

# *Gas winter scenarios 2023/2024*

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Bundesnetzagentur  
Section 623

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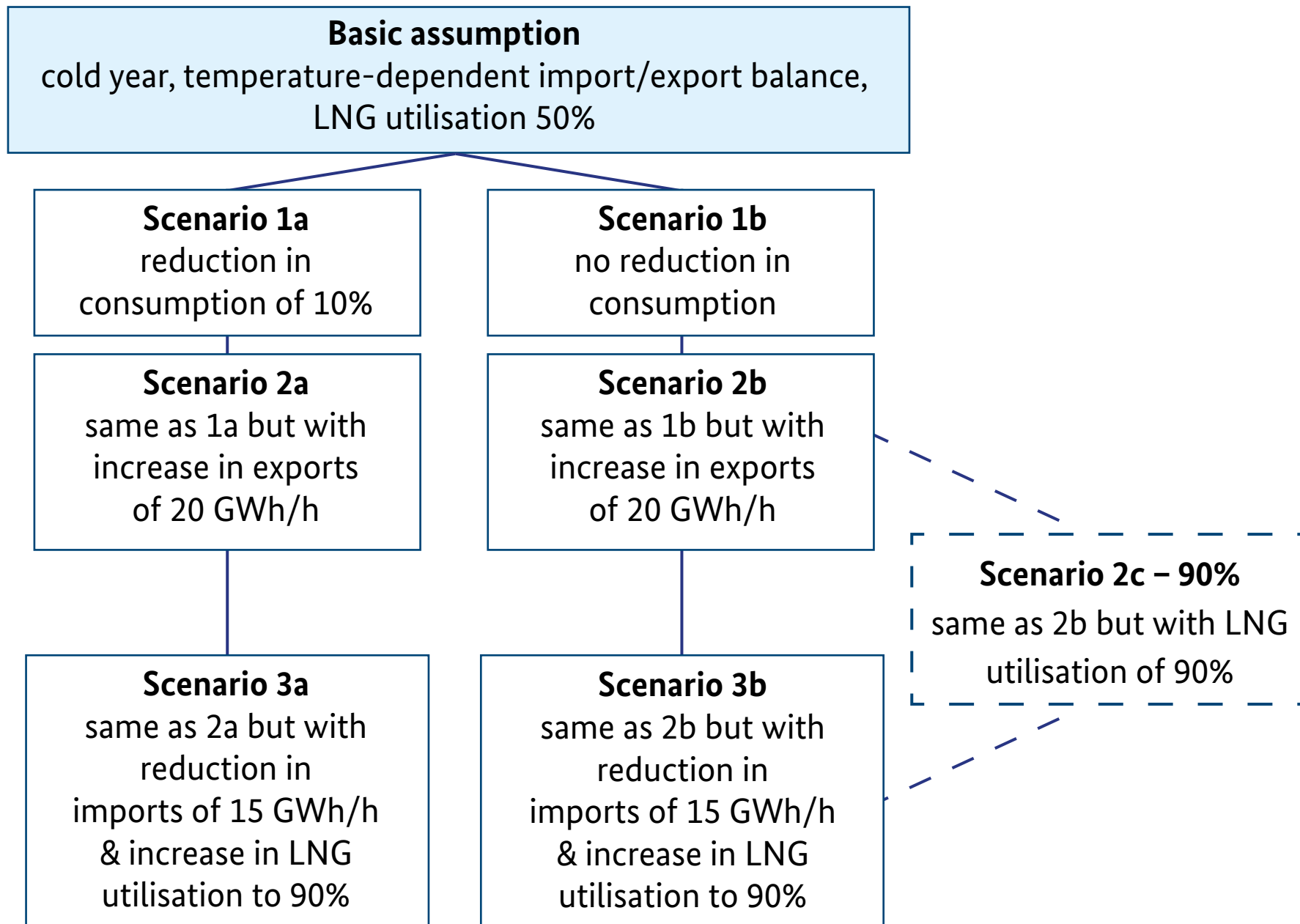


