

THE BALANCING PRICES DURING A 'GAS CRISIS'

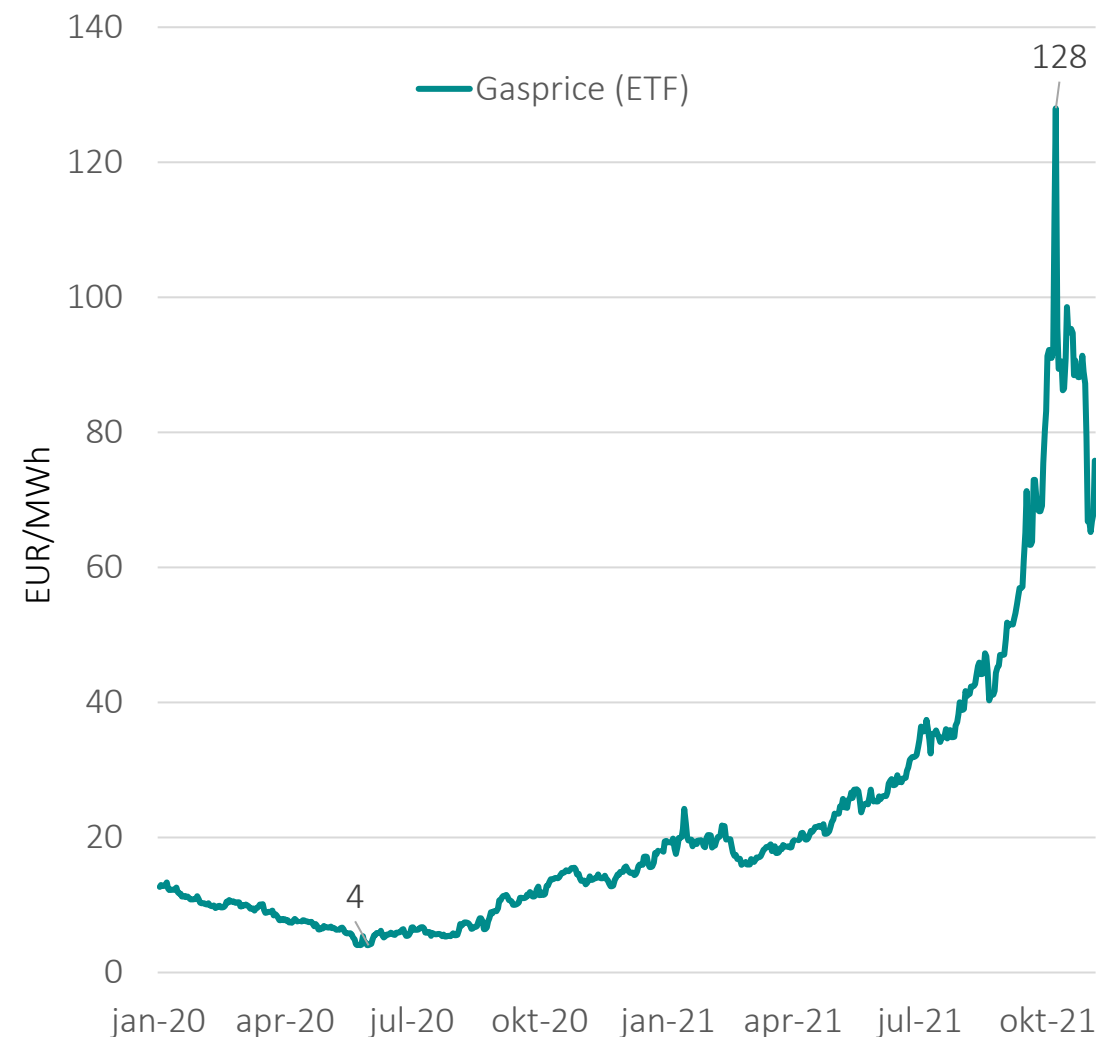
And why gas prices are so high

*Lasse Trøjborg Krogh,
Energinet*

SHARP INCREASE IN GAS PRICES

What happened from 2020 to 2021?

