SHIPPERS' FORUM

4 June 2020

MUTE YOUR MICROPHONE, WHEN YOU DON’T SPEAK

SWITCH ON YOUR CAMERA, ONLY WHEN YOU ARE GIVEN THE WORD TO SPEAK

USE THE ‘RAISE HAND’ FUNCTION IF YOU WISH TO COMMENT OR ASK A QUESTION…

…YOU CAN ALSO WRITE YOUR QUESTION USING THE CHAT - THE HOST WILL ASK THE QUESTION FOR YOU

WELCOME

Clement Johan Ulrichsen, Energinet Gas TSO

MUTE YOUR MICROPHONE, WHEN YOU DON’T SPEAK

SWITCH ON YOUR CAMERA, ONLY WHEN YOU ARE GIVEN THE WORD TO SPEAK

USE THE ‘RAISE HAND’ FUNCTION IF YOU WISH TO COMMENT OR ASK A QUESTION…

…YOU CAN ALSO WRITE YOUR QUESTION USING THE CHAT - THE HOST WILL ASK THE QUESTION FOR YOU

PROGRAMME

13.00 **Welcome**
Clement Johan Ulrichsen, Energinet Gas TSO

13.10 **Yearly market report**
Peter Lyk-Jensen, Danish Utility Regulator

13.25 **Danish Gas Market during Covid-19 lockdown**

Market status
Julie Frost Szpilman, Energinet Gas TSO

System operations
Christian Meiniche Andersen, Energinet Gas TSO

13.55 **Green Gas Lolland-Falster**

Open Season 2020
Christian Rutherford, Energinet Gas TSO

Project process
Jeppe Danø, Energinet Gas TSO

14.10 **Tariffs 2020/21**
Nina Synnest Sinvani, Energinet Gas TSO

14.25 **Ellund capacities and auctions**
Christian Rutherford, Energinet Gas TSO

14.45 **Baltic Pipe**

Project Status
Søren Juul Larsen, Energinet

Future Capacity Platform
Poul Johannes Jacobsen, Energinet Gas TSO

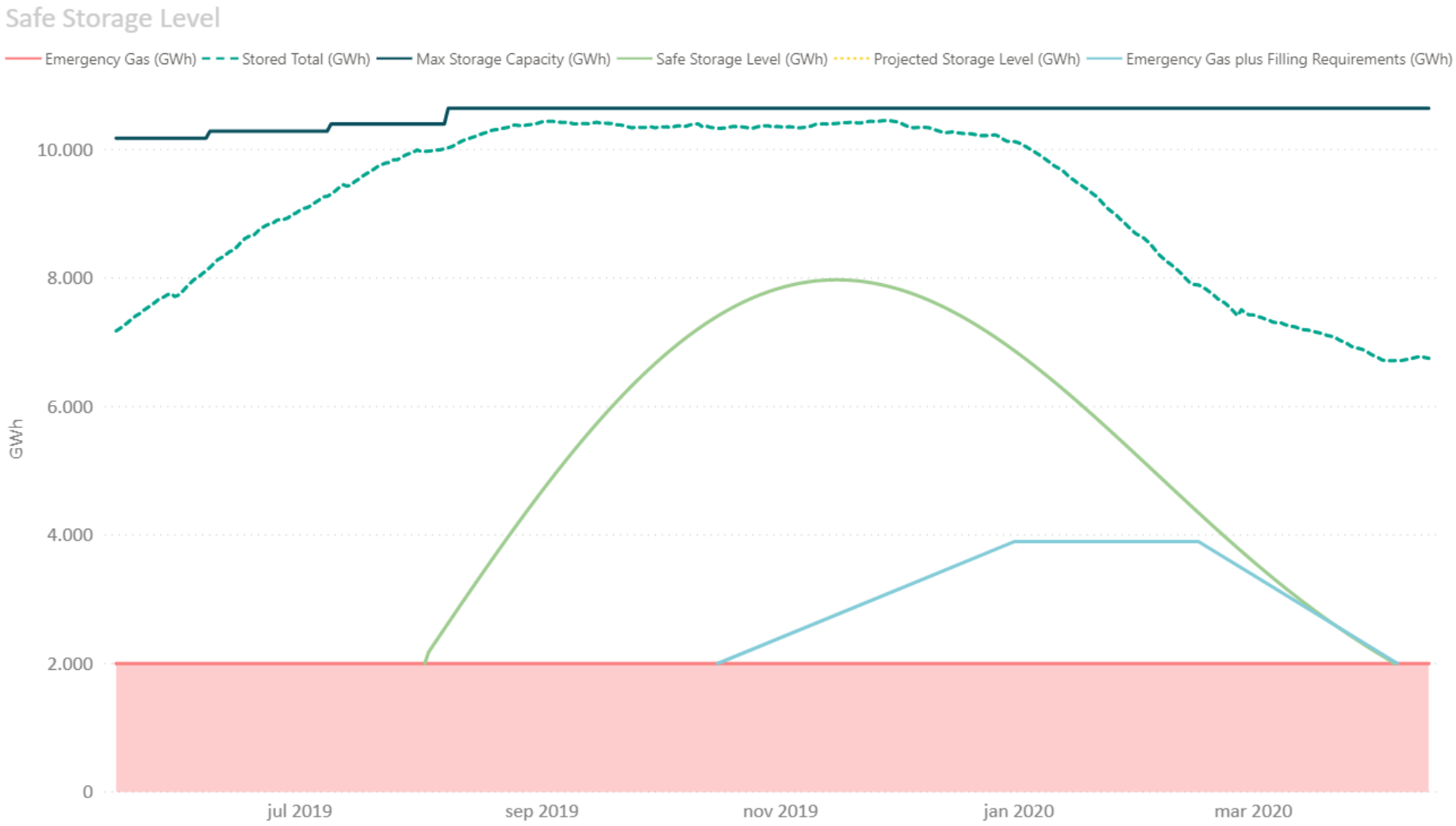
Joint market zone
Poul Johannes Jacobsen, Energinet Gas TSO

Balancing model 2022
Christian Rutherford, Energinet Gas TSO

15.10 **Gas Storage Denmark**
Iliana Nygaard, Gas Storage Denmark

15.25 **Closing remarks**
Clement Johan Ulrichsen, Energinet Gas TSO

EXCELLENT SECURITY OF SUPPLY IN 19/20 WINTER



UPDATE OF RULES FOR BIOMETHANE CERTIFICATES

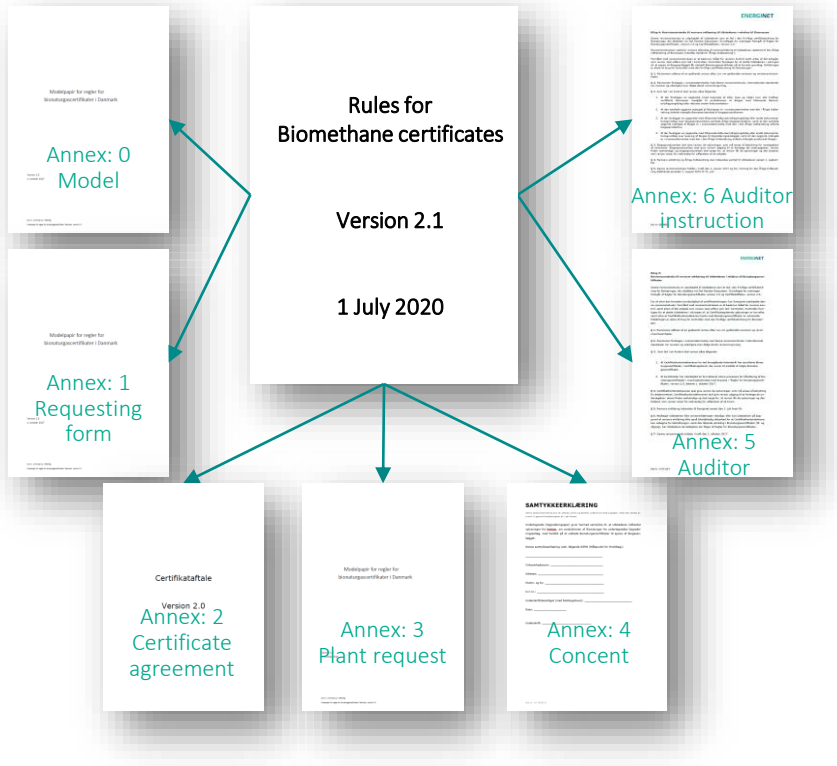
Market consultation of the new version to enter into force on 1 July 2020

Deadline for comments: 15 June 2020

4 proposed changes:

- New ”Know your customer”-rules. Extended requirements for new account holders in the certificate register.
- Closer linkage between sale of certificates and sale of gas.
- Digitalised transfer of metering data to the certificate register => new correction rules.
- Transparancy on the website: Statistics updated once a month:

EN:https://en.energinet.dk/Gas/Biomethane/Statistics
DK: https://energinet.dk/Gas/Biogas/Certifikater-i-tal



ENERGINET INVOLVED IN THE GREEN GAS MARKET DEVELOPMENT IN EU

ENTSOG and GIE

- Involved in future green gas market design (ENTSOG Roadmap 2050 – see picture)
  - Future hydrogen regulation and market design that works in the short and the long run
  - Securing that Guarantees of Origin (GO's) and certificates help trace the green value

ERGAR

- Enabling cross-border transfer of certificates for renewable gasses

Gas for Climate

- Committed to achieve net zero greenhouse gas emissions in the EU by 2050

QUESTIONS

Contact: cju@energinet.dk

Danish
Utility Regulator

Monitoring the Danish wholesale gas market

Energinet Shippers' Forum

June 4, 2020

Presenter/
Peter Lyk-Jensen

Date/
June 4, 2020

The Danish Wholesale Gas Market 2019

Market Monitoring Report 2019 was published mid May

The Danish Utility Regulator has obligations to:

1. Monitor wholesale gas market
2. Enforce REMIT

Focus on:

- Effects of Tyra-shutdown
- Price developments
- Ellund utilisation
- Market behaviour
- Storage utilisation

