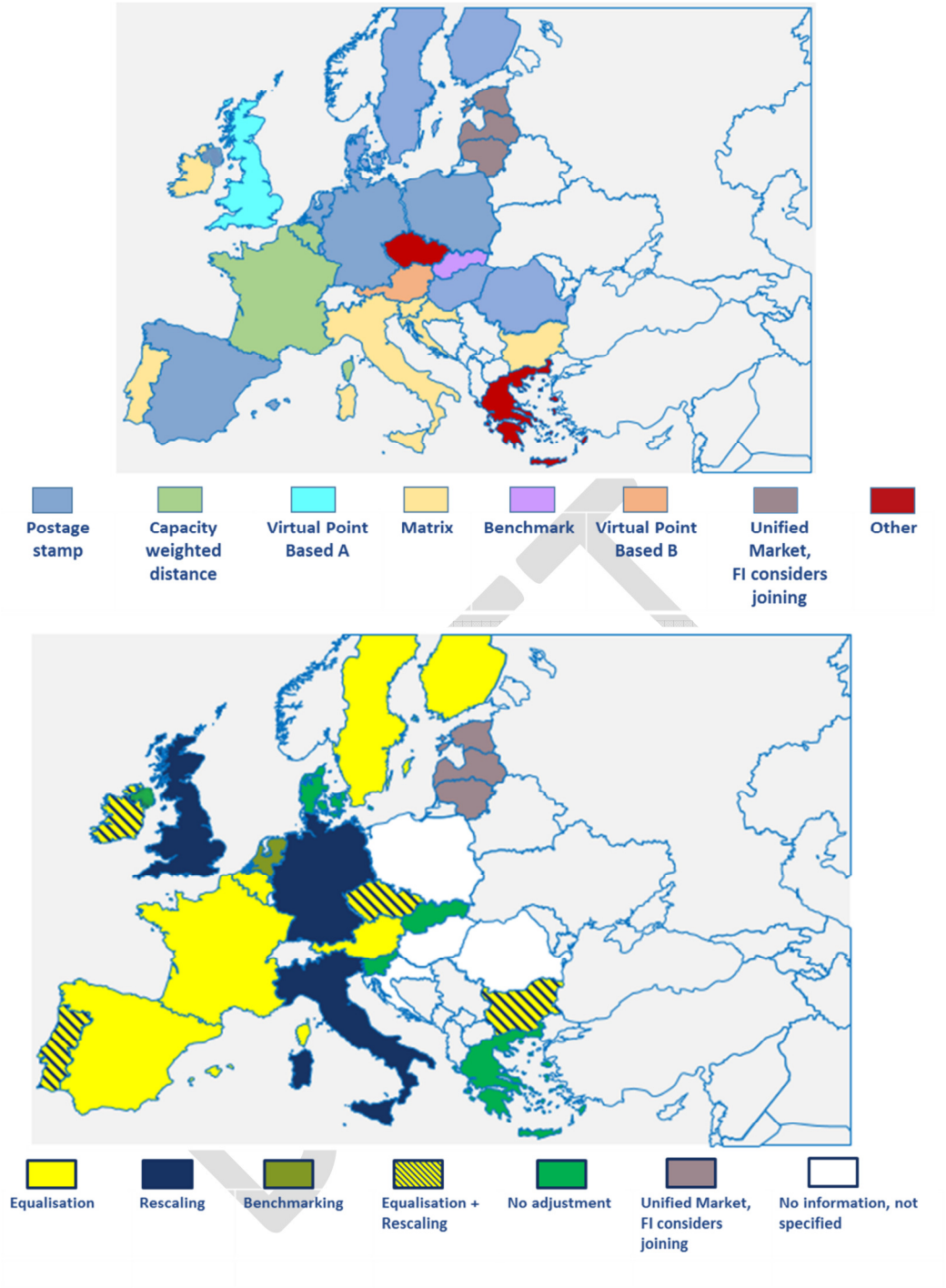
The Opinion of DERA is not a binding approval based on the formal process for tariff method applications. It is made solely on the request of Energinet, and is conditional upon a formal method application/approval of the present method application.

### 4.4 TAR NC implementation in adjacent systems

TAR NC is gradually implemented in Member States, and the full network code comes into force only on 31st May 2019. Energinet notes that while CWD is the only cost allocation methodology described in TAR NC, the majority of transmission systems today have different methodologies applied. More transmission systems have postage stamp cost allocation compared to any other methodology.