- ✓ Demand - higher
 - Long, cold winter in Europe and Asia 2020/21 – high demand to fill up empty storages.
 - Economies have opened after lock-downs
 - Coal-to-gas shifts in policies
 - Larger gas consumption for power production
- ✓ Supply - lower
 - Fewer deliveries from Russia and Norway in H1
 - Lower gas production in Europe
- ✓ LNG links the markets
 - High demand in Asia



IMBALANCE PRICES IN EMERGENCY

General Terms and Conditions for Gas Transport § 17.2.i

Force majeure price - a negative imbalance to Danish Exit Zone:

- The highest day-ahead Index set at either ETF or THE during the current storage year (1 May – 30 April)

Price for balancing gas - a negative imbalance to other points than the Danish Exit Zone (transit to Sweden/Germany):

- Highest price of either:
 1. Highest trading price by Energinet in the yellow zone during relevant gas day, or
 2. The relevant adjustment price (step 1 or 2, where the neutral gas price is replaced by the Force Majeure price in the formula)

Force majeure and emergency prices

Force majeure price*

The highest Day-ahead Index set at either EEX ETF or THE* during the current storage year (1 May - 30 April) *THE is valid from 1 October 2021, before the highest price reference is made towards Gaspool and NCG

In case a gas supply crisis (being either Early Warning, Alert or Emergency) is ongoing when entering a new storage year, it is still the price from the previous storage year that is valid after 1 May, until the crisis is cancelled.

Purchase price for balancing gas

Adjustment step 1:

When neutral gas price is positive: Neutral gas price minus 0.5 % of the neutral gas price

When neutral gas price is negative: Neutral gas price plus 0.5 % of the neutral gas price

Adjustment step 2:

Neutral gas price minus the respective percentage in the given month of the neutral gas price. If the neutral gasprice is negative, the respective percentage is added

Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
2%	3%	3%	4%	7%	10%	10%	4%	4%	4%	4%	4%

- Marginal purchase price:

Lowest price of either 1) lowest traded price by Energinet in the yellow zone during the relevant gas day, or 2) the relevant adjustment price (step 1 or 2).

Sales price for balancing gas

Adjustment step 1:

When neutral gas price is positive: Force majeure price plus 0.5 % of the neutral gas price

When neutral gas price is negative: Force majeure price minus 0.5 % of the neutral gas price

Adjustment step 2:

Force majeure price plus the respective percentage in the given month of the neutral gas price. If the neutral gas price is negative, the respective percentage is subtracted

Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
2%	3%	3%	4%	7%	10%	10%	4%	4%	4%	4%	4%

- Marginal sales price:

Highest price of either 1) highest traded price by Energinet in the yellow zone during the relevant gas day, or 2) the relevant adjustment price (step 1 or 2).

In situations of "Emergency", the percentages of adjustment step 1 and 2 can increase up to 100%.

* Payments covering deliveries in force majeure situations (including emergency)