Production and Consumption

Offshore Production

- Decreased by 24% compared to 2018

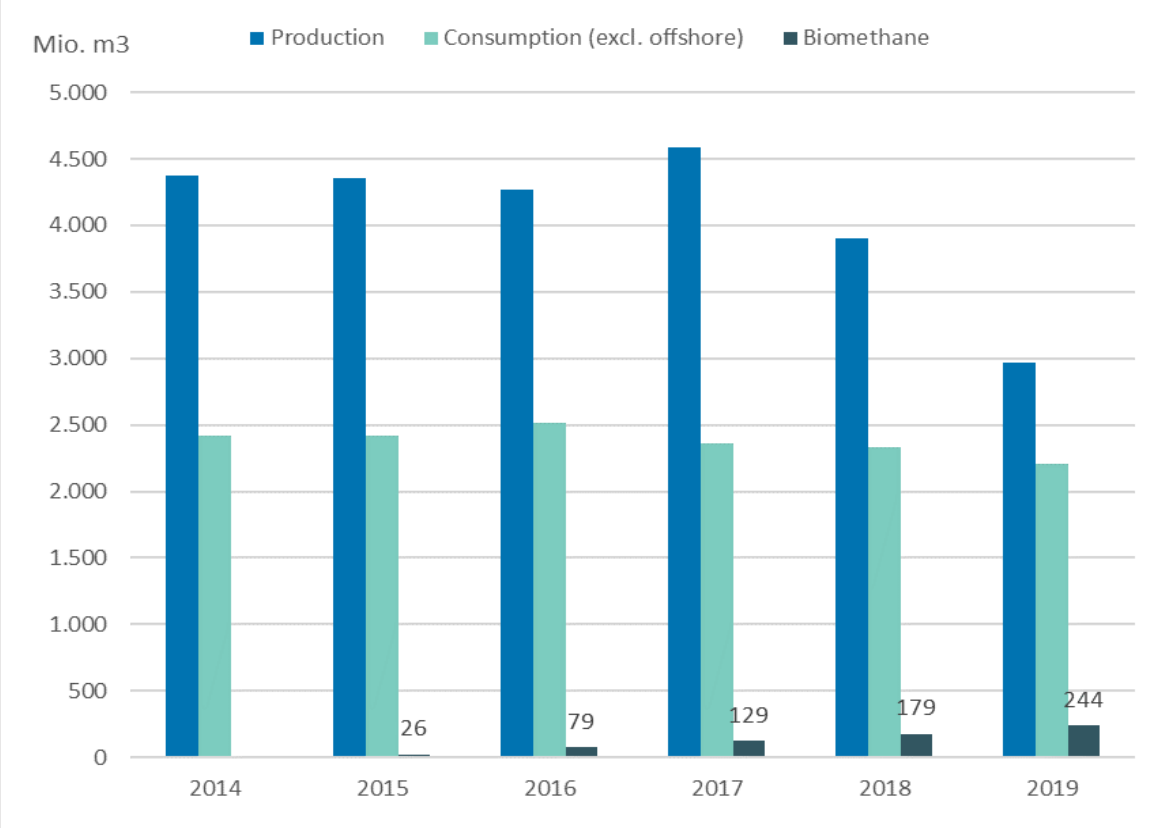
Biomethane Production

- Has increased 10-fold between 2015 and 2019
- Increased by 24% compared to 2018
- 11% of consumption

Consumption

- Decreased by 6% compared to 2018
- Lowest in 20 years

Production and consumption
2014-2019



Storage

Storage capacity in 2019: 10.6 TWh

- Storage year 2019 fully booked by January
- Storage year 2020 fully booked by April 2020
- Average price during 2019: 4.07 EUR/MWh

Sharp increase in seasonal spreads during 2019

- Storage year 2021 capacity still available

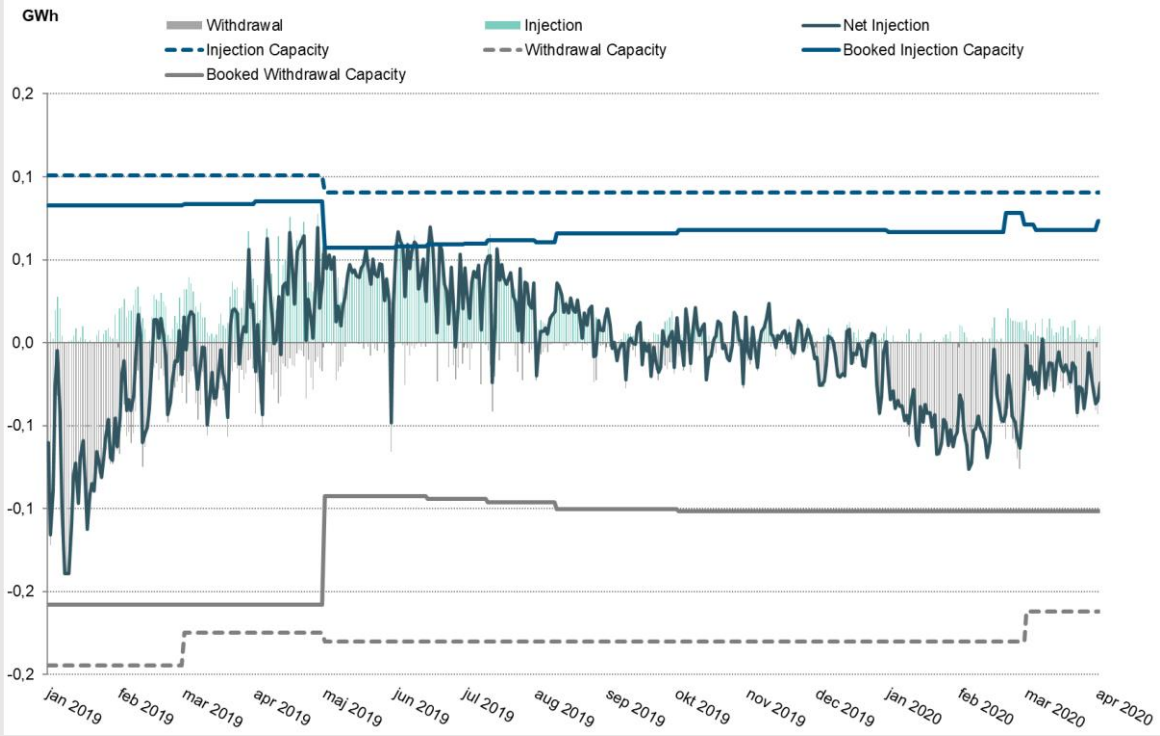
Two consecutive warm winters

- Storage 90% full by summer 2019
- Storage 95% full by year end

Withdrawals very low during winter 2019/20

- Approximately 50% of normal levels

Filling, Withdrawal and Injections
January 2019 – April 2020



Gas Trade and Market Dynamics - Volumes

Total traded volume:

- Exchange (ETF): 21 TWh
- Bilateral (GTF): 61 TWh

ETF volumes fell 17% in 2019

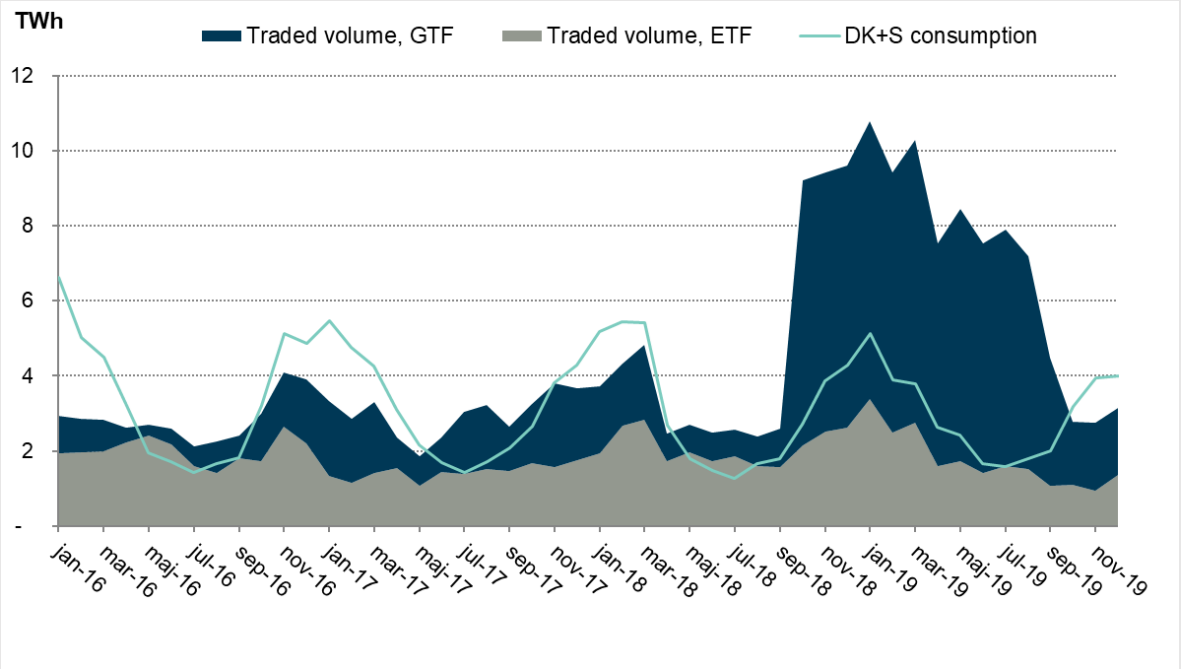
Lower share of both:

- Total traded volume (GTF+ETF): 45% → 25%
- DK+S consumption: 67% → 58%

Sharp ETF decrease since Tyra-shutdown

- Q4 2019: **45% lower** compared to three previous years

Traded volume GTF and ETF
January 2016 – December 2019



Gas Trade and Market Dynamics – Price Spreads

Prices fell during 2019 in line with rest of NW Europe

Tyra-shutdown implied change in flow – Denmark went from an export to an import country