The map diagrams below illustrate the tariff methodologies applied today across Member States.

*Figure 5 Tariff methodology applications in Member States, 2018 (ENTSOG)*



# APPENDIX

As stated in article 26 a periodic consultation should be carried out, by either the NRA or TSO. DERA has decided that this should be done by Energinet. The table below is an overview of all the information listed in article 26 that should be in the consultation.

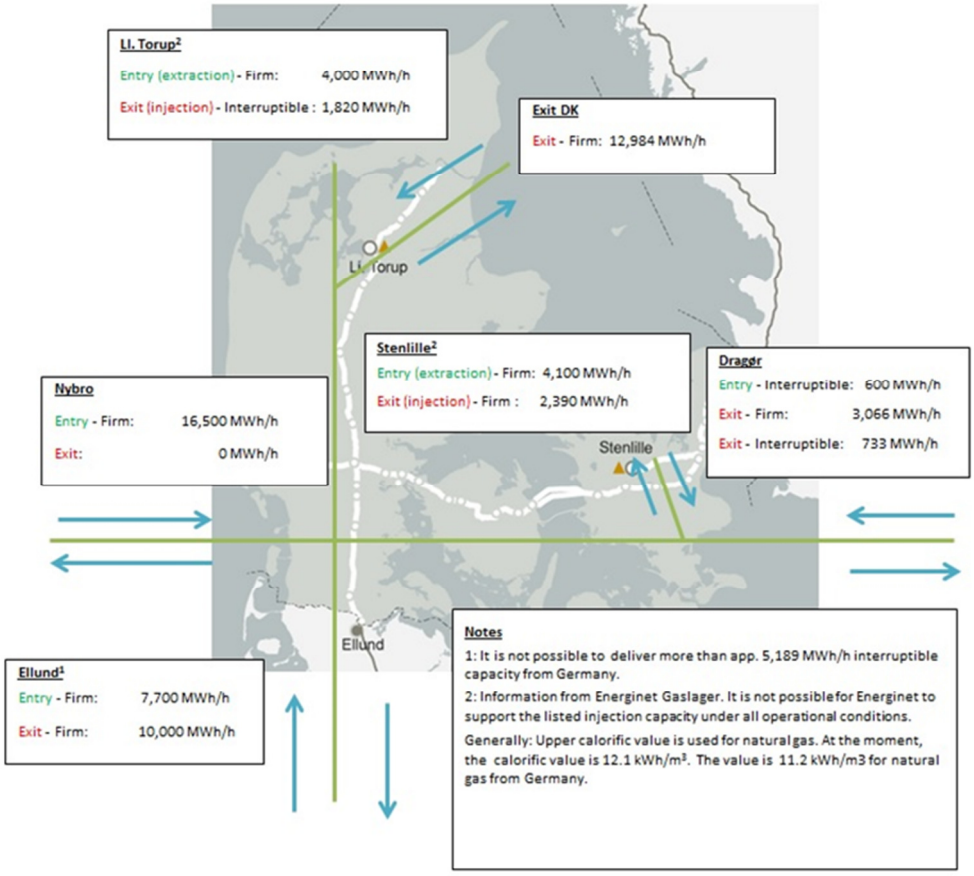
*Table 8*: Consultation table

| Article: | Description | Short consultation and reference: |
|---|---|---|
| 26(1)(a)<br>(30(1)(a)) | (i) technical capacity at entry and exit points and associated assumptions;<br>(ii) forecasted contracted capacity at entry and exit points and associated assumptions;<br>(iii) the quantity and the direction of the gas flow for entry and exit points and associated assumptions, such as demand and supply scenarios for the gas flow under peak conditions;<br>(iv) the structural representation of the transmission network with an appropriate level of detail;<br>(v) additional technical information about the transmission network, such as the length and the diameter of pipelines and the power of compressor stations. | (i) See Appendix 1 - Figure 6: Technical capacity<br>(ii) See Table 2 Forecasted capacities and flows 2020<br>(iii) See Appendix 2 - Figure 7: Quantity and direction of gas flows<br>(iv) Appendix 3 - Figure 8: *Structural* representation of the transmission network<br>(v) See Appendix 3 - Figure 8: *Structural* representation of the transmission network<br>Information on the Ellund-Egtved compressor station: |
| 26(1)(a)(i) | 1. the justification of the parameters used that are related to the technical characteristics of the system;<br>2. the corresponding information on the respective values of such parameters and the assumptions applied. | 1. N/A<br>2. N/A |
| 26(1)(a)(ii) | the value of the proposed adjustments for capacity-based transmission tariffs pursuant to Article 9; | See Appendix 4 – *Article 9* |
| 26(1)(a)(iii) | the indicative reference prices subject to consultation; | See 3.6.3 Resulting tariffs |
| 26(1)(a)(iv) | the results, the components and the details of these components for the cost allocation assessments set out in Article 5; | See Appendix 5 - Figure 9: Placement of virtual points and 3.7 Results on |
| 26(1)(a)(v) | the assessment of the proposed reference price methodology in accordance with Article 7; | See Appendix 6 – Article 7 |