Link: en.energinet.dk/Gas/Tariffs-and-Fees/Current-tariffs

ADJUSTMENT STEP 1 AND 2 PRICES DURING A 'GAS CRISIS'*

*Early Warning, Alert or Emergency

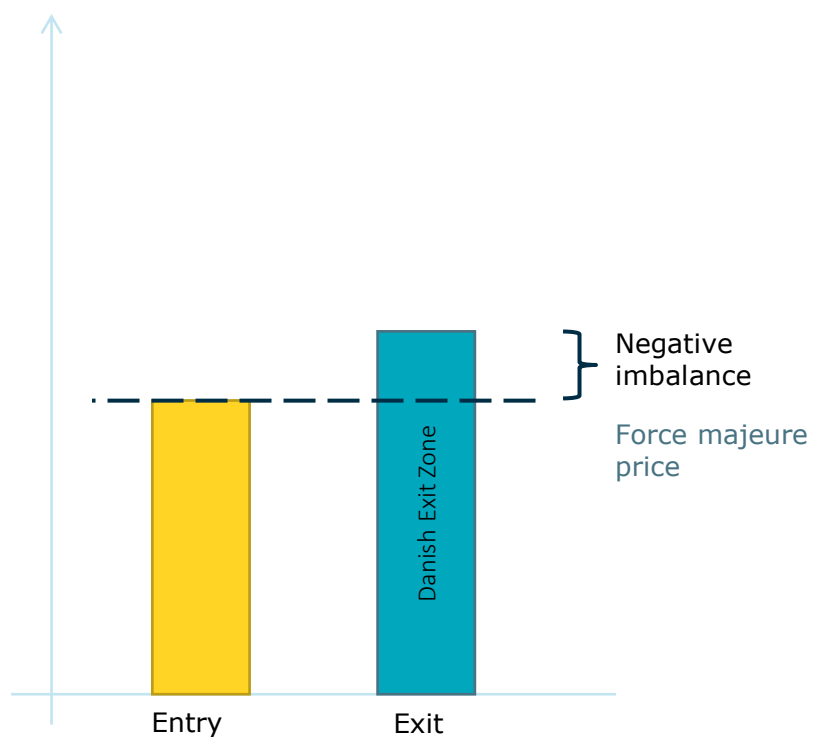
In any of the three crisis levels, Energinet may increase the adjustment percentages **up to 100 per cent for both adjustment 1 and 2**.

The increase can be done separately for being long or short – by only increasing one side (e.g. only for being short), or by increasing with different percentages for being long or short

