gasunie
crossing borders in energy

Hamburg, 15/03/2016

Shipper Forum: Special Nomination Product

Introduction, details & consultation process



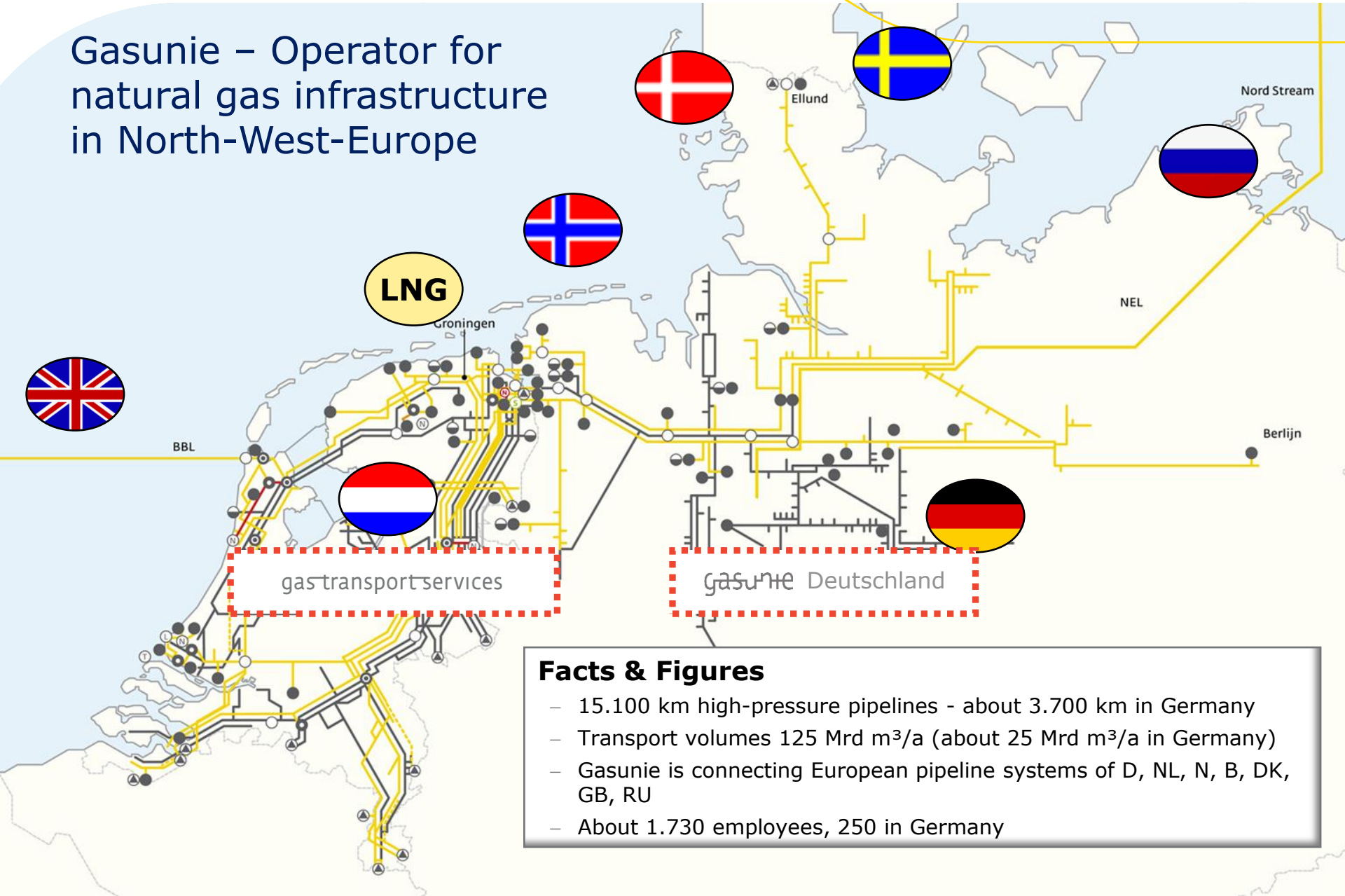
Agenda

- Status and development at Ellund – The German perspective
  Markus Neuhaus (GUD)
- Status and development at Ellund – The Danish perspective
  Christian Allan Rutherford (ENDK)
- Introduction of the new product: Special nomination arrangement
  Ann-Kristin Kahmann (GUD)
- Launching the public consultation process
  Ann-Kristin Kahmann (GUD)
- Further questions & discussion



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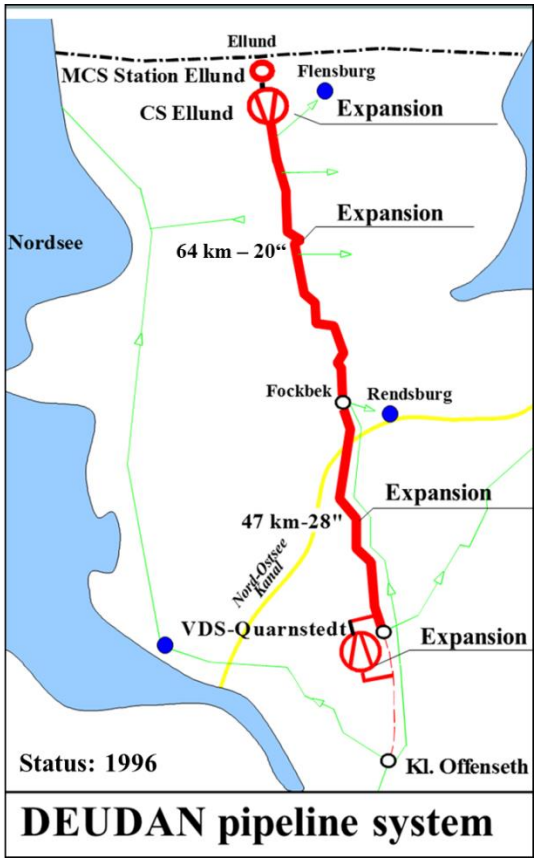
Gasunie – Operator for natural gas infrastructure in North-West-Europe



Facts & Figures

- 15.100 km high-pressure pipelines - about 3.700 km in Germany
- Transport volumes 125 Mrd m³/a (about 25 Mrd m³/a in Germany)
- Gasunie is connecting European pipeline systems of D, NL, N, B, DK, GB, RU
- About 1.730 employees, 250 in Germany

Development of northbound capacities at Ellund



DEUDAN pipeline system

1996: DEUDAN (joint venture GUD & OGE)
Extension finished
CS Ellund (2x5 MW) & CS Quarnstedt (2x2,8 MW)
Pipelines Quarnstedt-Fockbek & Ellund-Fockbek

→ Technical firm Capacities at Exit Ellund 417.837 kWh/h

DEUDAN-upgrade

→ Technical firm Capacities at Exit Ellund 441.118 kWh/h

2009: Integrated Open Season

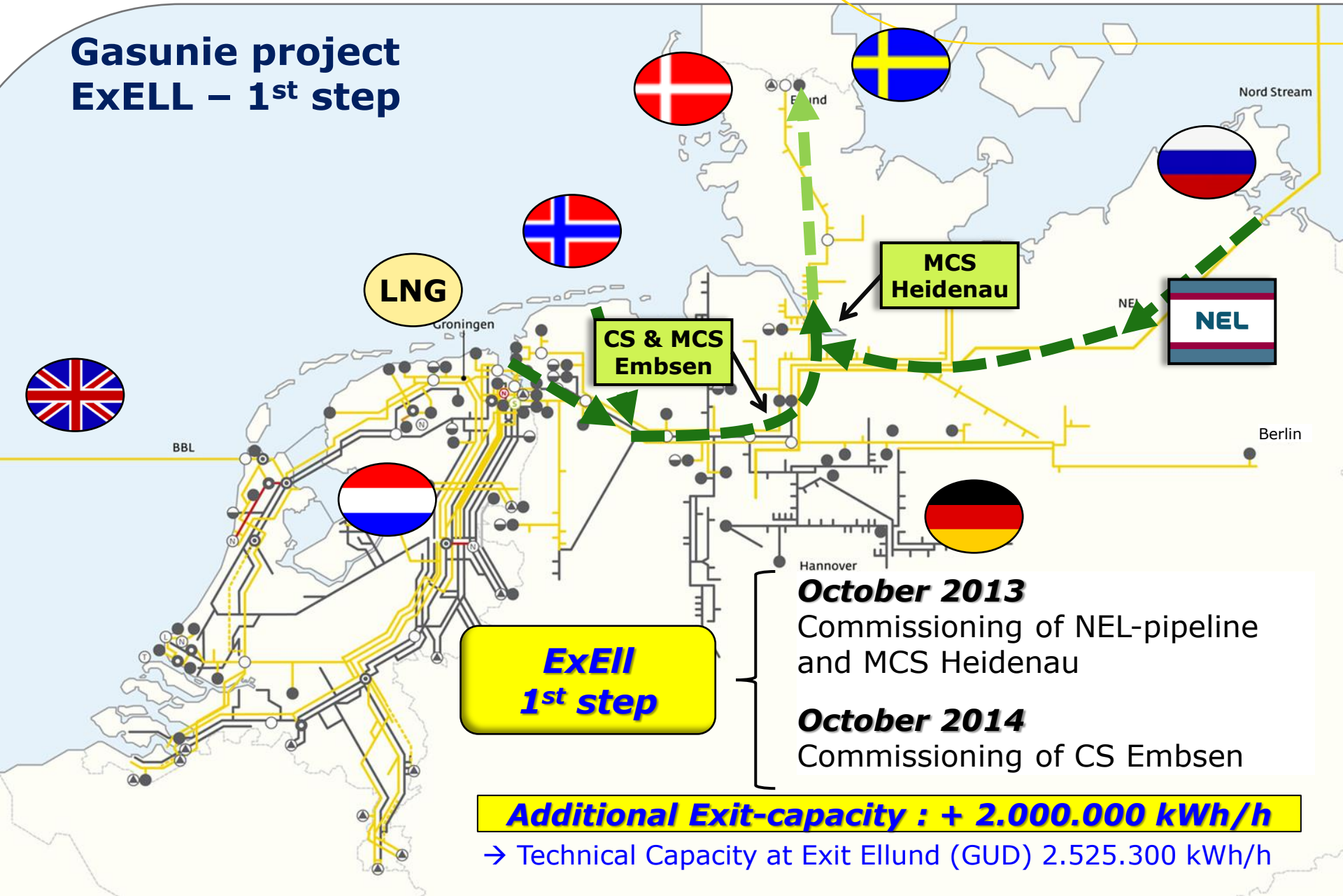
2010: First physical flow towards Denmark

2010: Operational Agreement for interruptible capacities (ENDK and GUD)

2011: Investment decision for "ExEll-project"

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Gasunie project ExELL – 1st step