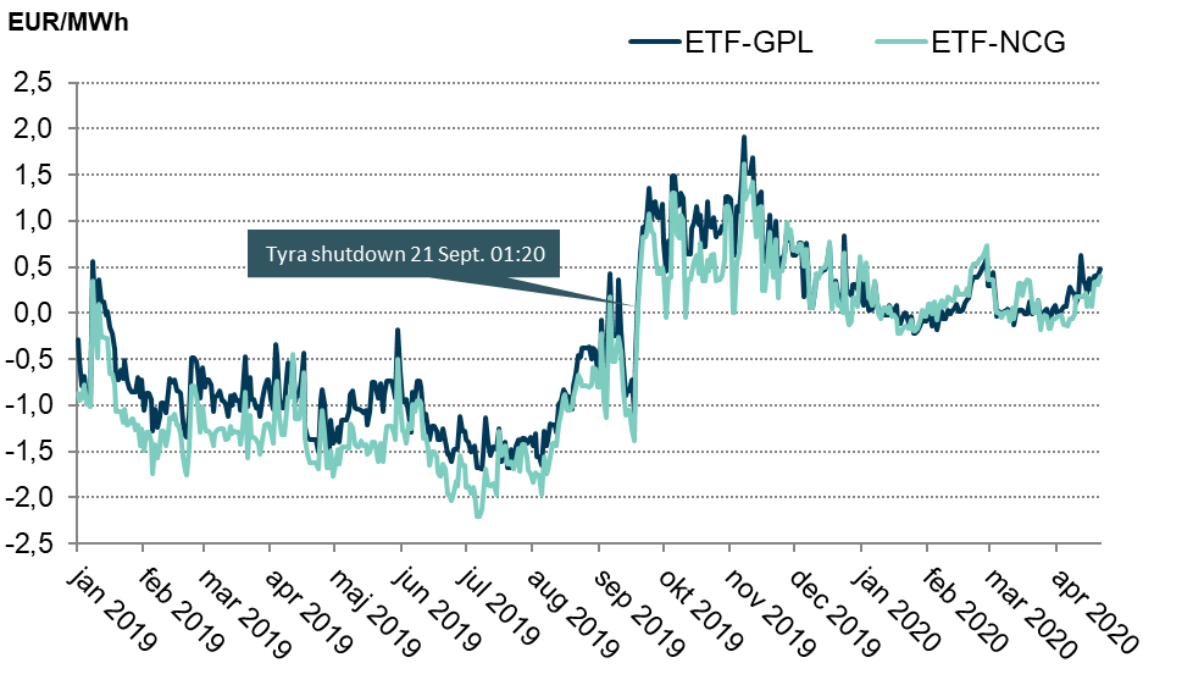
Price spreads changed accordingly

Average difference before Tyra: **-1.10 €/MWh**

Average difference after Tyra: **+0,70 €/MWh**

Price spreads close to zero after New Year

Price Spreads: Denmark vs Germany
January 2019 – April 2020



Ellund

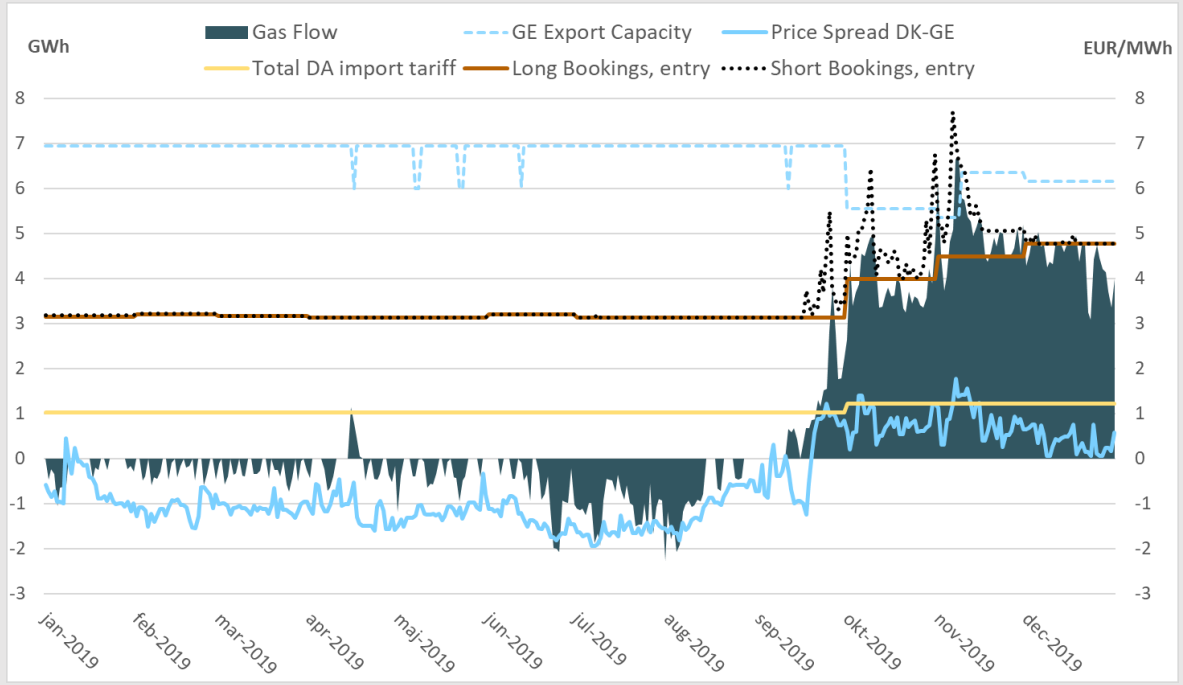
Effect of Tyra redevelopment:

- Change in flow – DK now import country
- Increase in long term bookings
- Short term booking in reaction to price signals

Only insignificant flow against price signals

But not all long term bookings utilised according to price signals

Capacity, Prices and gas flow at Ellund
January – December 2020



DUR FOCUS AREAS 2020

1. **Tyra-shutdown September 2019 to July 2022**
2. **Price development, market dynamics, trade behaviour and market concentration**
3. **Ellund: Capacity utilisation, gas flows vs price signals**
4. **Utilisation of the Danish gas storages**
5. **Re-establishment of German import capacity post Tyra-Rebuild**

Full version in Danish

Summary in English

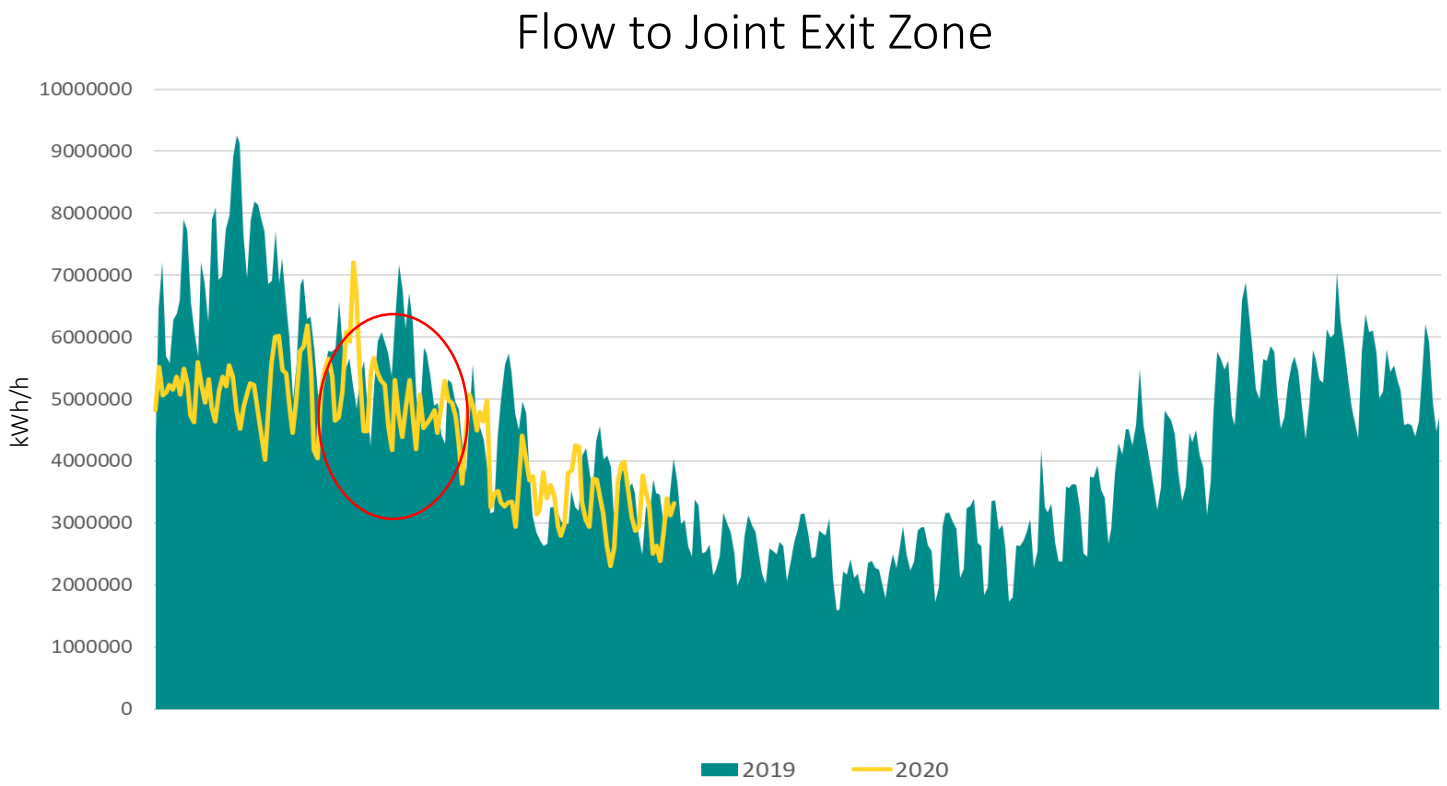
Available at https://forsyningstilsynet.dk/

DANISH GAS MARKET DURING THE COVID-19 LOCKDOWN

Julie Frost Szpilman & Christian Meiniche Andersen,
Energinet Gas TSO

CAN WE SEE AN IMPACT IN THE MARKET DUE TO THE LOCK DOWN RELATED TO COVID-19?