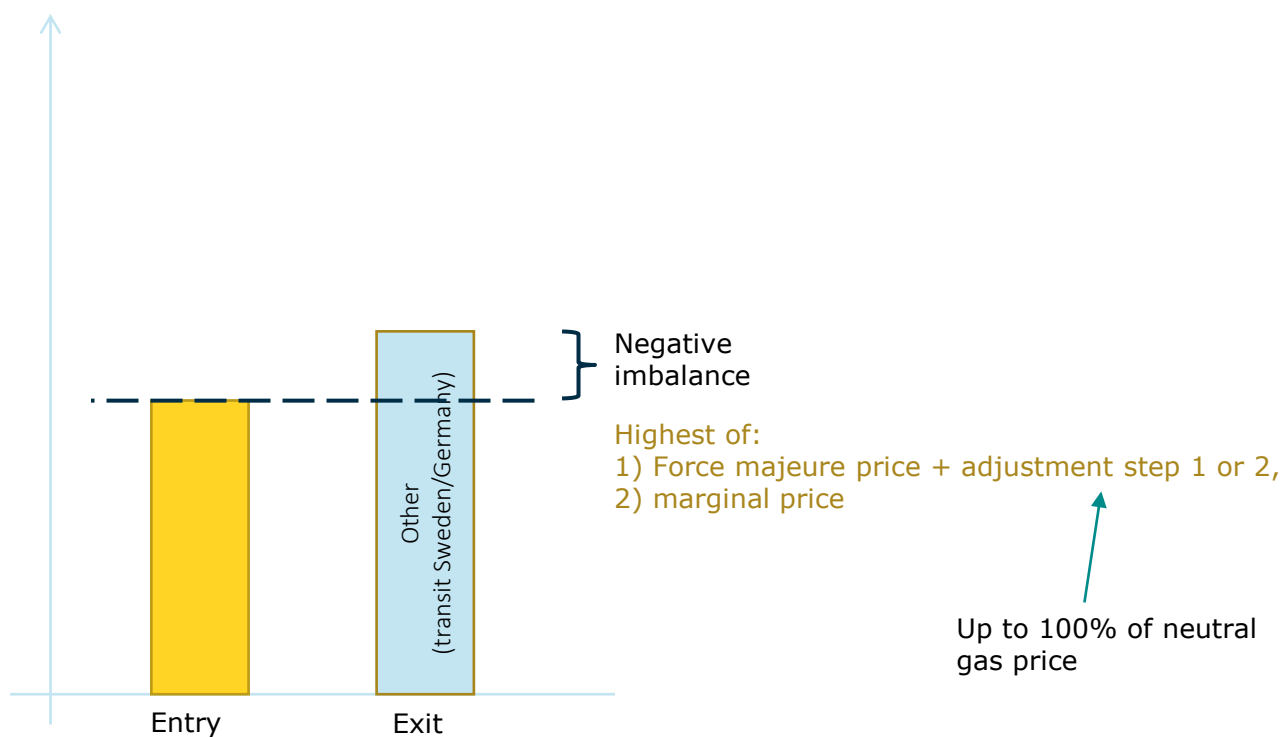
IMBALANCE PRICES DURING EMERGENCY

Negative imbalance - Two different scenarios

Scenario 1

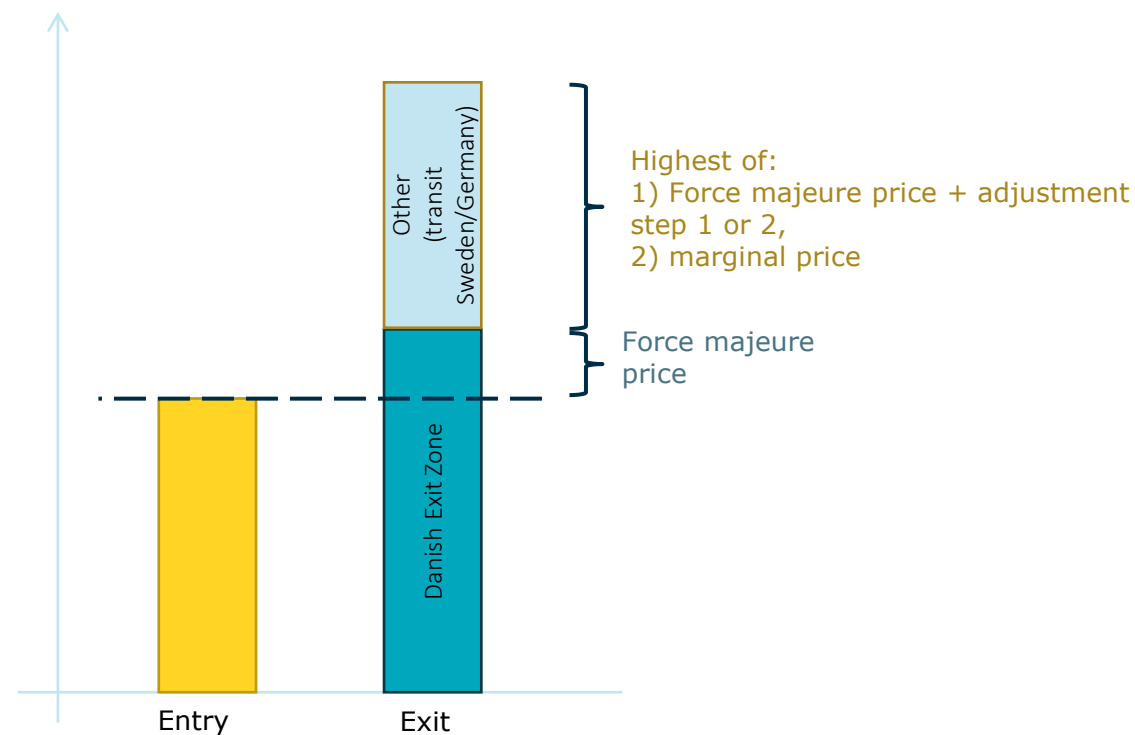
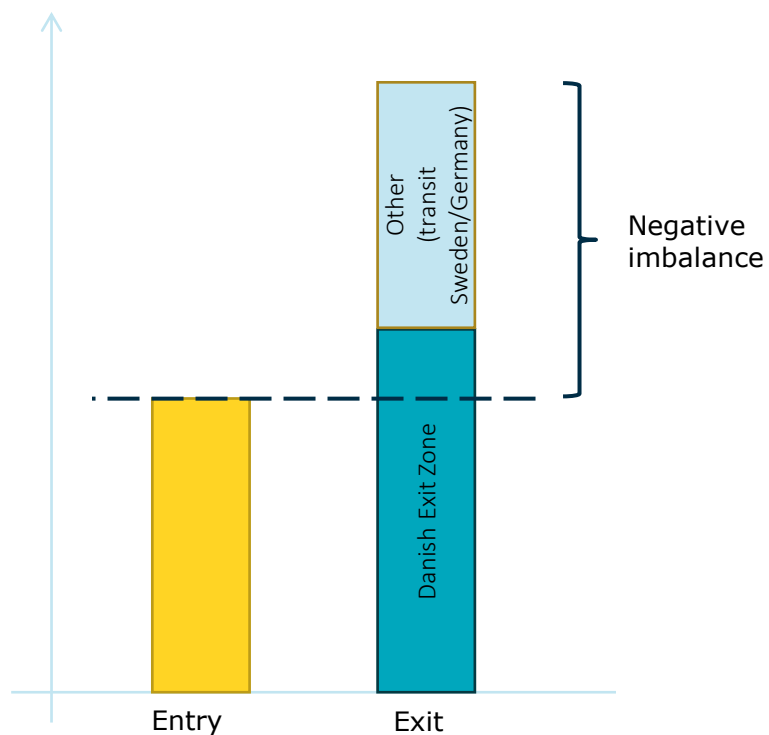