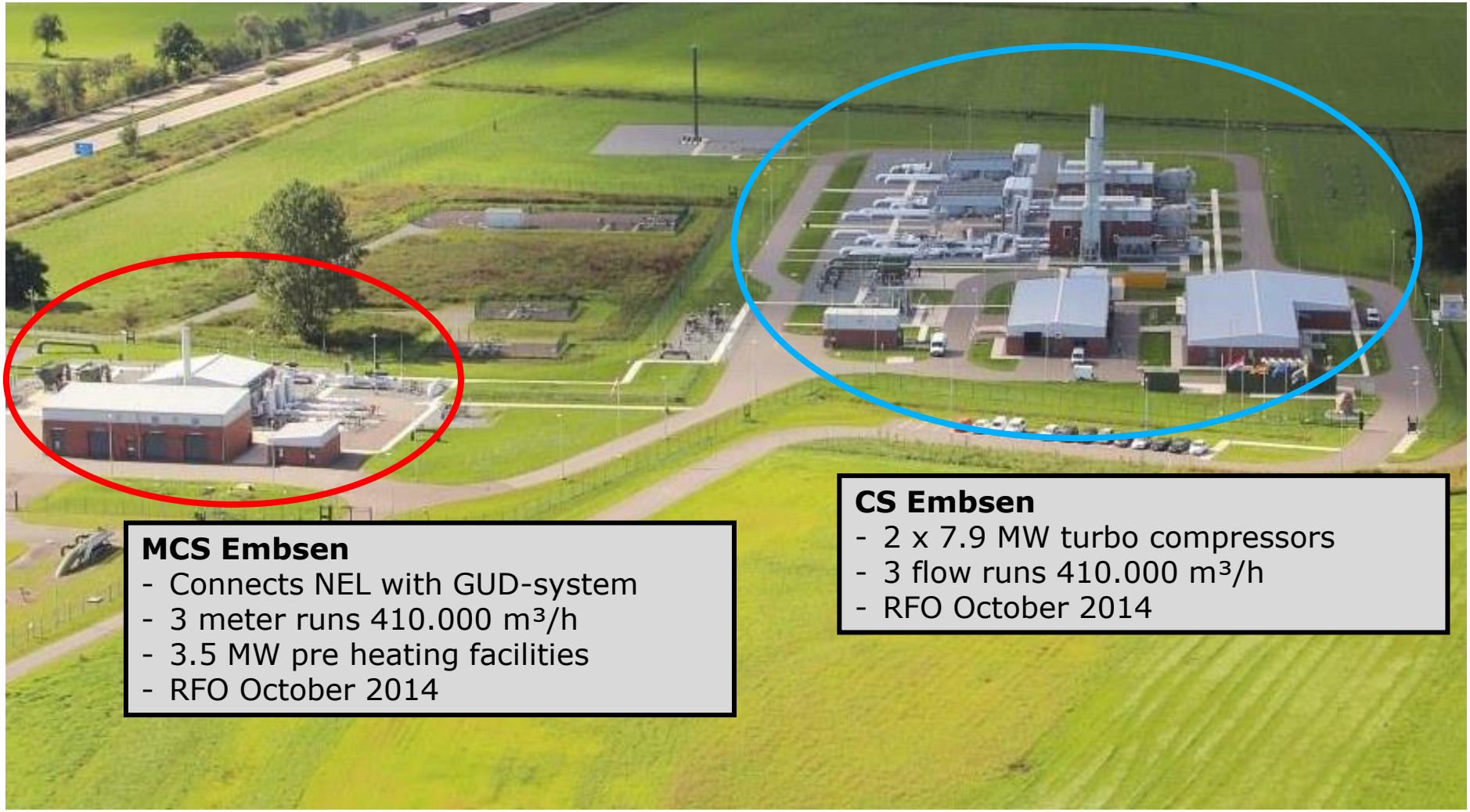
October 2013
Commissioning of NEL-pipeline and MCS Heidenau

October 2014
Commissioning of CS Embsen

Additional Exit-capacity : + 2.000.000 kWh/h

→ Technical Capacity at Exit Ellund (GUD) 2.525.300 kWh/h

CS & MCS Embsen

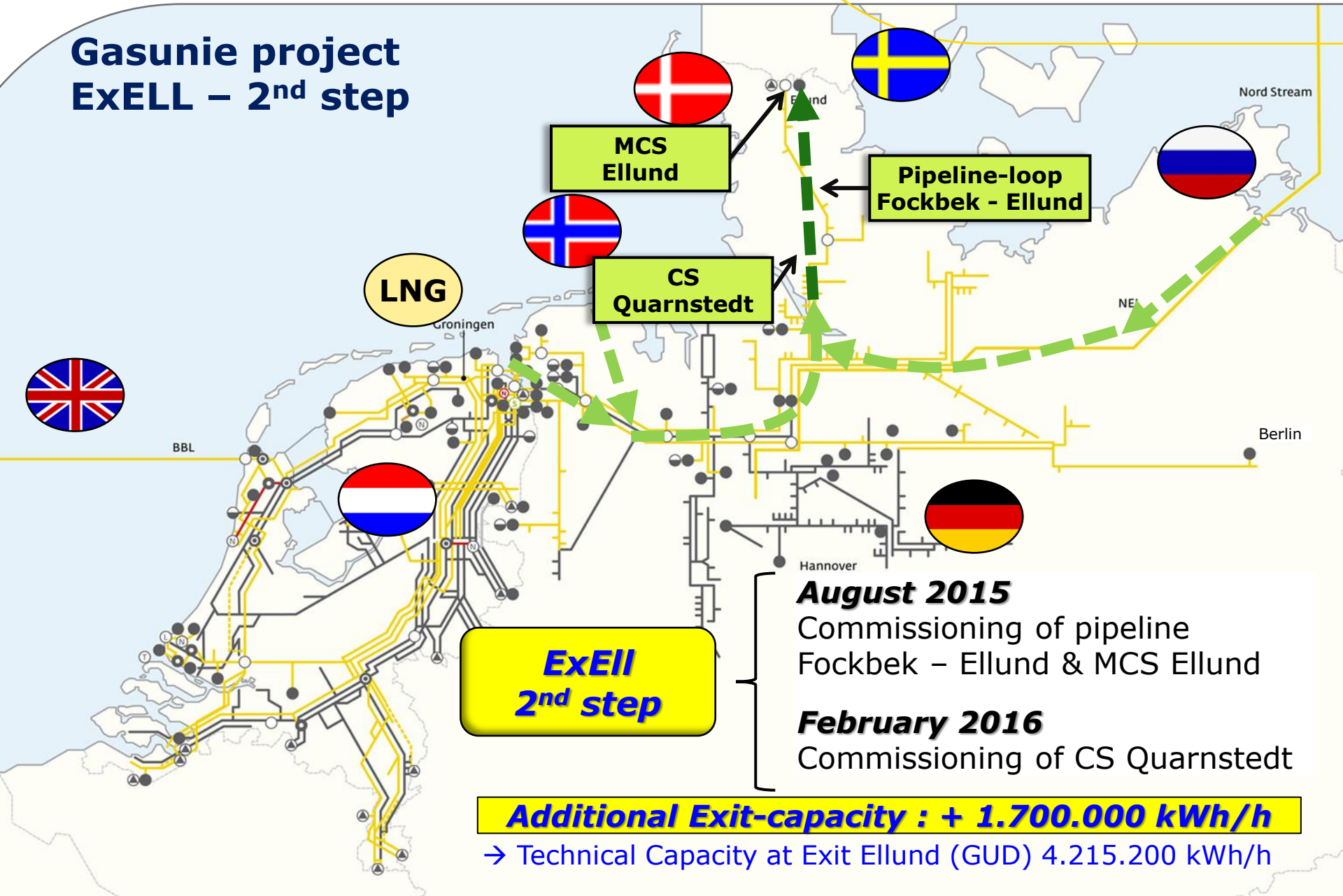


MCS Embsen
- Connects NEL with GUD-system
- 3 meter runs 410.000 m³/h
- 3.5 MW pre heating facilities
- RFO October 2014

CS Embsen
- 2 x 7.9 MW turbo compressors
- 3 flow runs 410.000 m³/h
- RFO October 2014

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Gasunie project ExELL – 2nd step



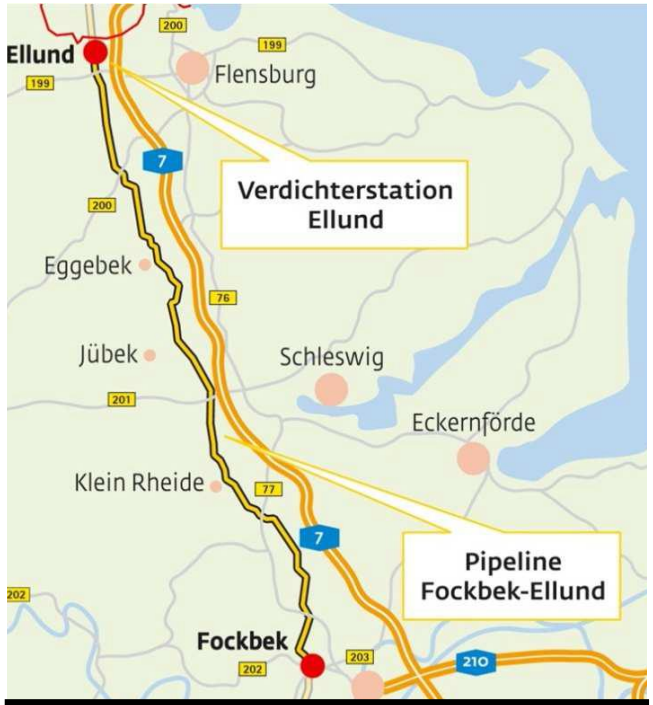
August 2015
Commissioning of pipeline Fockbek – Ellund & MCS Ellund

February 2016
Commissioning of CS Quarnstedt

Additional Exit-capacity : + 1.700.000 kWh/h

→ Technical Capacity at Exit Ellund (GUD) 4.215.200 kWh/h

Pipeline-loop Fockbek–Ellund & CS Quarnstedt

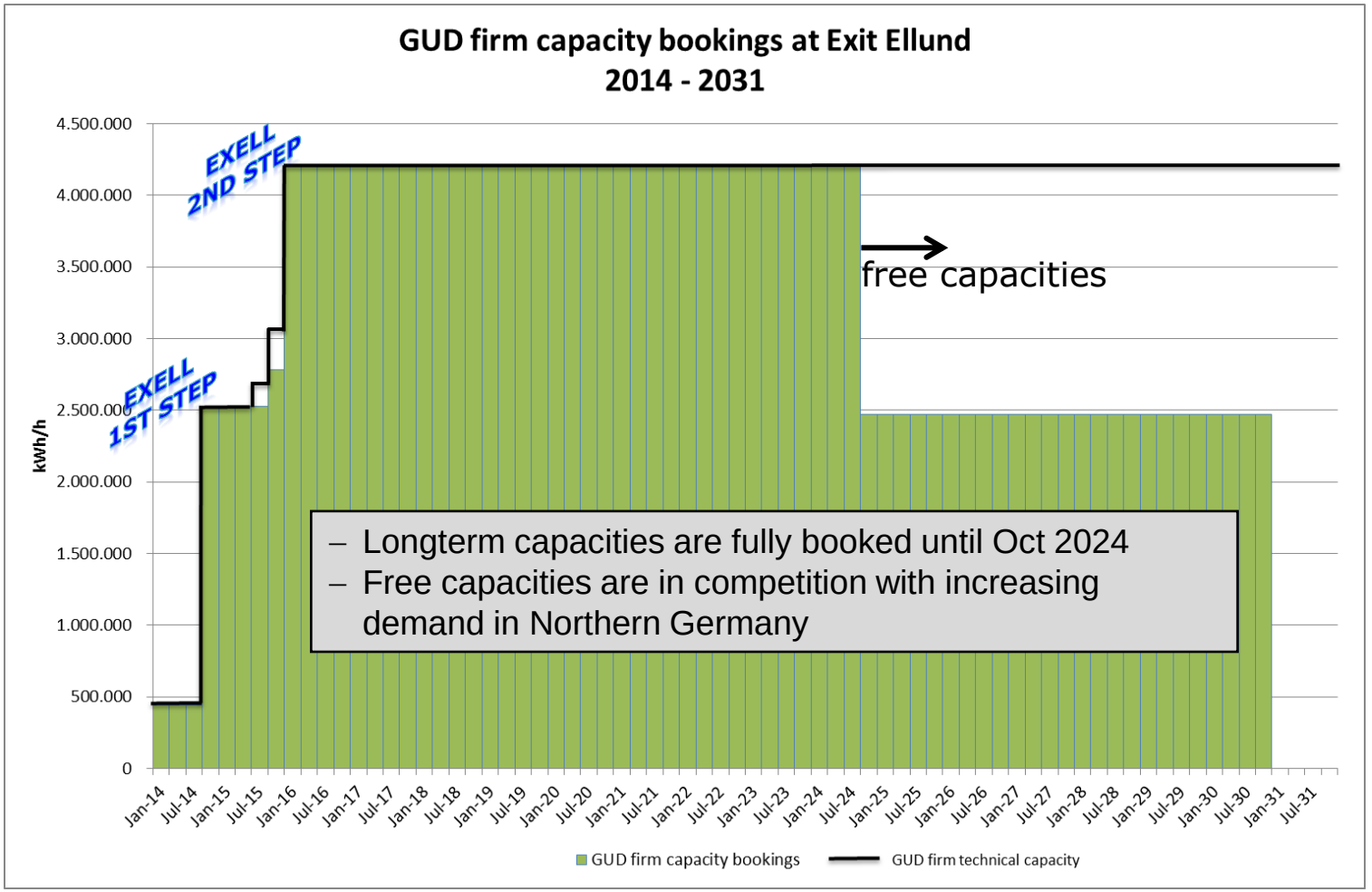


Pipeline-loop Fockbek-Ellund
- 36” (DN 900)
- 64 km / 84 barg
- RFO in August 2015