.....not really



SEVERAL EXPLANATIONS

The warm weather during the winter is probably the main reason

Moreover,

- Sweden has experienced a considerable reduction in the demand, which is explained by a changed tax regime
- Potential conversion away from gas in CHP plants in Denmark

ZOOMING INTO MORE DETAIL…

We can see the demand pattern has looked like a normal weekend:

- A later morning peak than usual – probably because people have slept longer
- Increased demand for heating – probably because the whole family has stayed at home
- Many buildings have been heated as usual – probably because the daily operation has continued

…..but we don’t really have these specific data for the gas market

IN THE POWER MARKET WE HAVE SPECIFIC DATA

With data from the Datahub, it is possible to see that some sectors have been severely hit by the lock down

Please read more here

Energinet.dk, news
(analysis only available in Danish)

PRICES HAVE DIRECTION TOWARDS ZERO

We are aware that technically EEX will soon implement potential negative prices

- European gas prices have been steadily decreasing during spring 2020
- European storages have a historically high filling
- The European market continues to be well supplied

➢ We are in close dialogue with the Danish Utility Regulator regarding our incentive structure

SECURE OPERATIONS DURING COVID-19

PROTECTION OF THE CRITICAL STAFF IN THE CONTROL CENTER

- Operation by 3 dispatchers from 3 separate control centers (KCG)
- Access to KCG restricted
- KCG coordination meetings each day
- Possibility to recruit extra dispatchers from other personal

ENERGINET/GAS-TSO, DSO, STORAGE

- Crisis management setup
- Daily coordination meeting
- Daily description of the situation
- Coordination with the Danish Preparedness Authority

INTERNATIONAL COORDINATION

- Weekly meetings in the Regional Coordination System for gas in ENTSOG (ReCo)
- Valuable knowledge sharing from TSO's in different stages of the crisis

QUESTIONS

Contact: jfs@energinet.dk

BREAK

GREEN GAS LOLLAND-FALSTER

Christian Rutherford & Jeppe Danø, Energinet Gas TSO

GREEN GAS LOLLAND-FALSTER

New development project based on indications in the 2019 Incremental Capacity process

Demand – Joint Exit Zone "New Denmark"

- Large consumers (industries/business, for processing purposes)

Supply – RES Entry "New Denmark"

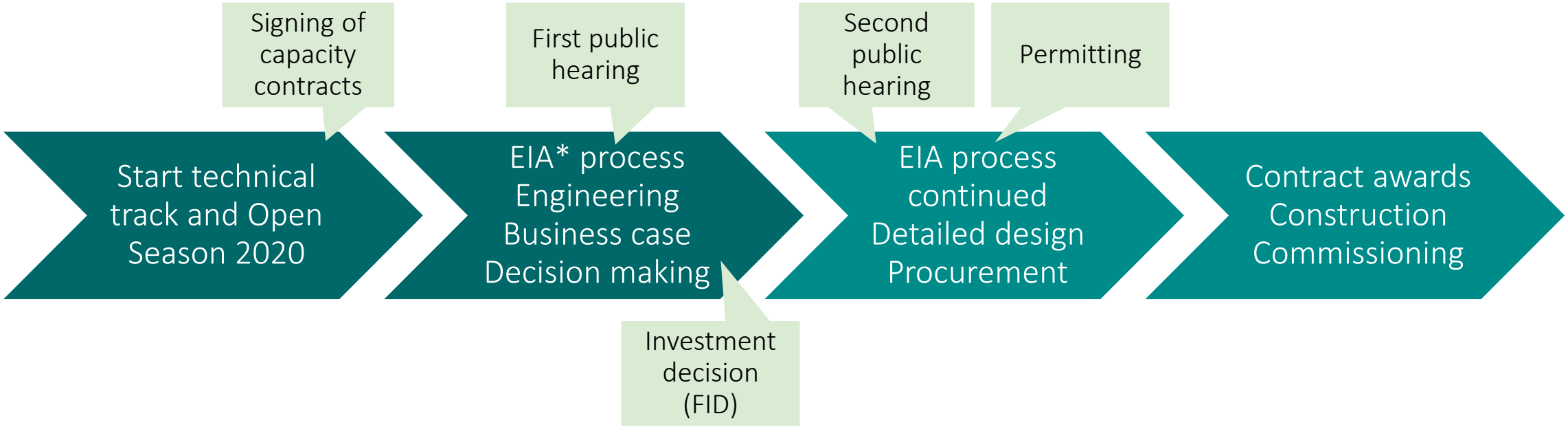
- New biomethane production (significant potential in the area from local farming and local waste)

Purpose of the Development Project

- Explore and mature opportunities to develop a green gas gas grid on-Lolland-Falster (distribution)
- Expected to be connected to the existing gas grid to balance demand and supply (transmission)

PROCESS AND MILESTONES

The development project and the potential construction project



* Environmental Impact Assessment

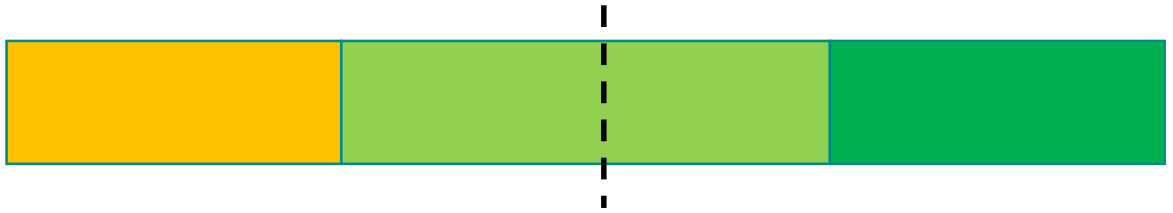
OPEN SEASON 2020 – GREEN GAS LOLLAND-FALSTER

3 main criteria for signing long-term capacity contracts

1. Capacity booking threshold: Exit Lolland-Falster > 230 MWh/h for 15 years
RES Entry Lolland-Falster > 39 MWh/h for 15 years

2. Green Gas threshold: Project should mainly be based on green gas, in terms of volume per year (more than 50 per cent)

3. Economic threshold:



=> Capacity contracts was signed, but under condition of approval by Energinet board and Ministry of Climate, Energy and Utilities by December 2020

PROCESS TOWARD FID IS ONGOING

Energinet investments are approved by Minister for Climate, Energy and Supply according to §4 in law governing Energinet

Dialouge with ministry on socioeconomic benefits and costs on investment is ongoing.

QUESTIONS

Contact: cru@energinet.dk or jda@energinet.dk

TARIFFS 2020/2021

Nina Synnest Sinvani, Energinet Gas TSO

CONTENT

The tariffs will enter into force 1 October 2020

- Resulting tariffs 2020/2021
- Assumptions:
  - Costbase - Overrecovery
  - Capacity/Flow
- Next step

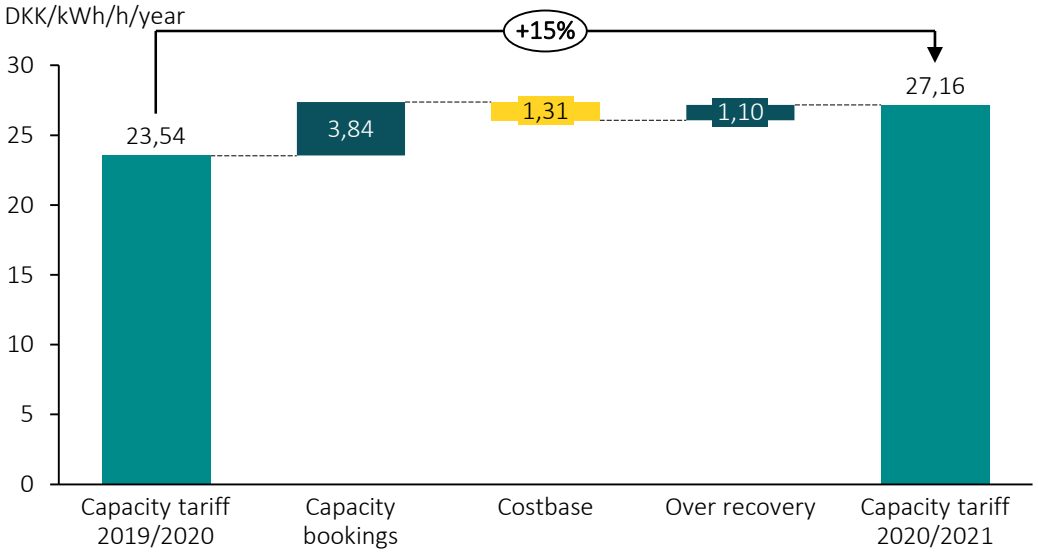
RESULTING TARIFFS – TRANSPORT

The main tariff driver is the decrease in forecasted capacity and flow and a over recovery of 75 mDKK

Capacity tariff:

- Decrease in forecasted capacity bookings
- Decrease in costbase
- Decrease in over recovery,

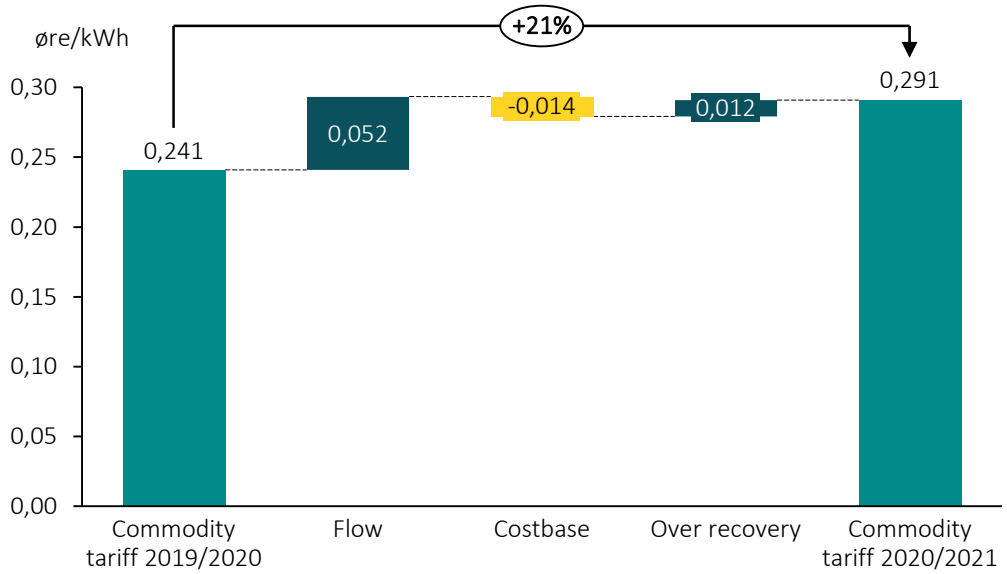
overall leads to a increase in capacitet tariffs on 15%



Commodity tariff:

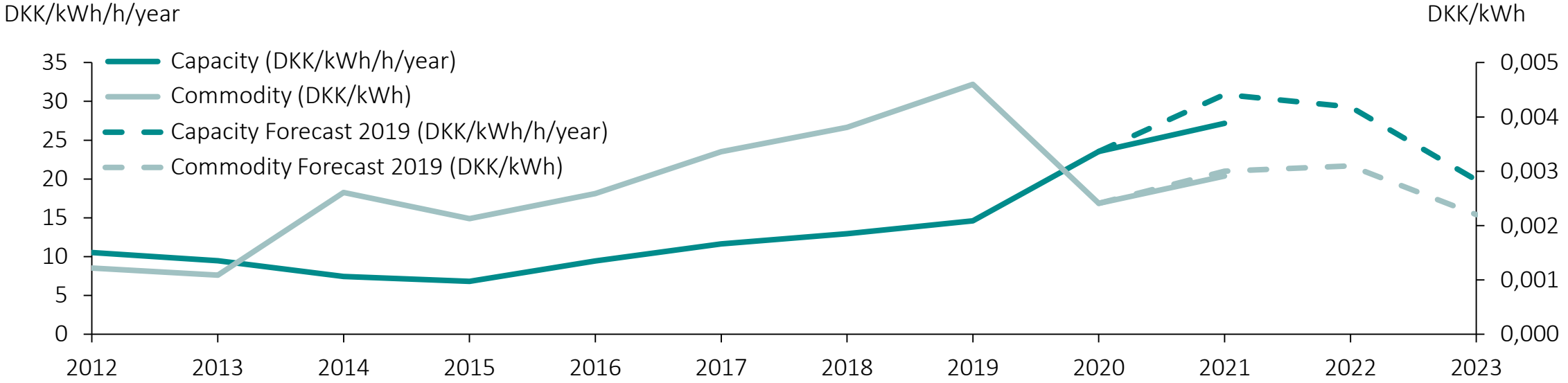
- Decrease in forecasted flow
- Decrease in costbase
- Decrease in over recovery,

overall leads to a increase in capacitet tariffs on 21%



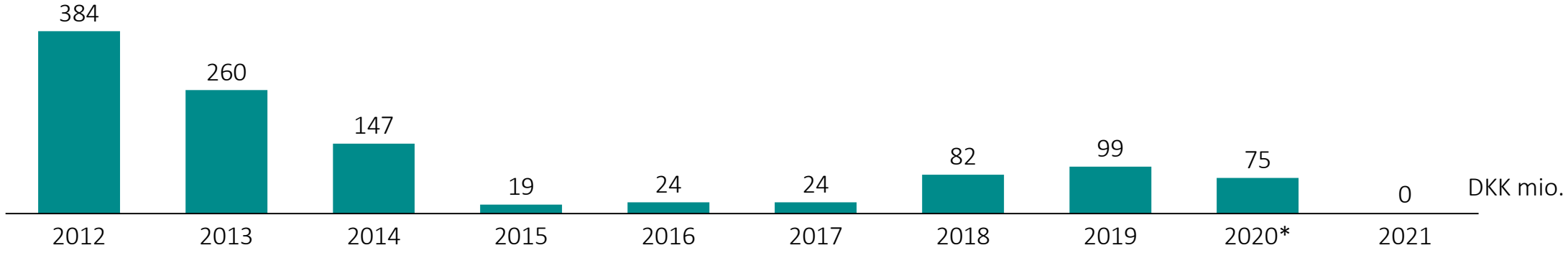
Balancing charge: 0,00019 DKK/kWh

DEVELOPMENT IN TRANSPORTATION TARIFFS



The development in the transportation is mostly driven by the over recovery.

Over recovery ultimo:

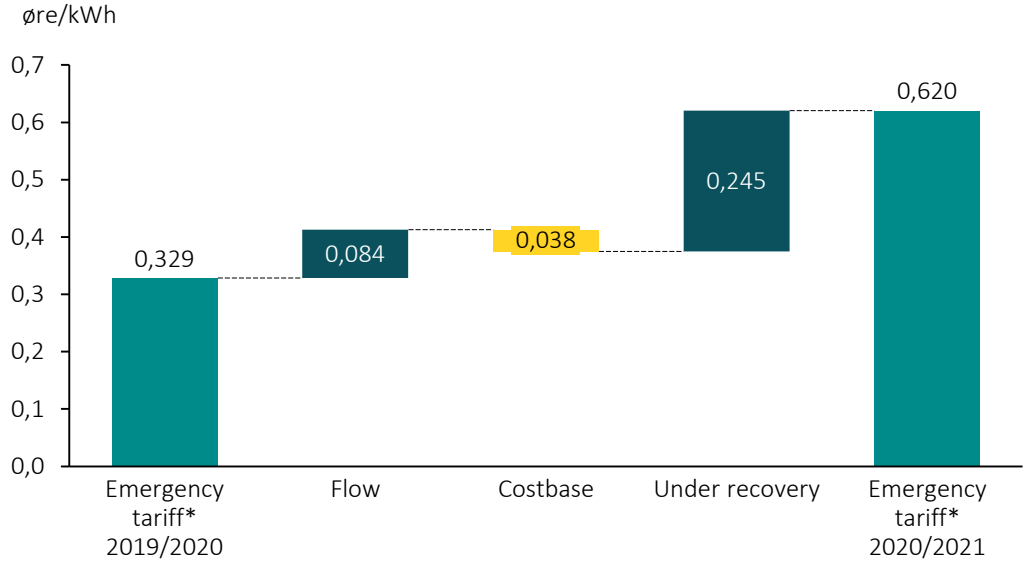


* Expected

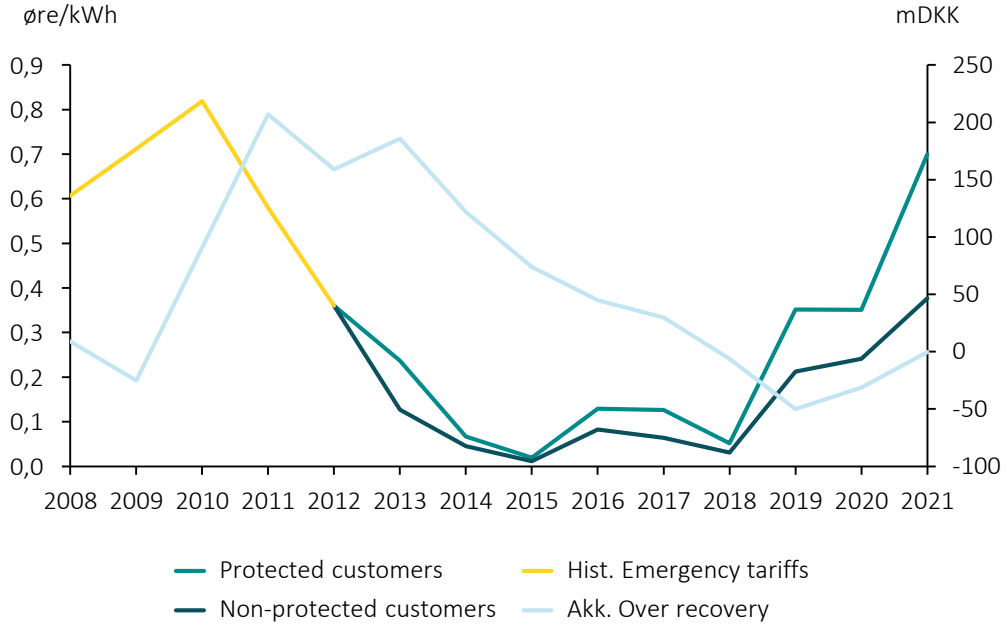
RESULTING TARIFFS - EMERGENCY

Due to over recovery the increase in the emergency tariffs is limited

Average emergency tariff:



Development in the emergency tariff:



COST BASE

Increase in transportation cost base and high impack of the methodology and over recovery

Transportation:

Costbase (mDKK)	2019/2020	2020/2021
Capacity	224	223
Commodity	96	95
Total	**321**	**318**
Over recovery*	88	75

Emergency:

Costbase (mDKK)	2019/2020	2020/2021
Protected (85%)	81	96
Non-protected (15%)	14	17
Total	**95**	**113**
Over recovery*	26	-31

*Subtracted in the costbase

CAPACITY AND FLOW ASSUMPTIONS

	2019/2020	2020/2021	Change
Commodity (mio. kWh)			
JEZ	39.934	32.802	-18%
Export Germany	0	0	0%
Total	39.934	32.802	-18%
	0	0	0%
Capacity (kWh/h/year)			
JEZ	4.733.333	3.733.333	-21%
Exit Ellund	0	0	0%
Exit capacity	4.733.333	3.733.333	-21%
Entry Nybro	260.000	210.000	-19%
Entry Ellund	4.100.000	3.608.333	-12%
Entry BNG	440.000	645.000	47%
Entry Capacity	4.800.000	4.463.333	-7%

Comments:

- Based on expected ”Analysis Assumptions 2020 ”
- Decrease in flow and capacity bookings due to the Tyra redevelopment
- Shift away from natural gas as fuel on decentralized combined heat and power plants (CHP)

NEXT STEP

We will continue to have a high involvement of the market on the tariff methodology in the coming years…

- User Group or Shipper Taskforce on key points (Long term multiplier, capacity-/commodity-split, gas year etc.)
- Updating and improving forecast tool
- Questions or comments on tariff subjects?

Please, feel free to contact me.