Scenario 2



IMBALANCE PRICES DURING EMERGENCY

Deliveries to the Exit Zone take precedence over other deliveries.



CURRENT FORCE MAJEURE PRICE



SUPPLY SITUATION 2021/2022

Gasmarknadsrådet, 8. December 2021

Christian Meiniche Andersen
Energinet

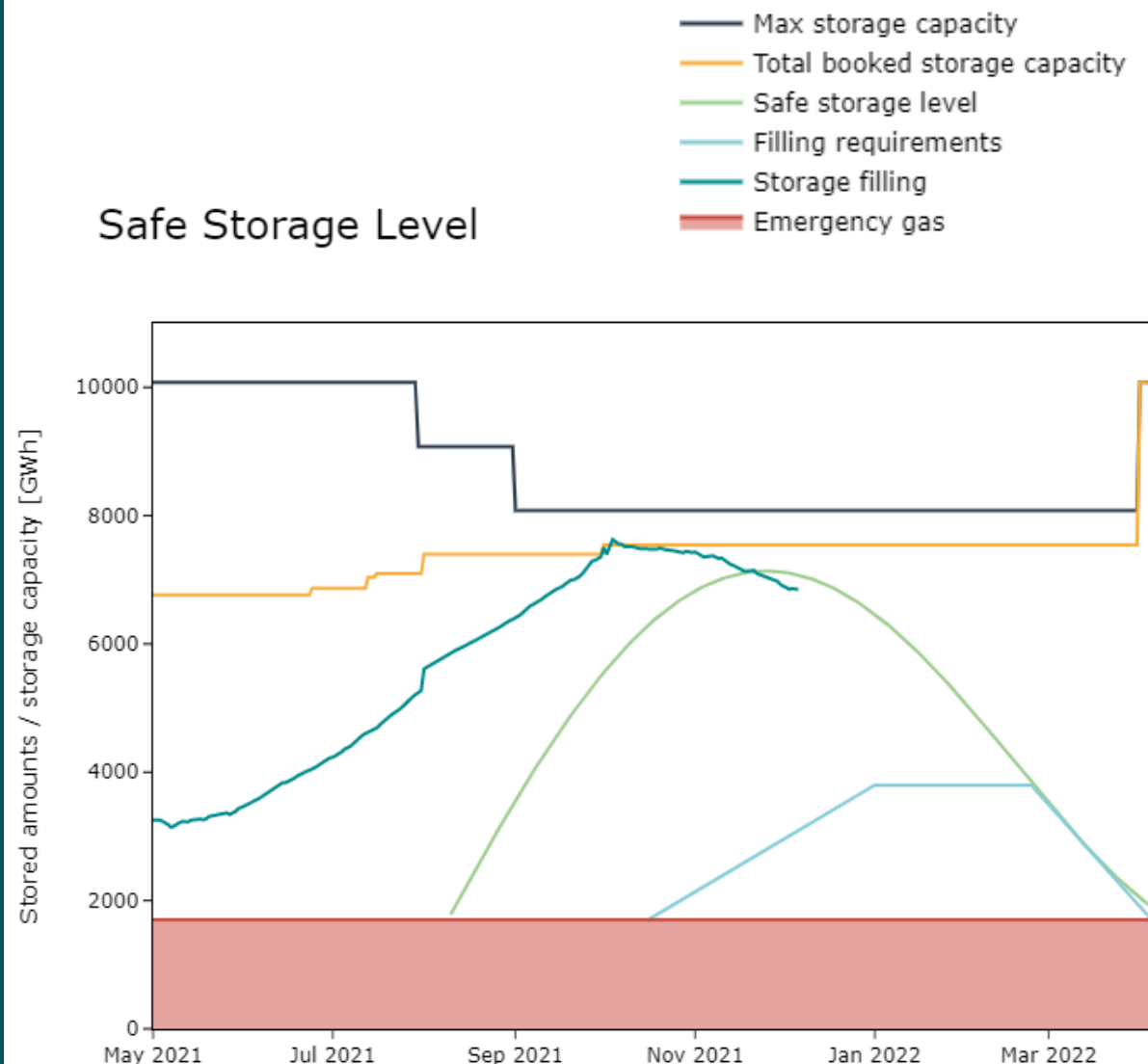
SAFE STORAGE LEVEL 21/22

The safe storage level is a calculation of the minimal need for gas in the Danish gas storages facilities for the market to