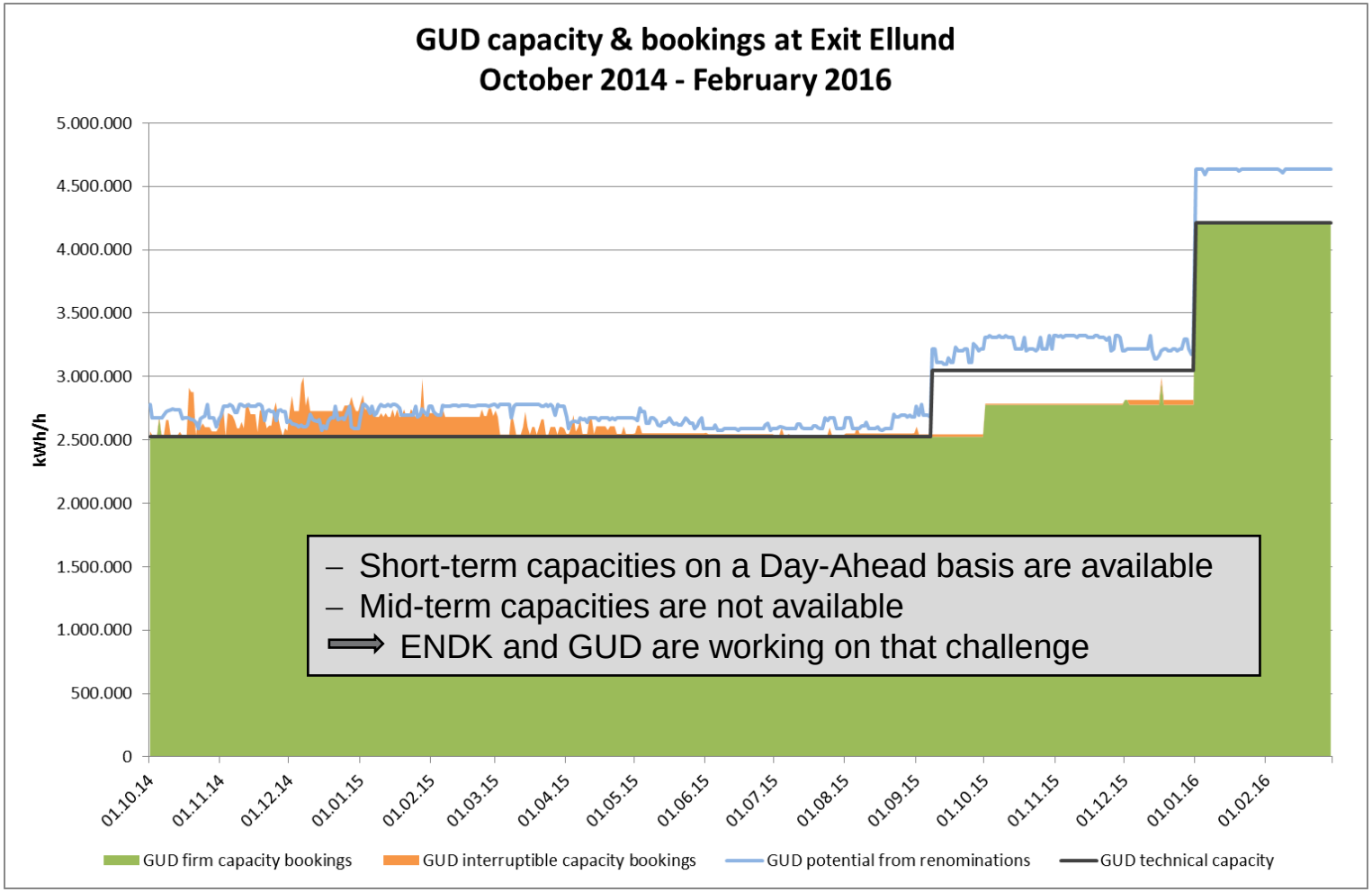


CS Quarnstedt
- 3 x 7.9 MW turbo compressors
- Commissioning on 11.02.2016

GUD long-term booking situation
2014 - 2031



GUD short-term booking situation
Oct 2014 – Feb 2016



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Status and development at Ellund

- The Danish perspective

Christian Rutherford – Team Manager - Energinet.dk



Agenda

1. The story and status at the Ellund border point
   - The ”why”
   - The ”how”
   - The result

2. Zusammenarbeit – Gasunie Deutschland and Energinet.dk

3. Special nomination procedure – benefit from a Danish perspective

1. The story and status at the Ellund border point



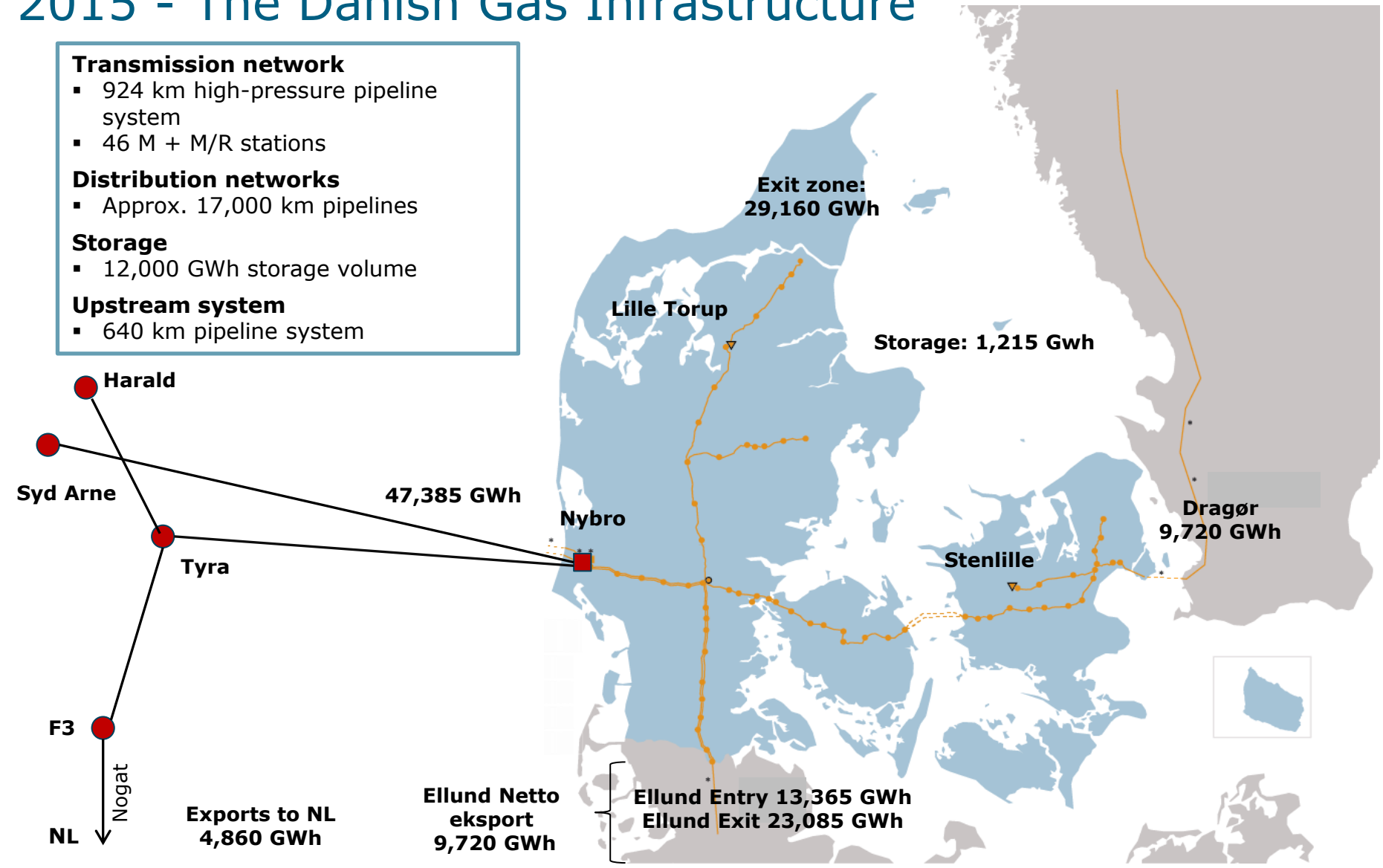
2015 - The Danish Gas Infrastructure

Transmission network
- 924 km high-pressure pipeline system
- 46 M + M/R stations