| | | |
|---|---|---|
| 26(1)(a)(vi) | where the proposed reference price methodology is other than the capacity weighted distance reference price methodology detailed in Article 8, its comparison against the latter accompanied by the information set out in point 26(a)(iii); | See 3.6.3 Resulting tariffs |
| 26(1)(b) (30(1)(b)(i)) | the allowed or target revenue, or both, of the transmission system operator; | See 3.6.1 Cost base and over-/under-recovery |
| 26(1)(b) (30(1)(b)(iv)) | the transmission services revenue; | See 3.6.1 Cost base and over-/under-recovery |
| 26(1)(b) (30(1)(b)(v)) | the following ratios for the revenue referred to in point (iv):<br>1. capacity-commodity split, meaning the breakdown between the revenue from capacity-based transmission tariffs and the revenue from commodity-based transmission tariffs;<br>2. entry-exit split, meaning the breakdown between the revenue from capacity-based transmission tariffs at all entry points and the revenue from capacity-based transmission tariffs at all exit points;<br>3. intra-system/cross-system split, meaning the breakdown between the revenue from intra-system network use at both entry points and exit points and the revenue from cross-system network use at both entry points and exit points calculated as set out in Article 5. | 1. See Appendix 7 - Table 9: Capacity-/commodity-split 2019/2020<br>2. See Appendix 8 - Table 10: Entry-/exit-split 2019/2020<br>3. See Appendix *9* - Table 11: Intra-system/cross-system split 2019/2020 |
| 26(1)(c)(i)(1) | where commodity-based transmission tariffs referred to in Article 4 (3) are proposed:<br>1. the manner in which they are set; | See 3.1.1 Capacity-/Commodity-split (Article 4) |
| 26(1)(c)(i)(2) | 2. the share of the allowed or target revenue forecasted to be recovered from such tariffs; | See 3.6.1 Cost base and over-/under-recovery |
| 26(1)(c)(i)(3) | 3. the indicative commodity-based transmission tariffs; | See 3.6.3 Resulting tariffs |
| 26(1)(c)(ii)(1) | where non-transmission services provided to network users are proposed:<br>1. the non-transmission service tariff methodology therefor; | See 4.2.5 Non-transmission services (emergency supply services) |

| | | |
|---|---|---|
| 26(1)(c)(ii)(2) | 2. the share of the allowed or target revenue forecasted to be recovered from such tariffs; | See 4.2.5 Non-transmission services (emergency supply services) |
| 26(1)(c)(ii)(3) | 3. the manner in which the associated non-transmission services revenue is reconciled as referred to in Article 17(3); | See 4.2.5 Non-transmission services (emergency supply services) |
| 26(1)(c)(ii)(4) | 4. the indicative non-transmission tariffs for non-transmission services provided to network users; | Not included in the present method application – see 4.2.5 Non-transmission services (emergency supply services) |
| 26(1)(d) (30(2)(a)(i)) | the difference in the level of transmission tariffs for the same type of transmission service applicable for the prevailing tariff period and for the tariff period for which the information is published; | See 4.2.2 Facilitate efficient gas trade and competition |
| 26(1)(d) (30(2)(a)(ii)) | the estimated difference in the level of transmission tariffs for the same type of transmission service applicable for the tariff period for which the information is published and for each tariff period within the remainder of the regulatory period. | Currently the regulatory period is 1 year (fiscal year = calendar year). From year 2021 the regulatory period is expected to be increased to 4 years. |
| 26(1)(d) (30(2)(b)) | at least a simplified tariff model, updated regularly, accompanied by the explanation of how to use it, enabling network users to calculate the transmission tariffs applicable for the prevailing tariff period and to estimate their possible evolution beyond such tariff period. | The simplified tariff model will published on Energinet's website from 13 September 2018. |
| 26(1)(e) | where the fixed payable price approach referred to in Article 24(b) is considered to be offered under a price cap regime for existing capacity:<br>(i) the proposed index;<br>(ii) the proposed calculation and how the revenue derived from the risk premium is used;<br>(iii) at which interconnection point(s) and for which tariff period(s) such approach is proposed;<br>(iv) the process of offering capacity at an interconnection point where both fixed and floating payable price approaches referred to in Article 24 are proposed. | There are no price cap regimes applied to existing, incremental or new capacity in the Danish gas transmission system. |