be able to supply Danish and Swedish consumption in case of a **cold period** in the remaining storage season.

Assumptions behind calculation:

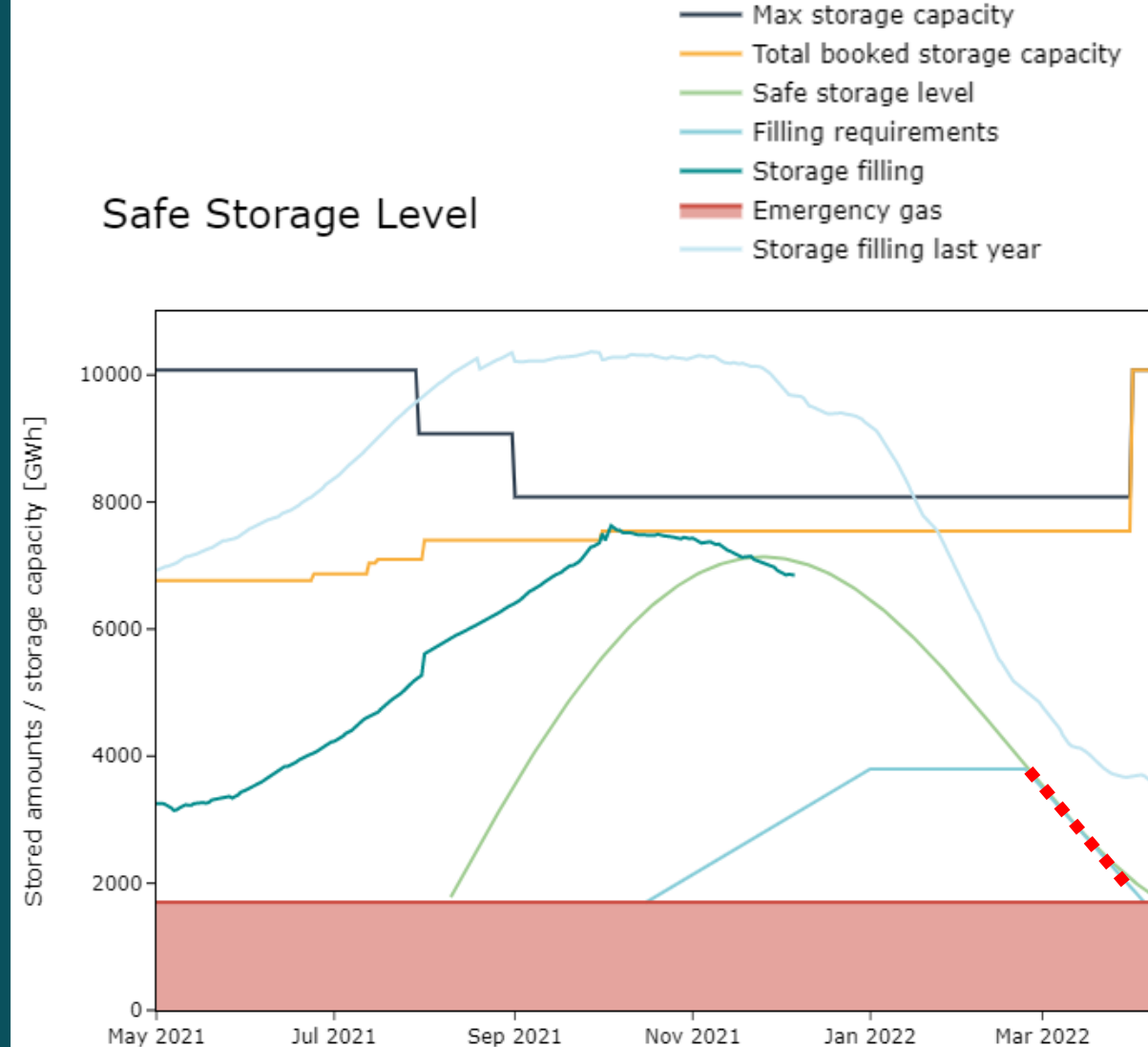
- Maximum supply via Ellund to the Danish system for the rest of the storage year.
- Biogas production increases as forecasted.
- Delivery from the South Arne pipeline remains at the present level.
- No technical incidents occurring affecting the supply.