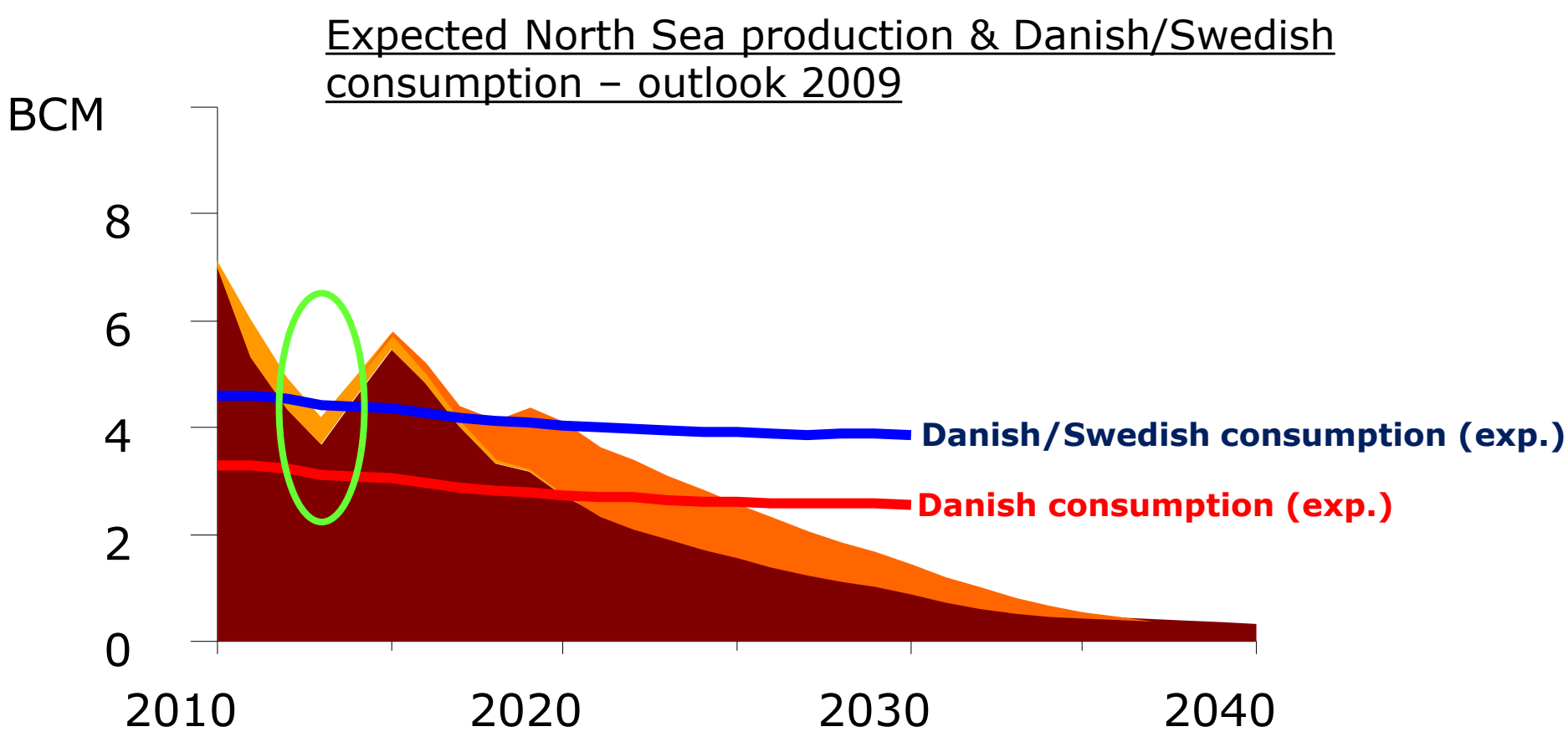
Distribution networks
- Approx. 17,000 km pipelines

Storage
- 12,000 GWh storage volume

Upstream system
- 640 km pipeline system



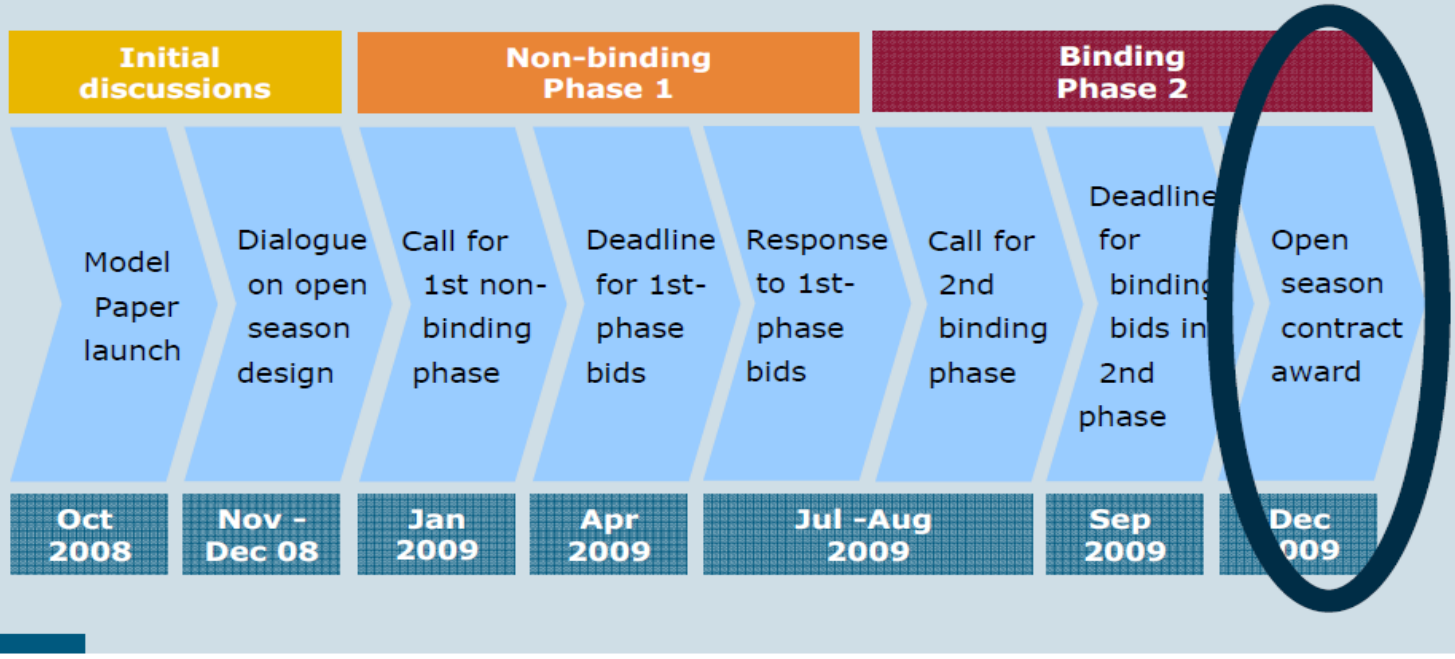
The ”why”


Expected North Sea production & Danish/Swedish consumption – outlook 2009
BCM
8
6
4
2
0
2010
2020
2030
2040
Danish/Swedish consumption (exp.)
Danish consumption (exp.)

The ”how” – Open Season 2009

1. Status on Open Season 2009

Time schedule
- End of phase 2



Open Season 2009 – end result

1. Status on Open Season 2009

From 12 to 1 possible investment combinations

- Sæby disappeared with Skanled
- Avedøre disappeared with Baltic Pipe
- Dragør did not receive any long term bids
  - But maybe somebody forgot to bid?



The following Investment Combinations are included in OS 2009:

Investment Combination 1	Investment Combination 2	Investment Combination 3	Investment Combination 4	Investment Combination 5	Investment Combination 6	Investment Combination 7
Avedøre		Avedøre	Avedøre	Avedøre	Avedøre	Avedøre
Dragør	Dragør		Dragør	Dragør		
Ellund	Ellund	Ellund		Ellund	Ellund	
Sæby	Sæby	Sæby	Sæby			Sæby

Investment Combination 8	Investment Combination 9	Investment Combination 10	Investment Combination 11	Investment Combination 12
Dragør	Dragør		Ellund	
Ellund		Ellund		
	Sæby	Sæby		Sæby

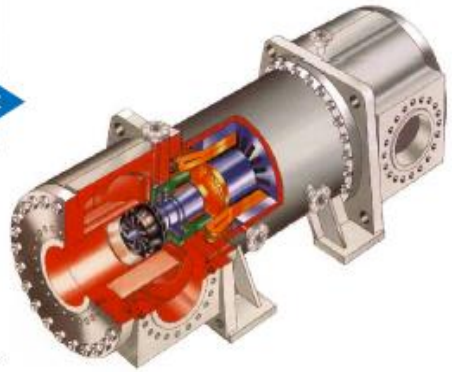
The result – the Egtved compressor station



Egtved compressor station

- New possibilities
  - Higher flexibility
  - Higher capacity
- 4 compressor units (3+1)
  - 350,000 Nm^3/h / unit
  - 5.4 MW / 7,720 hp / unit
  - Maximum capacity: 1,050,000 Nm^3/h
- Possibility to support flow in all directions