We will also, as always, be glad to have bilateral meetings

QUESTIONS

Contact: nsy@energinet.dk

ELLUND CAPACITY AND AUCTIONS

Christian Rutherford, Energinet Gas TSO

AUCTION PRINCIPLES

Specific rules for annual auctions in CAM NC

Rules of relevance:

- TSO's must offer capacity at least 5 years' ahead
- TSO's must save at least 10 % of the capacity for short-term (quarterly or shorter – minimum requirement)
  - Energinet goes beyond the minimum requirement and saves 10 % for day-ahead
- TSO's must save additional 10 % for annual auctions, which must be saved for years 5-15 (minimum requirement)
  - Energinet goes beyond the minimum requirement, and saves 10 % also for years 2-5
- Unbundled capacity must only be offered 1 year ahead
- Entry points in Germany only offered 2 years ahead (due to market merger)

PRISMA AUCTIONS 6 JULY 2020

Capacity offer Ellund Entry (from Germany to Denmark)

Point/GY (in MWh/h)	Gas year 2020	Gas year2021	Gas Year 2022	Gas Year 2023	Gas Year 2024
Exit GUD/ Entry Energinet (bundled)	0.7	475	1,264	1,264	1,441
Exit OGE/ Entry Energinet (bundled)	587	744	844	844	844
Entry Energinet (unbundled)	2,586	-	-	-	-

PRISMA AUCTIONS 6 JULY 2020

Capacity offer Ellund Exit (from Denmark to Germany)

Point/GY (in MWh/h)	Gas Year 2020	Gas year 2021	Gas Year 2022	Gas Year 2023	Gas Year 2024
Exit Energinet/ entry GUD (bundled)	0	0	-	-	-
Exit Energinet/ entry OGE (bundled)	154	154	-	-	-
Exit Energinet (unbundled)	8,846	-	-	-	-

QUESTIONS

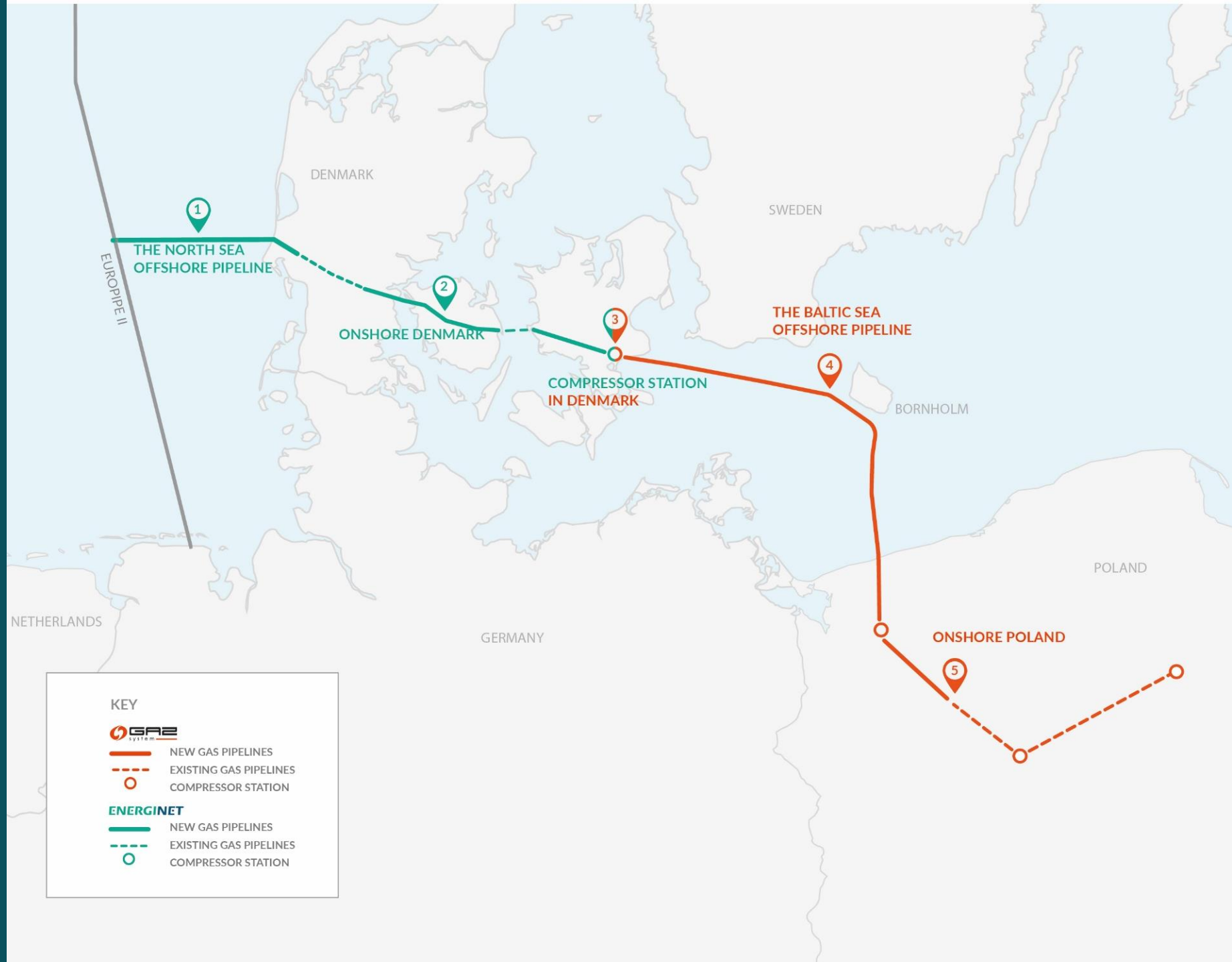
Contact: cru@energinet.dk

BREAK

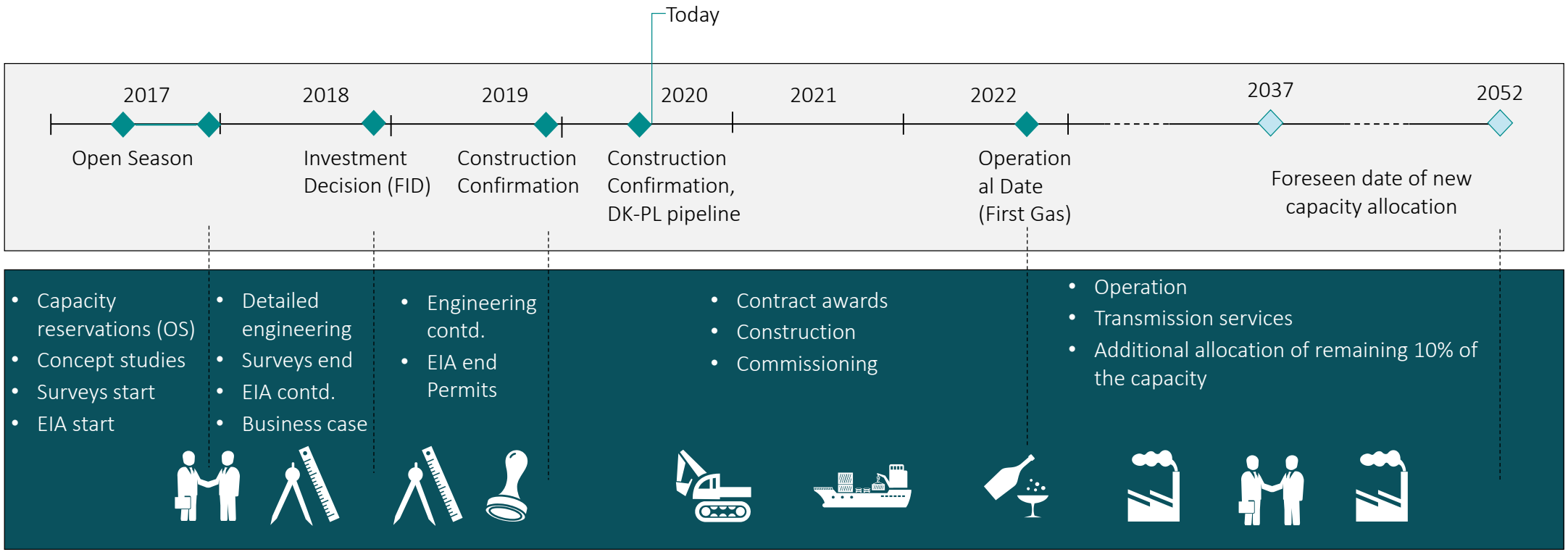
BALTIC PIPE

Energinet Gas TSO

PROJECT OVERVIEW



BOTH GAZ-SYSTEM AND ENERGINET FOLLOWS THE HIGH-LEVEL PROJECT SCHEDULE



BASIS FOR ENERGINET'S SCOPE – IN PLACE

A Strong **organisation** and focus on **health and safety**

- The internal EN organisation is fully established for execution through 2020-22
- Strong focus on health and safety both in EN and with contractors as construction work activities increases during 2020-22; including lifting, welding, drilling, sailing etc.

B **Agreement** base in place

- All major agreements related to construction in Denmark have been settled. Includes other operators in both Norway, Poland and Denmark

C Major **permits** for construction granted

- All major permits including Danish National Directive, approval of the onshore environmental permit and offshore construction permit have been received from the Danish authorities

Site preparation work Compres. Station Everdrup

ENERGINET HAS INITIATED CONSTRUCTION WORK

D

Majority of **supply contracts** settled

- Contracts have been tendered and settled with national and international suppliers. This includes:
  - Equipment: Pipe, valves, compressors etc.
  - Installation works: Onshore pipeline, offshore North Sea and offshore Little Belt
  - EPC: Everdrup Compressor process plant and Nybro gas terminal

E

Construction work has started

- Pipe storage sites have been established early 2020 and pipeline construction initiated end-April onshore Zealand.
- Compressor Station Everdrup site preparation works initiated early 2020 and are well under way
- Onshore site preparation for Little Belt crossing initiated and offshore preparatory works starting up around 1 June

Onshore construction site for Little Belt crossing

HEAVY RAIN AND COVID-19 HAVE BEEN HANDLED

F

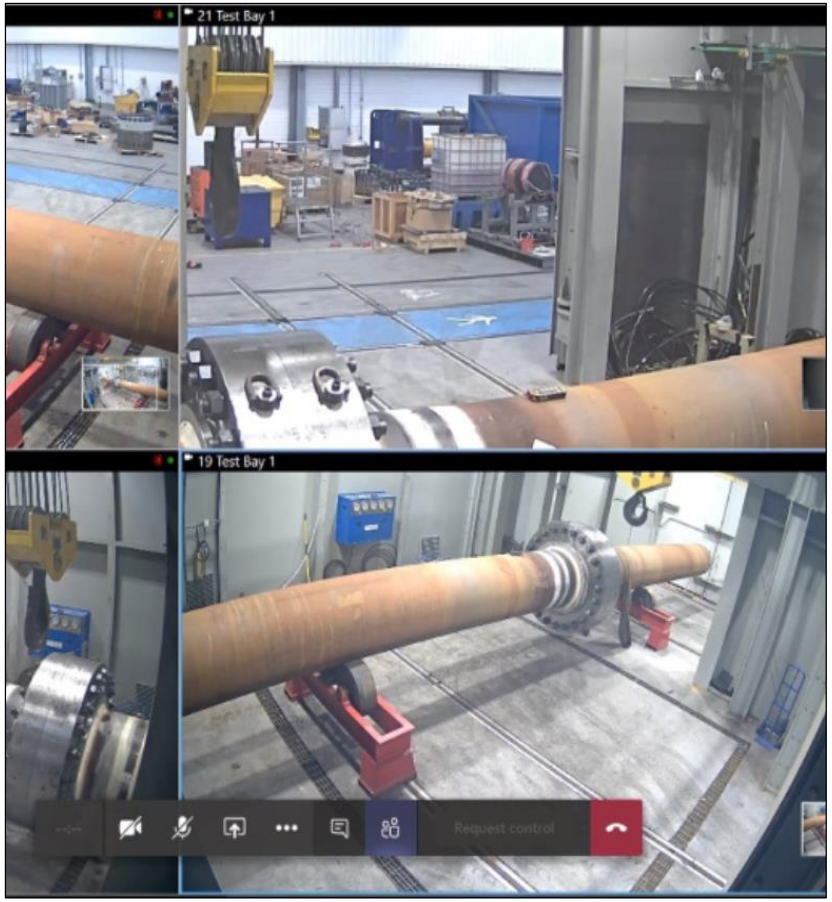
Extraordinary amounts of **rain Q1 2020** was a challenge