Safe Storage Level



SSL AND STORAGE FILLING 2020-2022

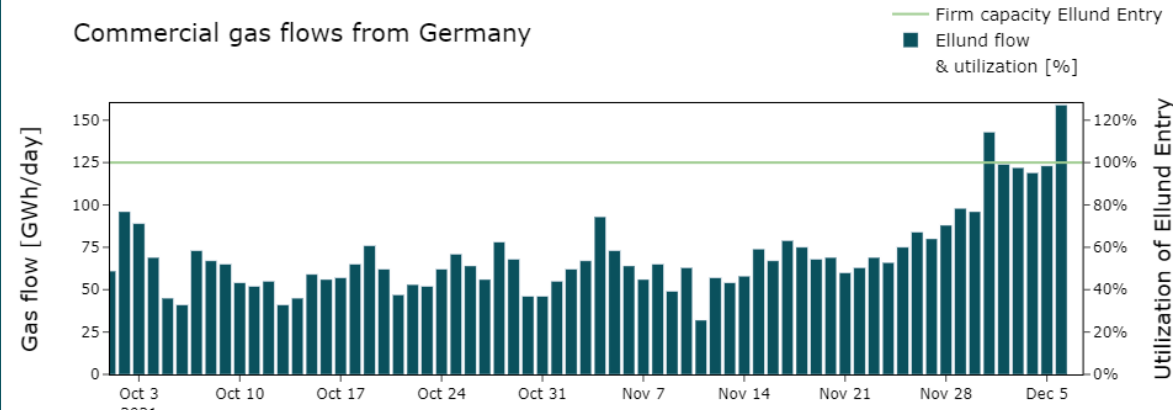
- Gas storage reservation is significant lower than in 2020/2021.
- Current low filling level leaves no room for previous years withdrawal rates in Q1 2022.
- The release of filling requirement March – April might not be adequate to balance Denmark and Sweden some days in the period.
- Filling levels following the “red dotted line” might result in the need for declaring emergency.