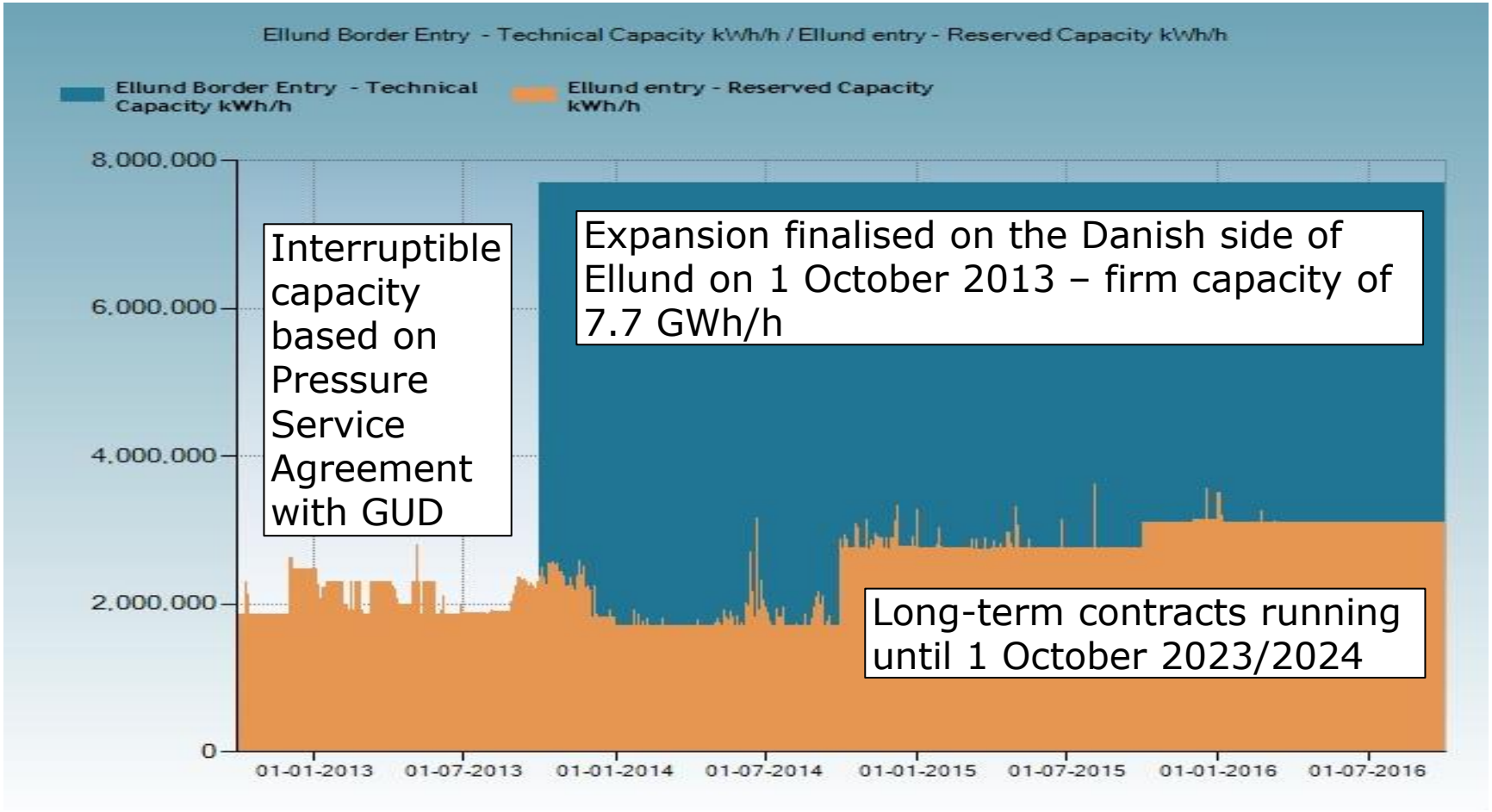


Doubling the Ellund-Egtved pipeline





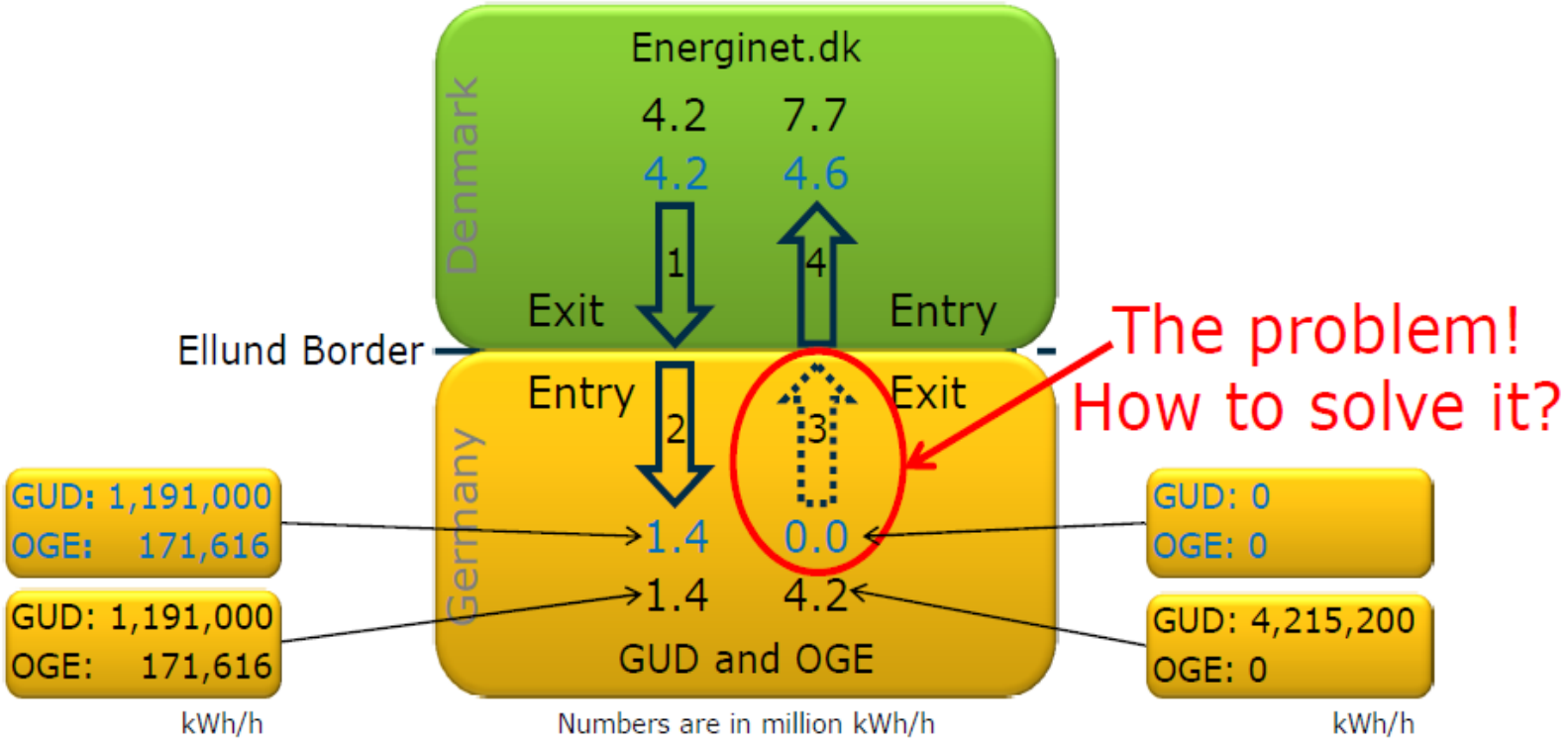
The result – present and current capacity situation



2. Zusammenarbeit – Gasunie Deutschland and Energinet.dk



Capacity situation at Ellund – Firm, 1 Jan. 2016



Available capacity = Blue

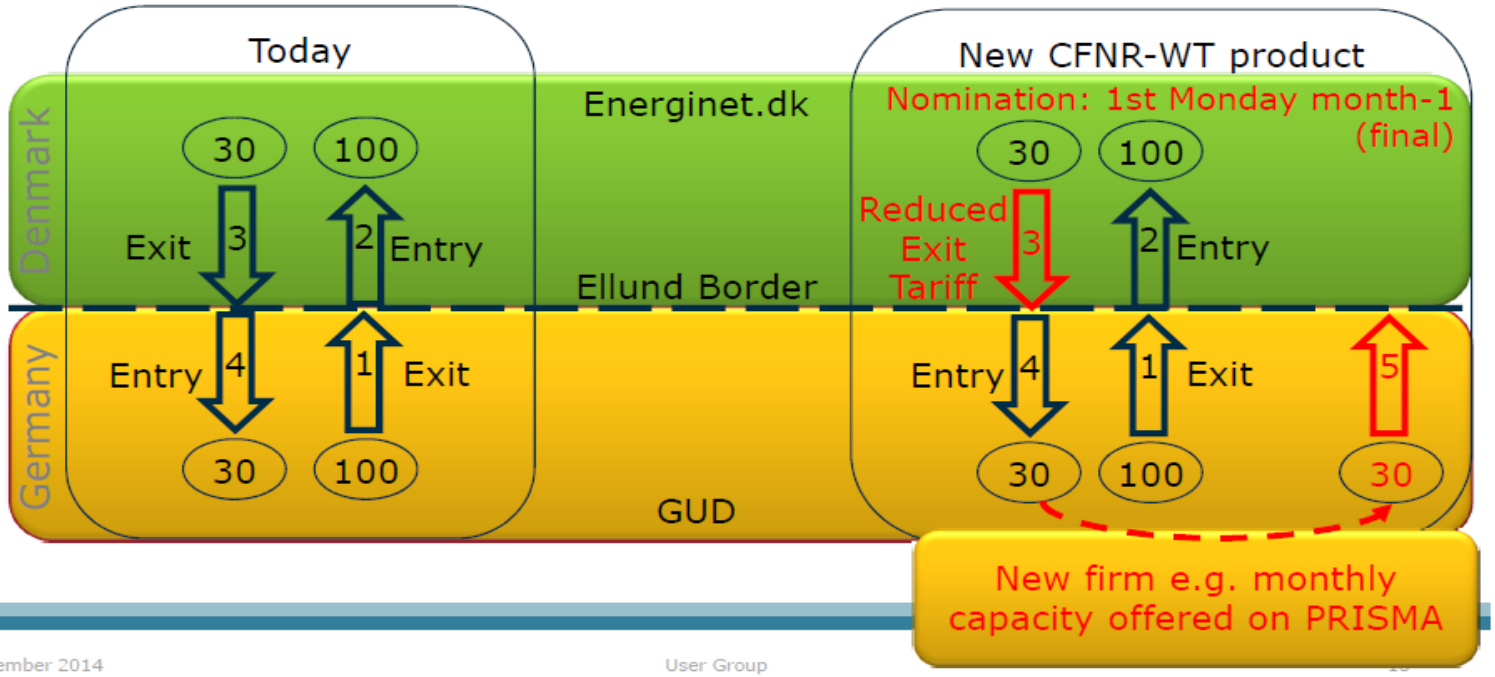
Technical capacity = Black

Future new capacity has already been allocated to Open Season contracts - GUD

Option 1 – CFNR – with a twist

Counter-Flow Nomination Right – with a twist

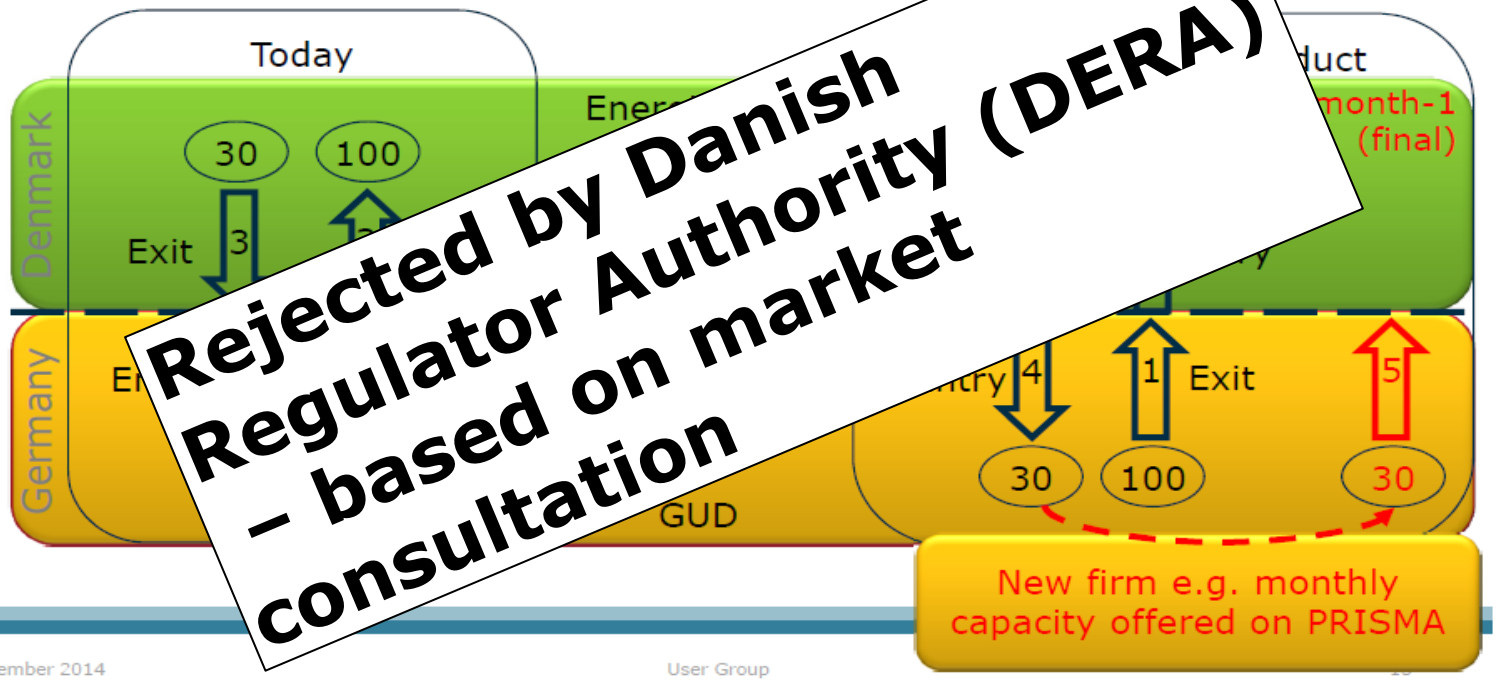
- Counter-Flow Nomination Right (CFNR) – an option at GUD today
- Here with a twist – to release firm e.g. monthly capacity on the Germany side