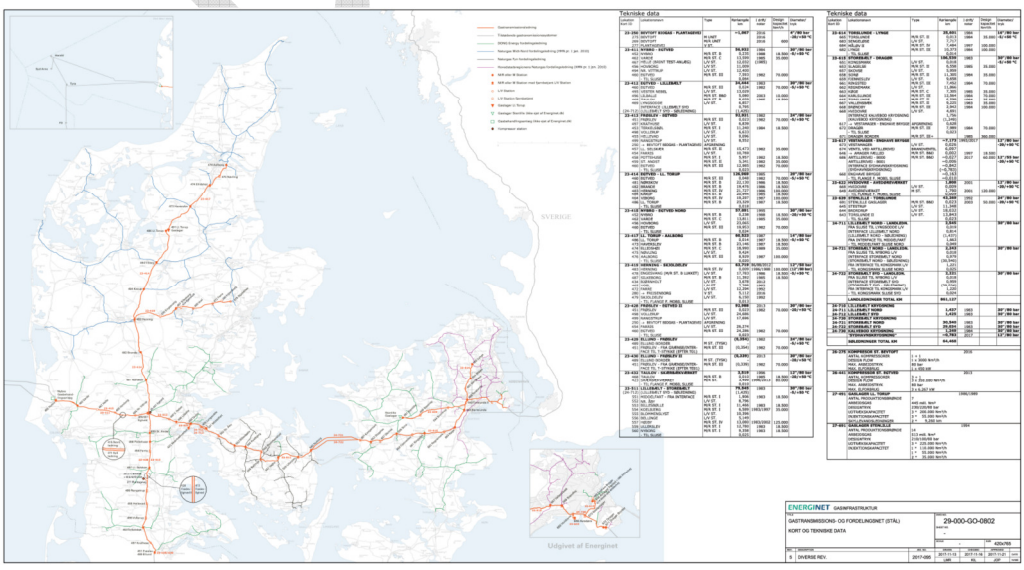
1. Appendix 1 - Figure 6: Technical capacity




2. Appendix 2 - Figure 7*:* Quantity and direction of gas flows

Map is to be developed.

3. Appendix 3 - Figure 8: *S*tructural representation of the transmission network



# 4. Appendix 4 – Article 9 of TAR NC

Article 9 concerns adjustments of capacity tariffs to and from storage facilities (point 2 on LNG is not currently relevant in the Danish transmission):

1. *A discount of at least 50 % shall be applied to capacity-based transmission tariffs at entry points from and exit points to storage facilities, unless and to the extent a storage facility which is connected to more than one transmission or distribution network is used to compete with an interconnection point.*
2. *At entry points from LNG facilities, and at entry points from and exit points to infrastructure developed with the purpose of ending the isolation of Member States in respect of their gas transmission systems, a discount may be applied to the respective capacity-based transmission tariffs for the purposes of increasing security of supply.*

Historically, capacity to and from Danish underground gas storages (UGS) have not been priced in the transmission system. **Energinet proposed to set a 100% discount on capacity-based transmission tariffs at entry points from and exit points to storage facilities.** This provides the shippers with lowest possible barriers to the UGS and to carry the current pricing regime forward.