- Extraordinary amounts of rain Q1 2020
- Caused challenges to mainly archaeology and onshore construction start-up
- Handled and overall schedule maintained

G

COVID-19 remains a significant challenge

- Energinet's work on the Baltic Pipe project continues with several actions aimed at reducing the risk of infection. Both in relation to internal project work, manufacturing and supply of equipment and on-going installation works in Denmark; most drawing on international suppliers
- Currently, due to advanced project progress and initiatives in place to mitigate the impact of COVID-19, the pipeline's operational date by October 2022 is maintained.
- The situation remains challenging and dynamic and will be monitored closely



Test of offshore flanges – online verification

ACKNOWLEDGEMENTS

We wish to thank Gaz-System for their contribution to the overall Baltic Pipe Project

QUESTIONS

Contact: sjl@energinet.dk

FUTURE CAPACITY PLATFORM

Poul Johannes Jacobsen, Energinet Gas TSO

PHYSICAL LOCATION

Location of the new Baltic Pipe points in the North Sea and at Faxe

- Point in the North Sea:
  - Offshore point

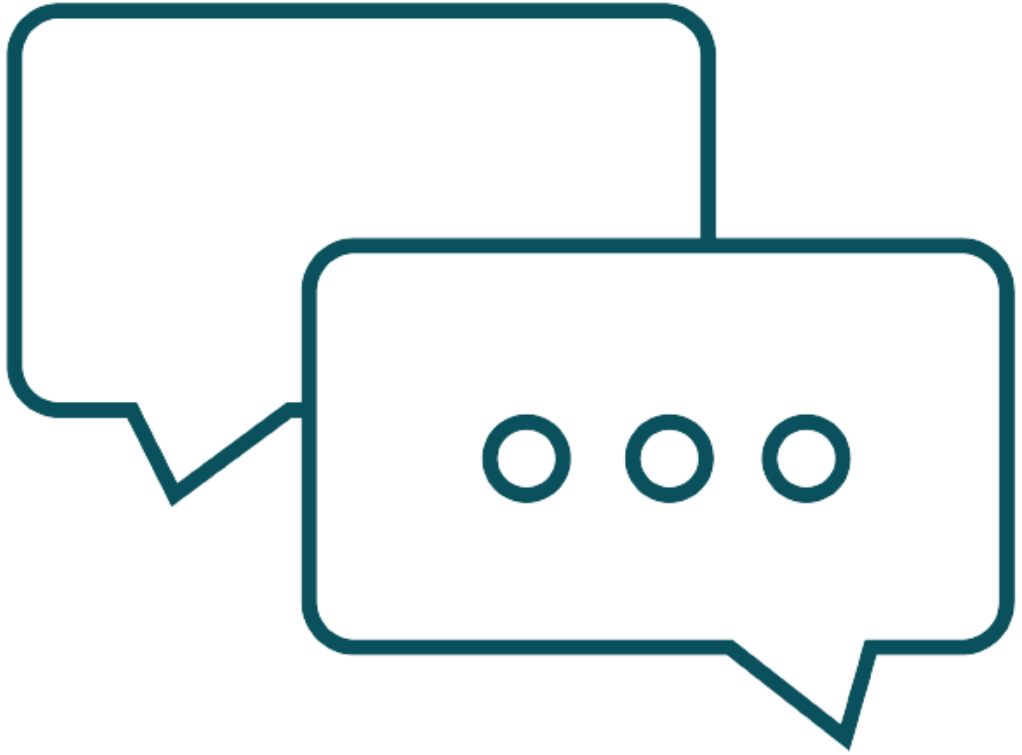
- Point on Sjælland (Faxe):
  - IP i.e. will follow EU CAM (as Ellund)

AUCTION PLATFORM

Ongoing discussion

- User group held:
  - Poland: 2 December 2019
  - Denmark: 5 December 2019

- Ongoing discussion between Gaz-System and Energinet.

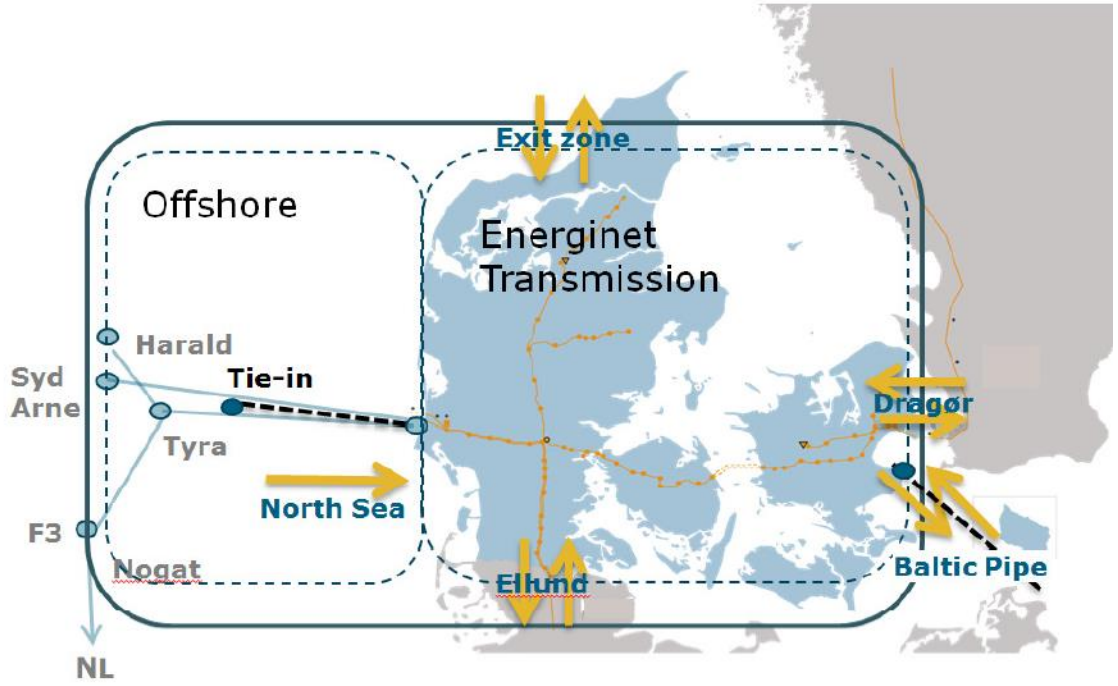


JOINT MARKET ZONE

Poul Johannes Jacobsen, Energinet Gas TSO

CONTINUATION OF THE ORIGINAL PLAN

Energinet continues with the same plan as presented in 2017 – A common market zone between Baltic Pipe offshore and the Energinet Transmission system



PRINCIPLES

- Shipper Focus e.g. reduce complexity
- Harvest synergies
- Full transparency

QUESTIONS

Contact: pjj@energinet.dk

BALANCING MODEL 2022

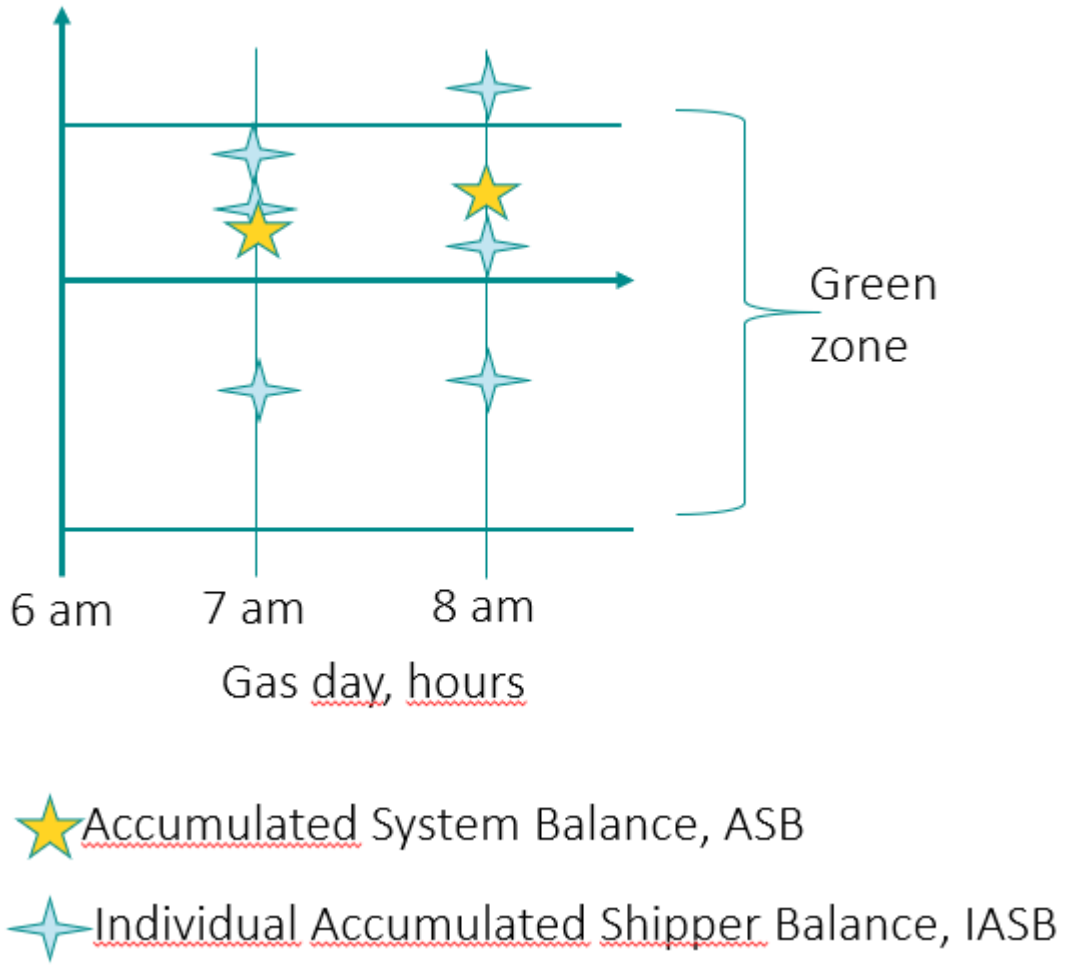
Christian Rutherford, Energinet Gas TSO

STATUS

- We have had our second user group, where the overall model was described
- More investigation in details is still needed
- We have published a webpage with relevant information and Questions and Answers (Q&A)