Option 1 – CFNR – with a twist

Counter-Flow Nomination Right – with a twist

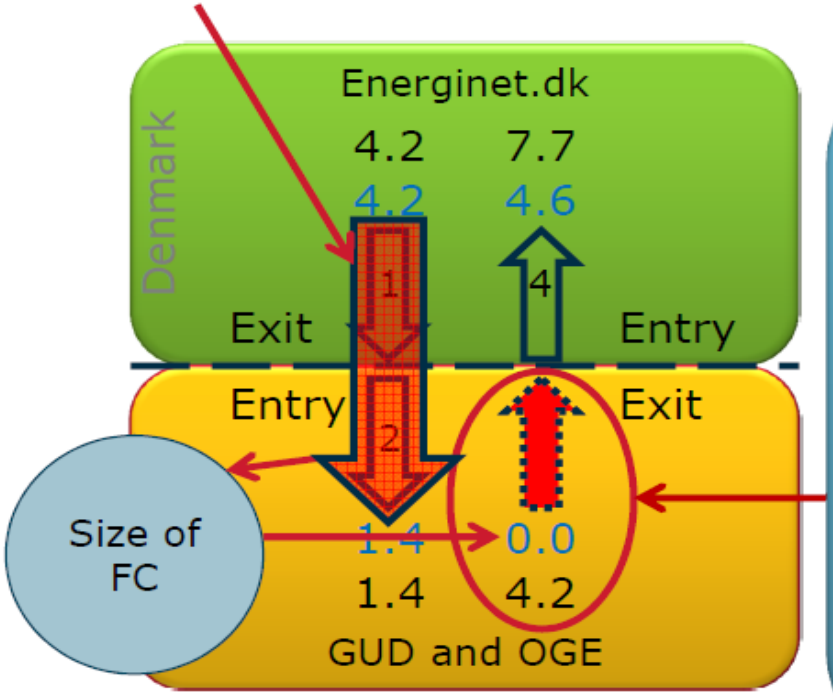
- Counter-Flow Nomination Right (CFNR) – an option at GUD today
- Here with a twist – to release firm e.g. monthly capacity on the G de



Rejected by Danish Regulator Authority (DERA) – based on market consultation

Option 2 – Flow Commitments

Flow Commitment – Shipper requirements



Numbers are in million kWh/h

Available capacity = Blue
Technical capacity = Black

Energinet.dk requirements in relation to shippers:

1. Holding Ellund Capacity:
   - Firm Exit (DK) and
   - Firm Entry (DE) GUD or OGE

   (e.g. must be booked as year or quarter products, in order to create a month product)
   (only available as bundled cap.)

2. Nomination restrictions
   - See next slide

Option 2 – Flow Commitment



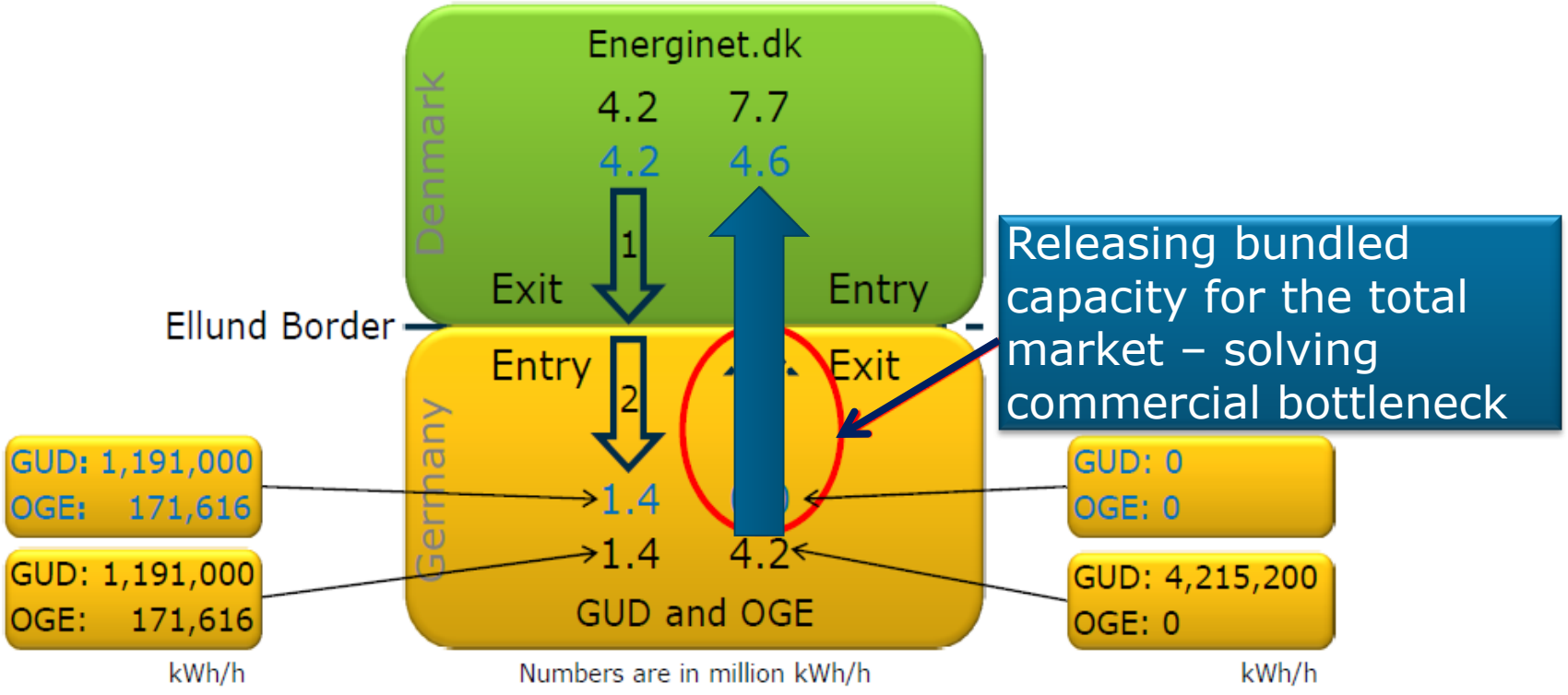
Still a possible solution – Energinet.dk to forward 2nd version to DERA...

...but only if the special nomination procedure is not introduced at GUD...

3. Special nomination procedure – benefit from a Danish perspective



Capacity situation at Ellund – Firm, 1 Jan. 2016



Available capacity = Blue

Technical capacity = Black

Future new capacity has already been allocated to Open Season contracts - GUD

Conclusions

1. Both Energinet.dk and Gasunie Deutschland conducted Open Seasons to collect investment signals for the future supply and demand situation
   - Result: expanding the Ellund capacity towards the Danish/Swedish market

2. Energinet.dk and Gasunie Deutschland have worked closely together over the last couple of years to solve the commercial bottleneck towards Denmark/Sweden

3. The new special nomination procedure at Gasunie Deutschland is a possible solution to the capacity challenge at Ellund

Thank you for your time!

Christian Rutherford
Customers and Market Development
cru@energinet.dk

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Art. 6 NC CAM

Article 6

Capacity calculation and maximisation

1. The maximum technical capacity shall be made available to network users, taking into account system integrity, safety and efficient network operation.

Art. 6 sec. 4 NC CAM

(4) transmission system operators shall have regard to information that network users may provide with regard to expected future flows when re-calculating the technical capacity.

The new product: Special nomination arrangement

- Shippers can optimize their capacity bookings
  - Enables participants to immediately redeliver to the GUD system a quantity previously offtaken from the GUD system
  - No need to book entry and exit capacity in the network of energienet.dk in respect of the quantity remaining in Germany
- GUD can maximise supply of firm capacity at Exit Ellund
  - GUD can take information into account and increase firm Exit capacities at Ellund
  - Higher capacity amount can be offered in monthly auction
- But requirements apply
  - Long term nomination for Entry GUD capacity
  - Renomination restriction for Entry GUD nomination
  - Network point must be sold out (long-term)
  - Option of single sided nomination not available (only for this arrangement)

A few facts ahead I

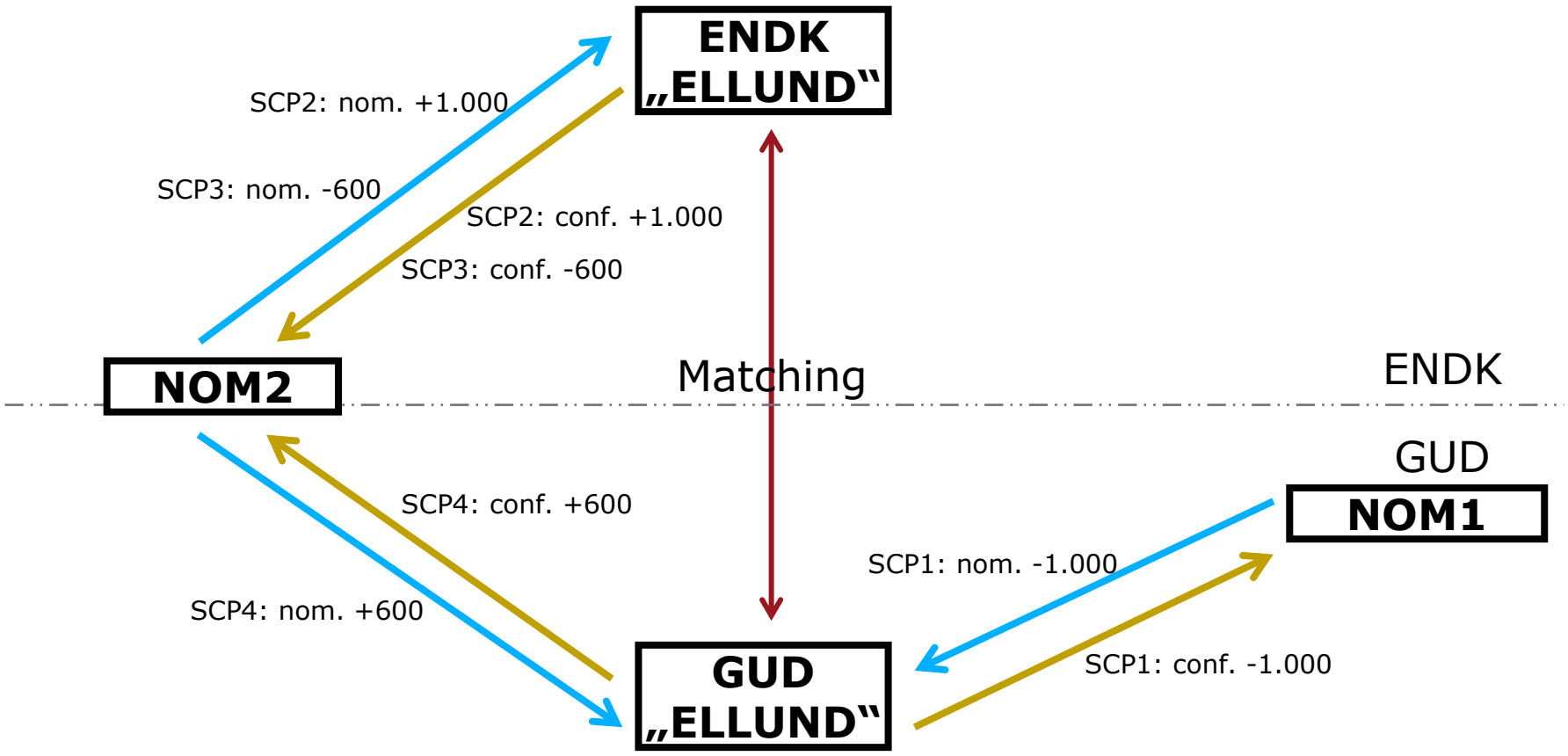
- Two participants
  - Shipper / Balancing group manager with Exit capacity at ELLUND GUD (NOM1)
  - Shipper / Balancing group manager with Entry capacity at ELLUND GUD (NOM2)
  - NOM1 and NOM2 could be the same as well as two different participants

- To-Do for GUD
  - New auxiliary Point “ELLUND_HP”
  - New special Shippercodes for the use of this special nomination arrangements