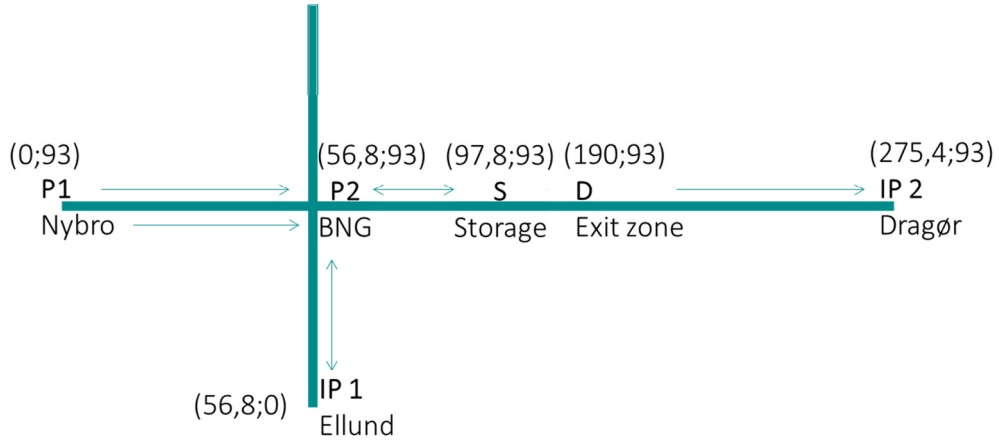
In the coming years, while the Tyra field is under renovation, full commercial use of the Danish UGS is required to maintain system balance in a temporary period with limited entry capacity to the Danish transmission. Introducing new capacity tariffs towards the UGS would constitute a disincentive on shippers to utilize the storage capacity.

Since the Ellund expansion of import/export capacity towards the German transmission systems was realised, Danish UGS have been part of a European flexibility market. In line with storages in continental Europe, one impact has been reduced prices at storages. In Denmark exacerbated by increased entry capacity at the Ellund IP providing shippers with improved flexibility instruments to supplement the storages.

This could imply that Danish UGS is in some competition with entry points to provide flexibility to shippers. However, pricing at the UGS appears to be much closer correlated to European storage prices than to entry capacity indicating that storages are competing across borders to provide flexibility not only internally but also in adjacent markets.

It is also noted that the Swedish gas market has limited access to internal flexibility mechanisms, and that the 100% discount serves to provide cost efficient access to Danish storages for shippers servicing the Swedish market.

## 5. Appendix 5 - Figure 9: Placement of virtual points




## 6. Appendix 6 – Article 7 of TAR NC

'Reference price' means the price for a capacity product for firm capacity with a duration of one year, which is applicable at entry and exit points and which is used to set capacity-based transmission tariffs. In the Danish transmission, the reference price is the starting price at capacity auctions at Interconnection Points (Ellund and Dragør Entry/Exit capacity). The reference price methodology is applied to the part of the transmission services revenue to be recovered from capacity-based transmission tariffs with the aim of deriving reference prices.

Requirements of TAR NC to the choice of reference price methodology are stated in Article 7:
*The reference price methodology shall comply with Article 13 of Regulation (EC) No 715/2009 and with the following requirements. It shall aim at:*

- *a) enabling network users to reproduce the calculation of reference prices and their accurate forecast;*
- *b) taking into account the actual costs incurred for the provision of transmission services considering the level of complexity of the transmission network;*
- *c) ensuring non-discrimination and prevent undue cross-subsidisation including by taking into account the cost allocation assessments set out in Article 5;*
- *d) ensuring that significant volume risk related particularly to transports across an entry-exit system is not assigned to final customers within that entry-exit system;*
- *e) ensuring that the resulting reference prices do not distort cross-border trade.*

**Energinet proposes** to maintain the current method for reference price setting in force in the current tariff methodology, i.e. **that reference prices are set equal to the regulated capacity tariffs in all other system points.** This implies that the same general cost allocation methodology is applied independent of the specific point being an Interconnection Point (IP) or an internal supply point.

Within a uniform cost allocation method with an ex post entry-/exit-split this results in the same reference price at IPs as the regulated capacity tariff in all other entry or exit points.

In the view of Energinet, such reference price methodology provides a transparent and non-discriminatory cost allocation principle that accommodates the principles of Article 7 listed above. The proposed reference price methodology is in logical extension of the proposed uniform cost allocation principle and will ensure that revenues from sale of cross-border capacity provides a share of total cost recovery proportional to the share of total capacity sold.

## 7. Appendix 7 - Table 9: Capacity-/commodity-split 2019/2020

*See also 3.1.1 Capacity-/Commodity-split (Article 4)*

| Split | Capacity only: | Including commodity: |
|---|---|---|
| **Capacity** | - | 51% |
| **Commodity** | - | 49% |

## 8. Appendix 8 - Table 10: Entry-/exit-split 2019/2020

| Split | Capacity only: | Including commodity: |
|---|---|---|
| **Entry** | 52% | 26% |
| **Exit** | 48% | 74% |

## 9. Appendix 9 - Table 11: Intra-system/cross-system split 2019/2020

| Split | Capacity only: | Including commodity: |
|---|---|---|
| **Intra** | 37% | 55% |
| **Cross-use** | 63% | 45% |