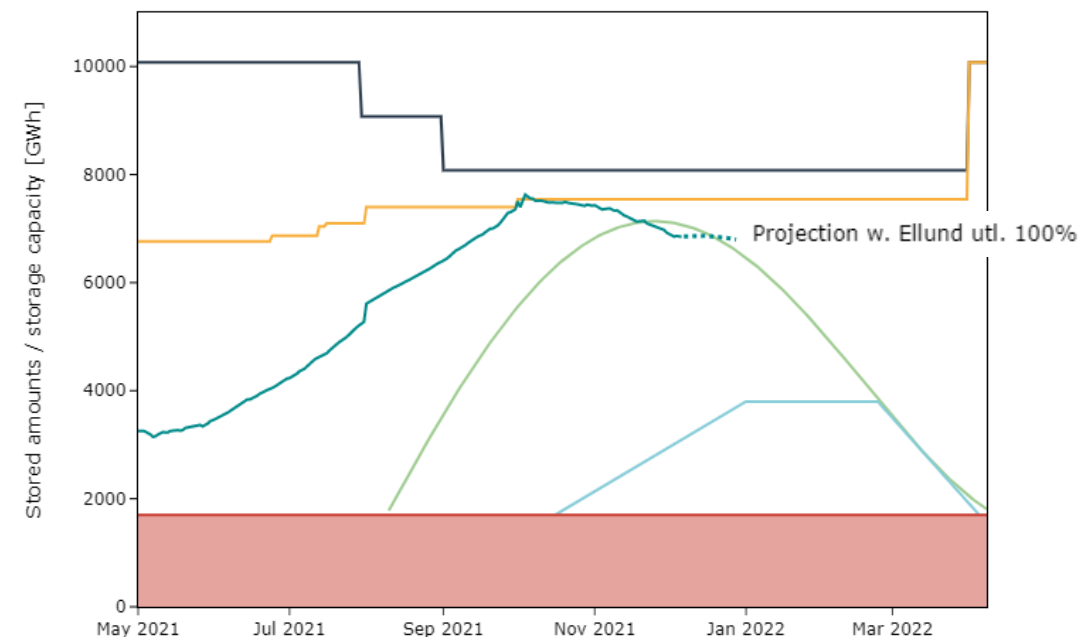
COMMERCIAL GAS FLOWS FROM GERMANY

- Entry Ellund has for a period been partly utilized.
- Currently high utilization of Ellund Entry, which leaves room for maintaining storage filling level with current offtake.
- The capacity from Entry Ellund will increase with 13.68 GWh/day the 1st of January 2022.

Commercial gas flows from Germany



Safe Storage Level



CRISIS LEVELS

ACCORDING TO THE EU REGULATION CONCERNING SECURITY OF GAS SUPPLY, THREE CRISIS LEVELS EXIST:

EARLY WARNING

Where there is concrete, serious and reliable information that an event which is likely to result in significant deterioration of the gas supply situation may occur and is likely to lead to the alert or the emergency level being triggered.

ALERT

Where a disruption of gas supply or exceptionally high gas demand which results in significant deterioration of the gas supply situation occurs but the market is still able to manage that disruption or demand without the need to resort to non-market-based measures.

EMERGENCY

Where there is exceptionally high gas demand, significant disruption of gas supply or other significant deterioration of the gas supply situation and all relevant market-based measures have been implemented but the gas supply is insufficient to meet the remaining gas demand so that non-market-based measures have to be additionally introduced with a view, in particular, to safeguarding gas supplies to protected customers.

GAS SHORTAGE AND EMERGENCY

If the shippers run short on gas in storage and the demand in Denmark and Sweden exceeds the supply from Germany, North Sea and Biogas, it will be necessary to declare Emergency in order to release Danish emergency gas for additional balancing of the system.

The Imbalance payment is:

- Denmark: Force majeure price
- Transit (if allowed – please refer to BFG 21.0 §16.3.1):
Highest of:
 - 1) Force majeure price + adjustment step 1 or 2,
 - 2) marginal price