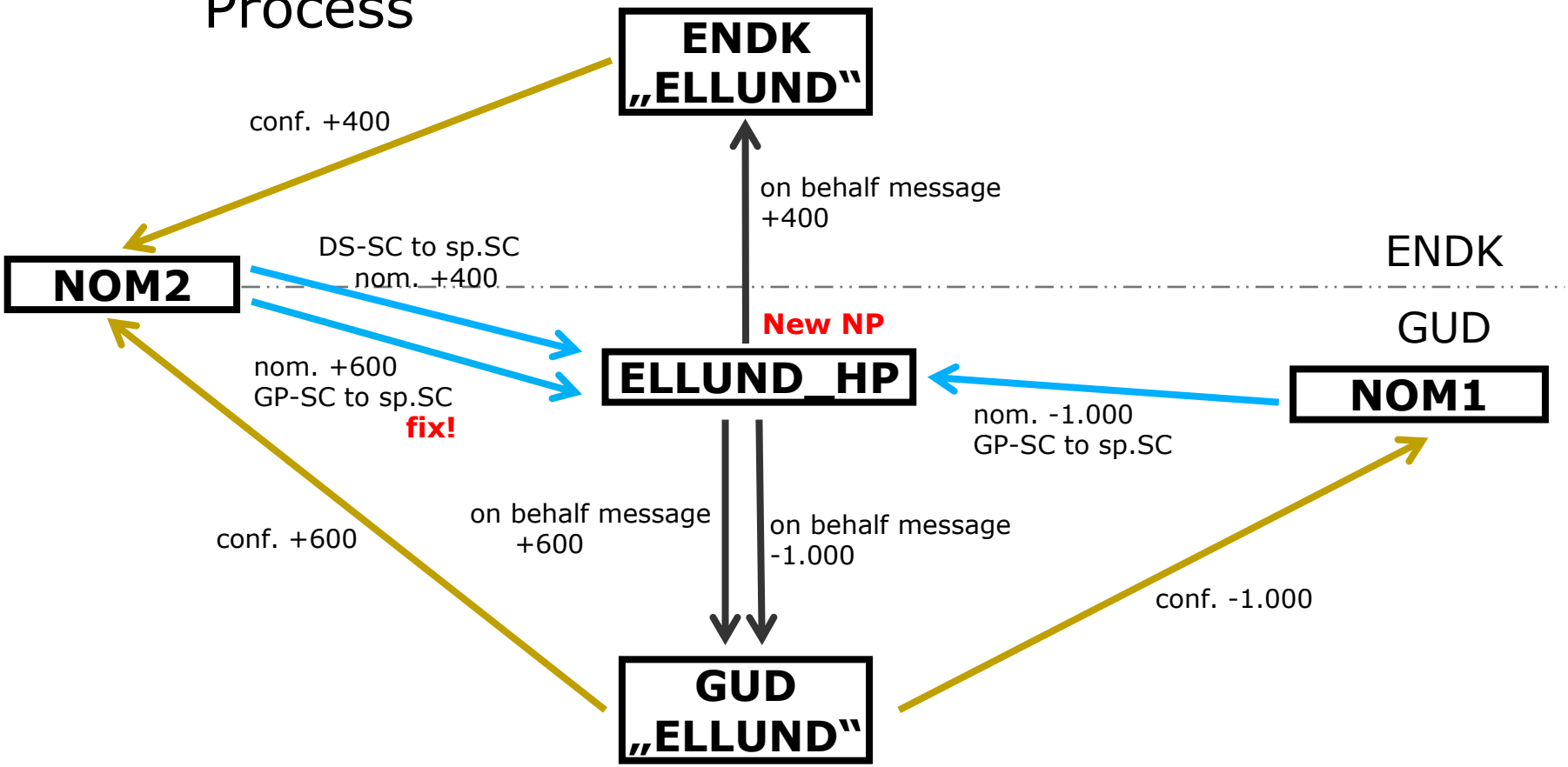
A few facts ahead II

- NOM1
  - Participates by nominating ELLUND_HP instead of "original" Ellund on special Shippercode
  - No need for further contract
- NOM2
  - Participates by nominating ELLUND_HP instead of "original" Ellund on special Shippercode
  - Furthermore NOM2 has to enter a contract with GUD that sets out more operational details

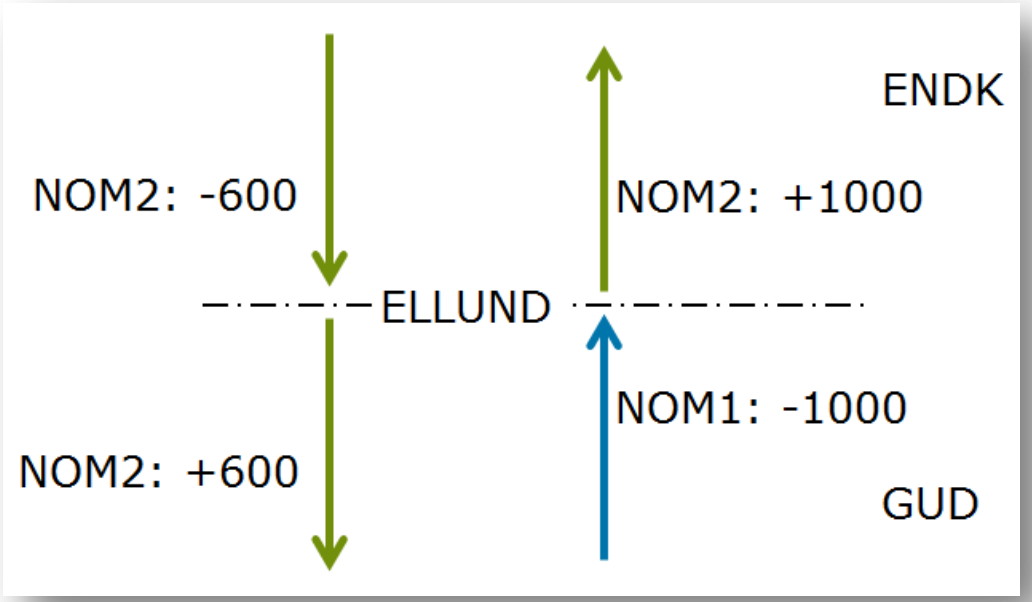
Current nomination process



Special Nomination Arrangement: Nomination Process

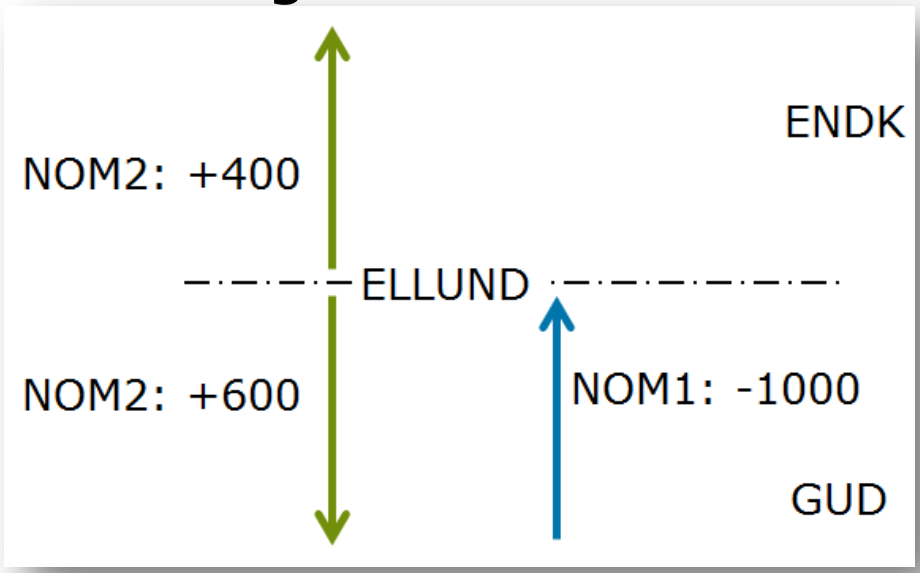


The current need of bookings…



- NOM1
  - 1.000 Exit Ellund GUD capacity
- NOM2
  - 1.000 Entry Ellund ENDK capacity
  - 600 Exit Ellund ENDK capacity
  - 600 Entry Ellund GUD capacity

… compared to the special nomination arrangement need of bookings



- NOM1:
  - 1.000 Exit Ellund GUD capacity
- NOM2:
  - 400 Entry Ellund ENDK capacity
  - 600 Entry Ellund GUD capacity

  -> less capacity bookings by NOM2 needed, but same result

Special Nomination Arrangement: further facts

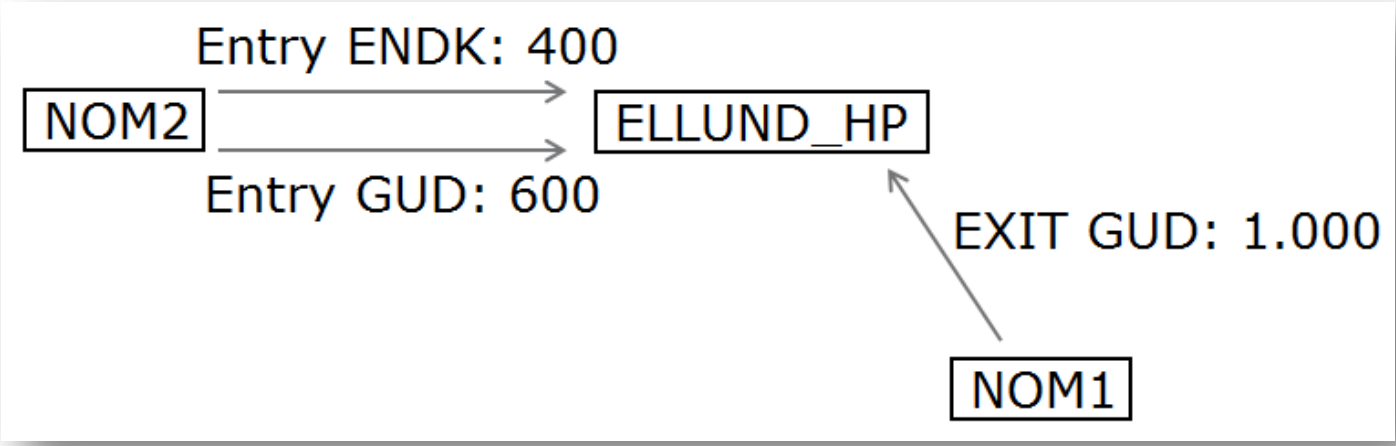
- NOM1 has to nominate on new auxiliary Point ELLUND_HP and on new special Shippercode named by GUD
- NOM2 has to do the same and makes separate nominations for entry Denmark and entry Germany
- Nomination for entry Germany has to be made around six weeks in advance and for a full month
- Renomination restriction for Entry GUD nomination
- Nominations will be matched at ELLUND_HP
  - Aggregated nominations of NOM2 with the nomination of NOM1
- Matched nominations will be forwarded to “original” Ellund-Points
- Confirmation of nomination will be send from “original” Ellund-Points

Matching at ELLUND_HP I

- Matching is different to the usual matching process
- Both nominations of NOM2 (aggregated) will be matched with nomination of NOM1
- If the quantities do not match, the lesser rule will apply
- The nomination Entry GUD (renomination restricted) will be reduced only as a last resort