Please read:

https://en.energinet.dk/Gas/Shippers/Gas-balancing-model



WE ALWAYS LISTEN

Please book a meeting with us soon

jfs@energinet.dk or +45 2333 8652

QUESTIONS

Contact: jfs@energinet.dk

GAS STORAGE DENMARK

SHIPPERS FORUM

4 JUNE 2020

AGENDA

- Status on storage capacity
- Momentum for a unique possibility to expand the marketable storage capacity
- GAS for CAPACITY auction
- New status on storage capacity conditional on the successful expansion

CAPACITY STATUS 2020-2025

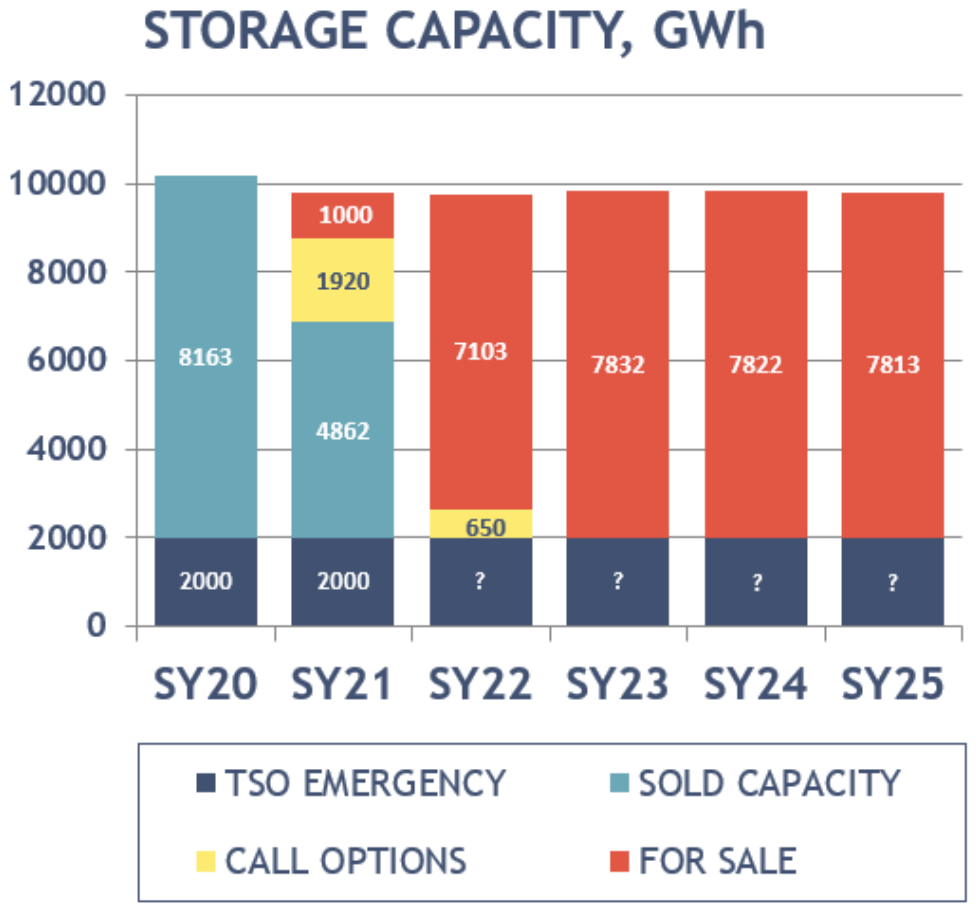
GSD GAS STORAGE DENMARK

SY2021

SOLD	GWh
Sold capacity (incl. long term capaci	4862
Call Option 1/12-2020 and 31/1-2021	1920

SOLD to TSO	
2000 GWh for TSO Emergency	2000

AVAILABLE FOR SALE	
SY2021	1000
SY2022	7103
SY2023	7832
SY2024	7822
SY2025	7813



A MOMENTUM FOR A UNIQUE POSSIBILITY TO EXPAND

THE COMBINATION OF

- LOW GAS PRICES
- HIGH SPREADS
- HIGH DEMAND FOR GAS STORAGE

CREATES A UNIQUE POSIBILITY TO EXPAND THE MARKETABLE STORAGE CAPACITY

GSD GAS STORAGE DENMARK 02-06-2020

STORAGE VALUE: INTRINSIC, EUR/MWh

	SY21	SY22	SY23
TTF	3,03	2,10	1,93
NCG	3,04	2,24	-
GPL	3,19	2,24	-

	DA	Q1	Q1-DA
TTF	4,41	11,85	7,44
NCG	4,53	12,16	7,64
GPL	4,81	11,90	7,09

GSD will conduct an expansion project of the aquifer at Stenlille:

- GSD sells firm storage capacity for cushion gas on an auction in medio June
- Special terms and conditions for managing technical and financial risks

AN AUCTION WILL BE ANNOUNCED SHORTLY

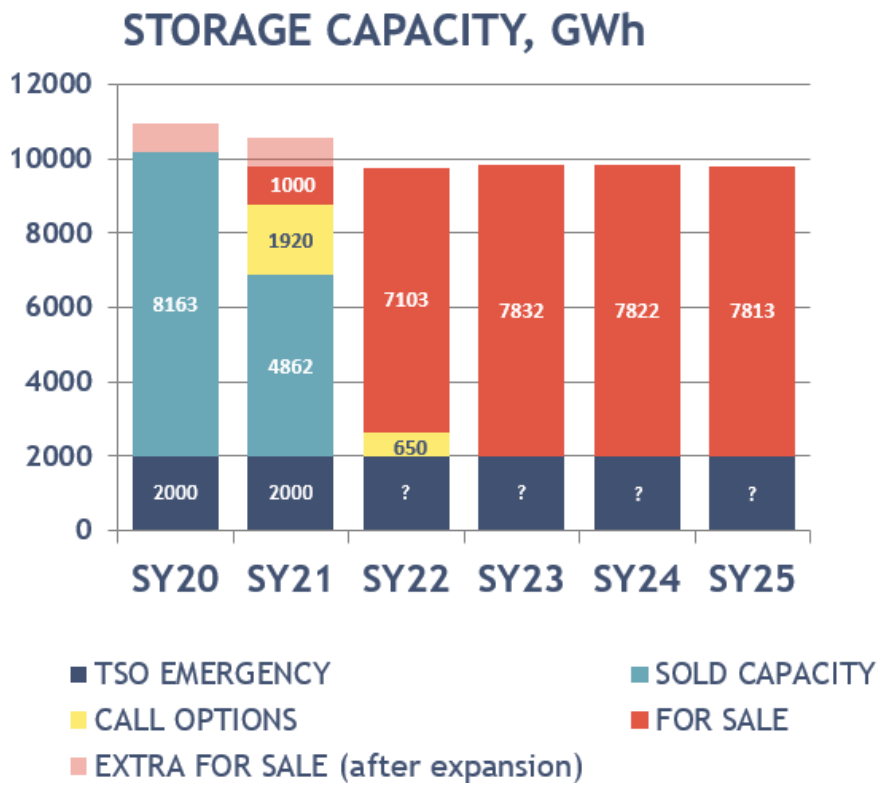
- GSD sells firm storage capacity and buys cushion gas in the ratio 40% - 60%
- Estimated expansion: extra capacity of min 600 GWh conditional on the purchase of > 1000 GWh gas
- Expected delivery period for the capacity is ROY2020
- Delivery period for the gas will be during the summer
- Physical base load injection during the expansion will be required
- GSD will allocate injection and volume capacity for free in respect to the purchased gas
- After completed injection, the gas will be transfered to GSD

Managing technical and financial risks:

GSD Option to cancel, postpone or interrupt (pro-rata) the injection of the remaining amount of natural gas at any time due to unexpected technical circumstances or due to unfavorable spreads.

Storage Customer Rolling hedge of capacity and sold gas (priced in one formula) to handle eventual cancelation, postponement or interruption by GSD

NEW CAPACITY STATUS AFTER SUCCESFUL EXPANSION



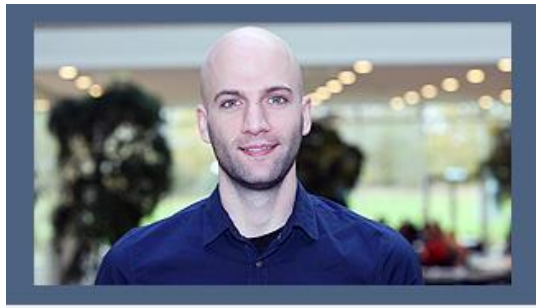
EXTRA CAPACITY for SALE (after expansion)

- ROY SY2020 – allocated between the successful bidders in the auction
- SY2021 – for sale on a later stage

- THE FINAL AMOUNT OF THE EXTRA CAPACITY FOR SALE WILL BE CONDITIONAL ON THE AUCTION RESULT, ON SUCCESSFUL PHYSICAL EXPANSION AND ON THE MARKET (DA<Q1)
- REMIT FOR THE ADDITIONAL MARKETABLE STORAGE CAPACITY WILL BE COMMUNICATED AS SOON AS WE HAVE AN INDICATION FOR THE EXPANSION RESULT

QUESTIONS?

You are welcome to contact us



Rune H. Gjermundbo
Head of Department Sales and Planning
rhg@gasstorage.dk
+45 61 24 02 14

Iliana Nygaard
iny@gasstorage.dk
+45 61 24 34 03

Mads Vejlby Boesen
mvb@gasstorage.dk
+45 30 67 47 27

FINAL REMARKS

Clement Johan Ulrichsen, Energinet Gas TSO

QUESTIONS

Contact: cju@energinet.dk