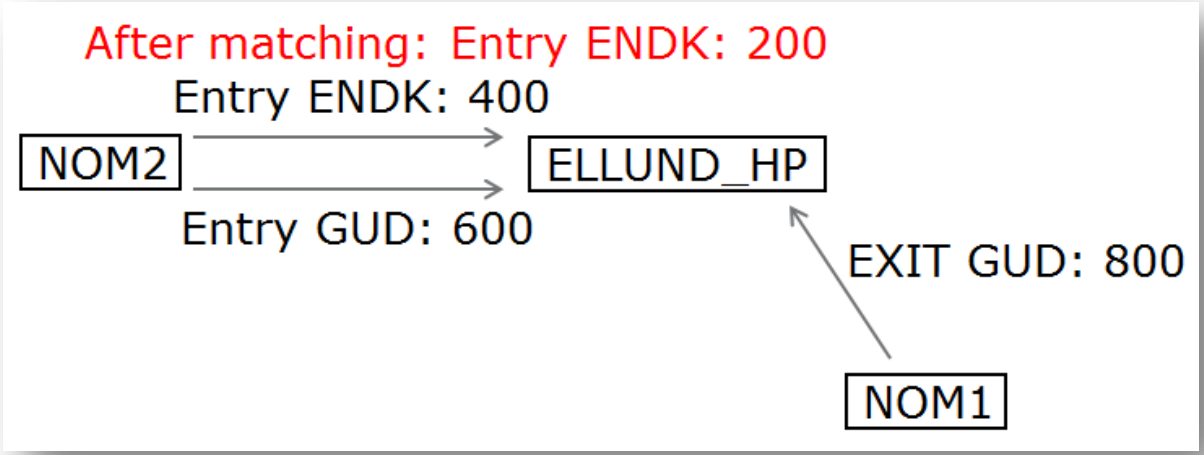
Matching at ELLUND_HP II

- NOM1 nominates 1.000 Exit GUD to ENDK
- NOM2 nominates 400 Entry ENDK and 600 Entry GUD
- Result: 400+600=1000
- The nominated quantities match



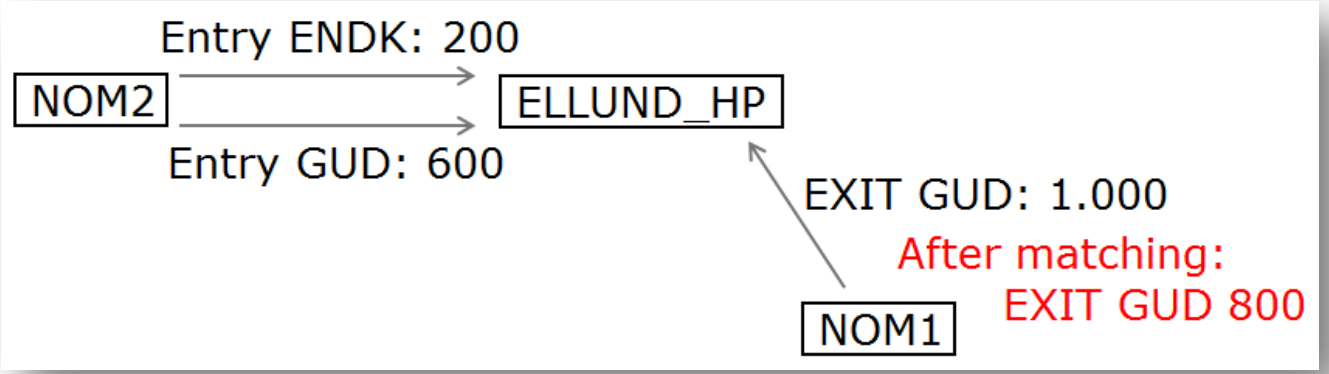
Matching at ELLUND_HP III

- NOM1 nominates 800 Exit GUD to ENDK
- NOM2 nominates 400 Entry ENDK and 600 Entry GUD
- 400+600≠800
- Lesser rule applies with attention to renomination restricted capacity
- Result:



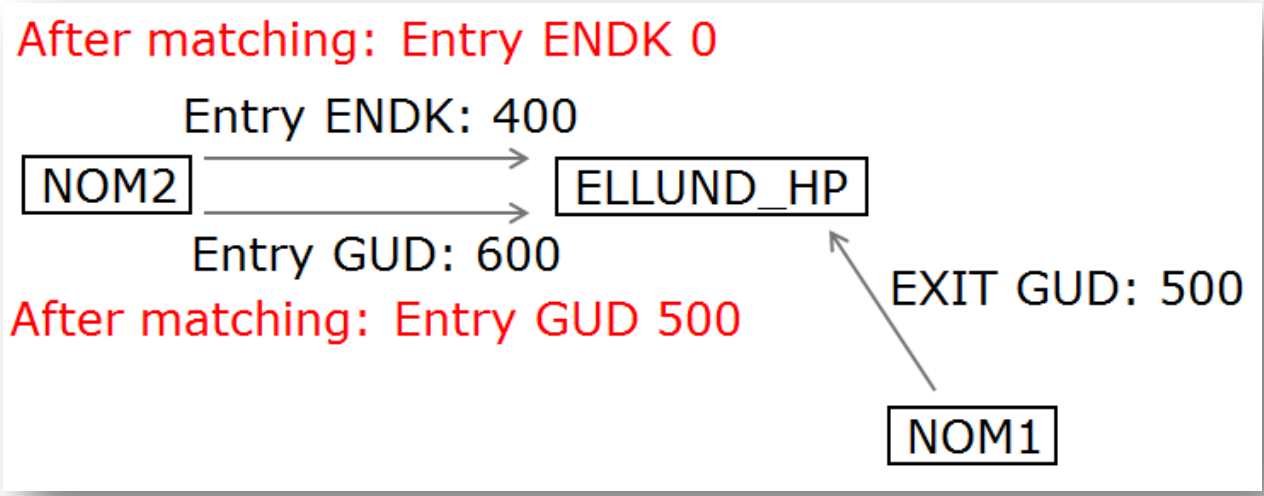
Matching at ELLUND_HP IV

- NOM1 nominates 1.000 Exit GUD to ENDK
- NOM2 nominates 200 Entry ENDK and 600 Entry GUD
- 200+600≠1000
- Lesser rule applies with attention to renomination restricted capacity
- Result:



Matching at ELLUND_HP V

- NOM1 nominates 500 Exit GUD to ENDK
- NOM2 nominates 400 Entry ENDK and 600 Entry GUD
- 400+600≠500
- Lesser rule applies, renomination restricted capacity has to be reduces as well
- Result:



Details & Requirements: participant NOM1

- Participant NOM1 is needed for Exit-nomination at ELLUND_HP
- NOM1 must hold exit capacity at Ellund (firm or interruptible)
- NOM1 has to agree to nominate at ELLUND_HP on new Shippercode named by GUD
- NOM1 has to agree to receive confirmation of nomination from “original” Ellund point
- No need for further contract

Details & Requirements: participant NOM2

- Participant NOM2 must hold entry capacity at ELLUND under a contract with GUD
- NOM2 has to agree to nominate at ELLUND_HP on new Shippercode named by GUD
- NOM2 has to agree to receive confirmation of nomination from “original” Ellund point
- Furthermore NOM2 has to enter a contract with GUD that sets out more operational details

Details: contract between GUD and NOM2

- Apart from the details described on the previous slide, the contract includes details concerning the following topics:
  - Object of Agreement
  - Capacity holdings
  - Nominations
  - Renominations
  - Matching of nominations
  - Breach of renomination restrictions

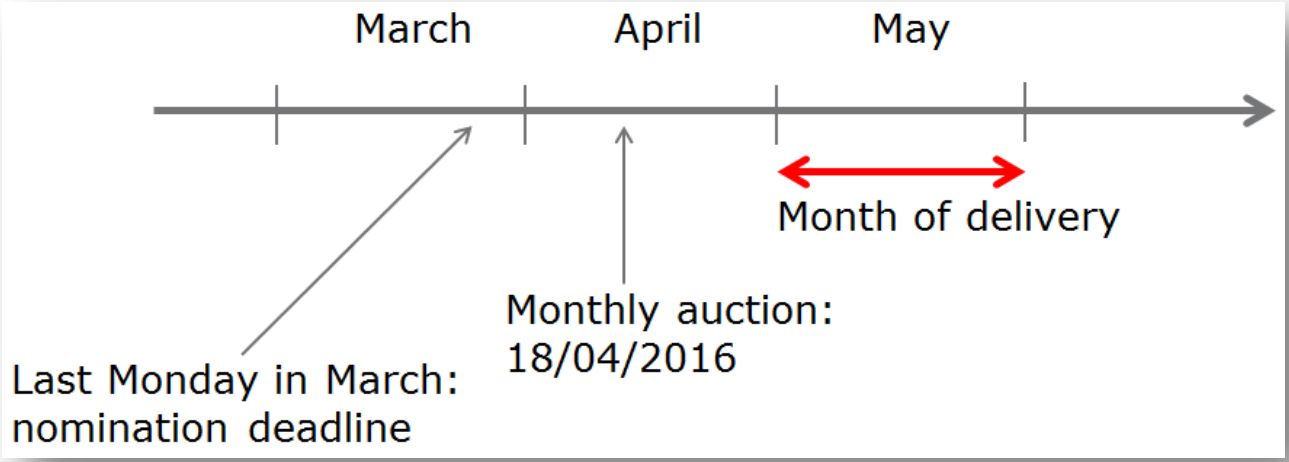
Closer look at the contract between GUD and NOM2 I

- Object of Agreement
  - Shipper/Balancing group manager undertakes to make certain entry nominations
  - This entry nomination may not exceed the nomination in the corresponding exit nomination

- Capacity holdings
  - Participant needs to hold capacities at Entry Ellund GUD for the duration of at least one quarter
  - Firm or interruptible
  - Start of delivery month: no less than the quantities nominated

Closer look at the contract between GUD and NOM2 II

- Nominations
  - Nomination on ELLUND_HP on special Shippercode to be named by GUD
  - Separate entry nominations for its transport to Germany and Denmark, both addressed to ELLUND_HP
  - Flat entry nomination to Germany
  - Entry nomination shall be made for an entire month and submitted on the last Monday in the second month preceding the month of delivery (nomination deadline)
  - Option of single sided nomination not available



Closer look at the contract between GUD and NOM2 III

- Renominations
  - Entry nominations to Germany are subject to renomination restrictions
  - Renominations may no longer be submitted after nomination deadline has expired

- Matching of nominations
  - Aggregated entry nominations to Denmark and Germany will be matched with corresponding exit nomination
  - If quantities do not match, lesser rule shall be applied
  - Nominations under renomination restriction will be reduced as a last resort

- Breach of renomination restrictions
  - In case of prohibited renomination, the shipper shall be liable for any loss or damage suffered by GUD or any third party

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What's next?

-> Consultation process

Please submit your response by emailing the "Consultation response" feedback form to Transport@gasunie.de by 31 March 2016 at the latest. Gasunie Deutschland Transport Services GmbH will publish all responses on the website www.gasunie.de and use them to further develop the special nomination arrangements. If you do not want your full response to be published, please also send an additional version of your response that is suitable for publication (i.e. a non-confidential version not containing any commercially sensitive or confidential information) to the above email address. If we do not receive a separate, non-confidential version of your response, we will assume that you have given your consent for your full response to be published.

-> Consultation documents



www.gasunie.de/en/main-menu/news/update-einladung-zum-shippersforum-am-15-marz-2016



www.gasunie.de/de/main-menu/nachrichten/update-einladung-zum-shippersforum-am-15-marz-2016

Agenda

- Status and development at Ellund – The German perspective
  Markus Neuhaus (GUD)
- Status and development at Ellund – The Danish perspective
  Christian Allan Rutherford (ENDK)
- Introduction of the new product: Special nomination arrangement
  Ann-Kristin Kahmann (GUD)
- Launching the public consultation process
  Ann-Kristin Kahmann (GUD)
- Further questions & discussion



Further questions & discussion

- Questions?
- Commentaries?

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