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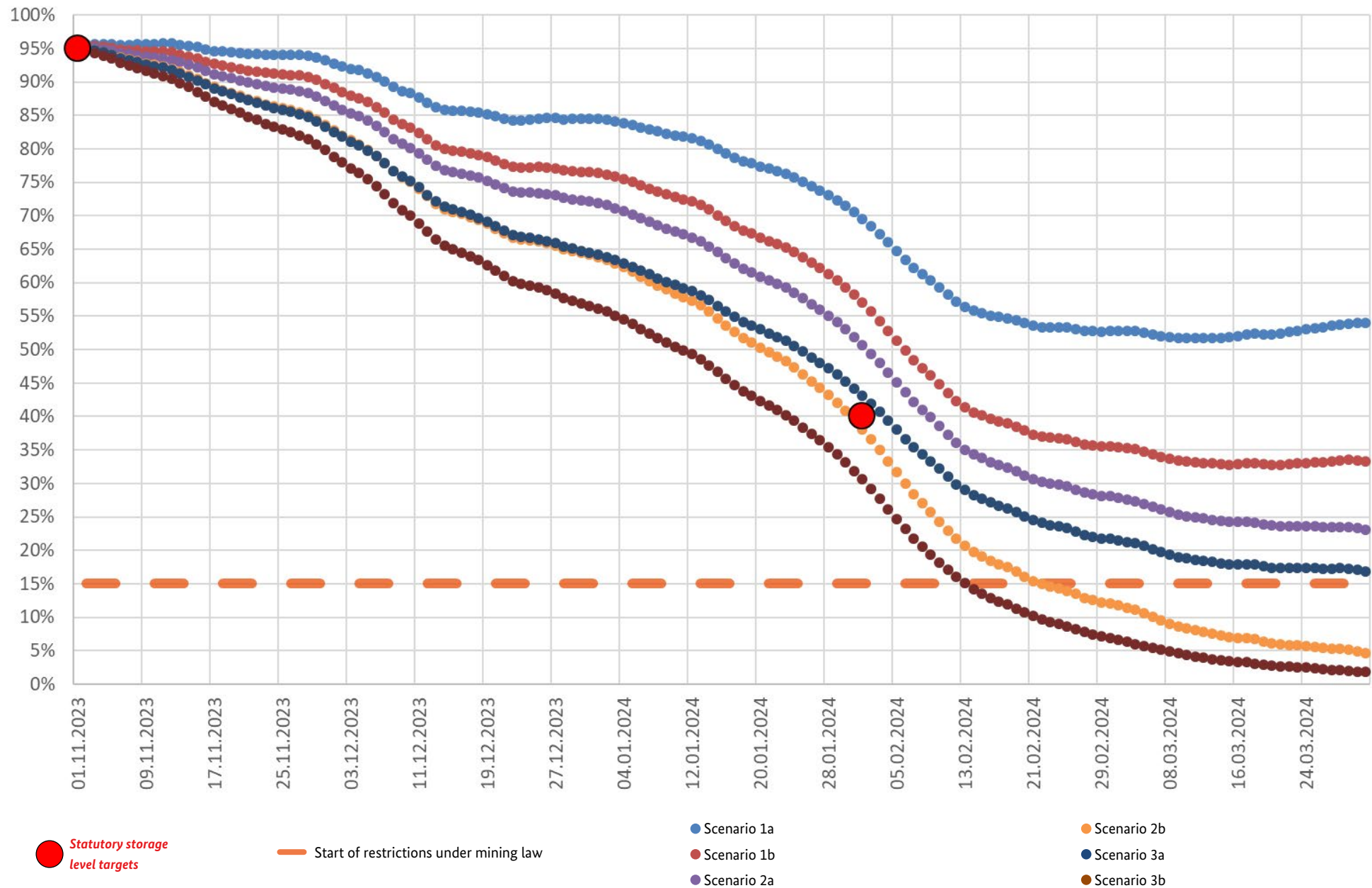
# Main modelling assumptions

- **Reference period** 1 November 2023 to 31 March 2024  
The model calculation starts from the statutory storage level of 95%. The current storage levels of about 99% would not fundamentally change the scenario results.
- The starting point uses the **imports and exports** from last winter.
  - Average balance of about 80-100 GWh/h.
  - Flows at cross-border interconnection points were temperature-dependent; balance of about 70 GWh/h on the coldest days.
- **LNG-Terminals** are assumed to have a network-side utilisation of about 50% (9 GWh/h) in the initial situation, taking account of restrictions on injection.
  - If there is additional gas demand, the utilisation is raised to 90%.
- **Consumption** from 2018-2021 taking account of the temperature effects of a cold year
  - The cold year was based on temperatures in 2012, when there were shorter cold spells in December and an intensely cold period in February.

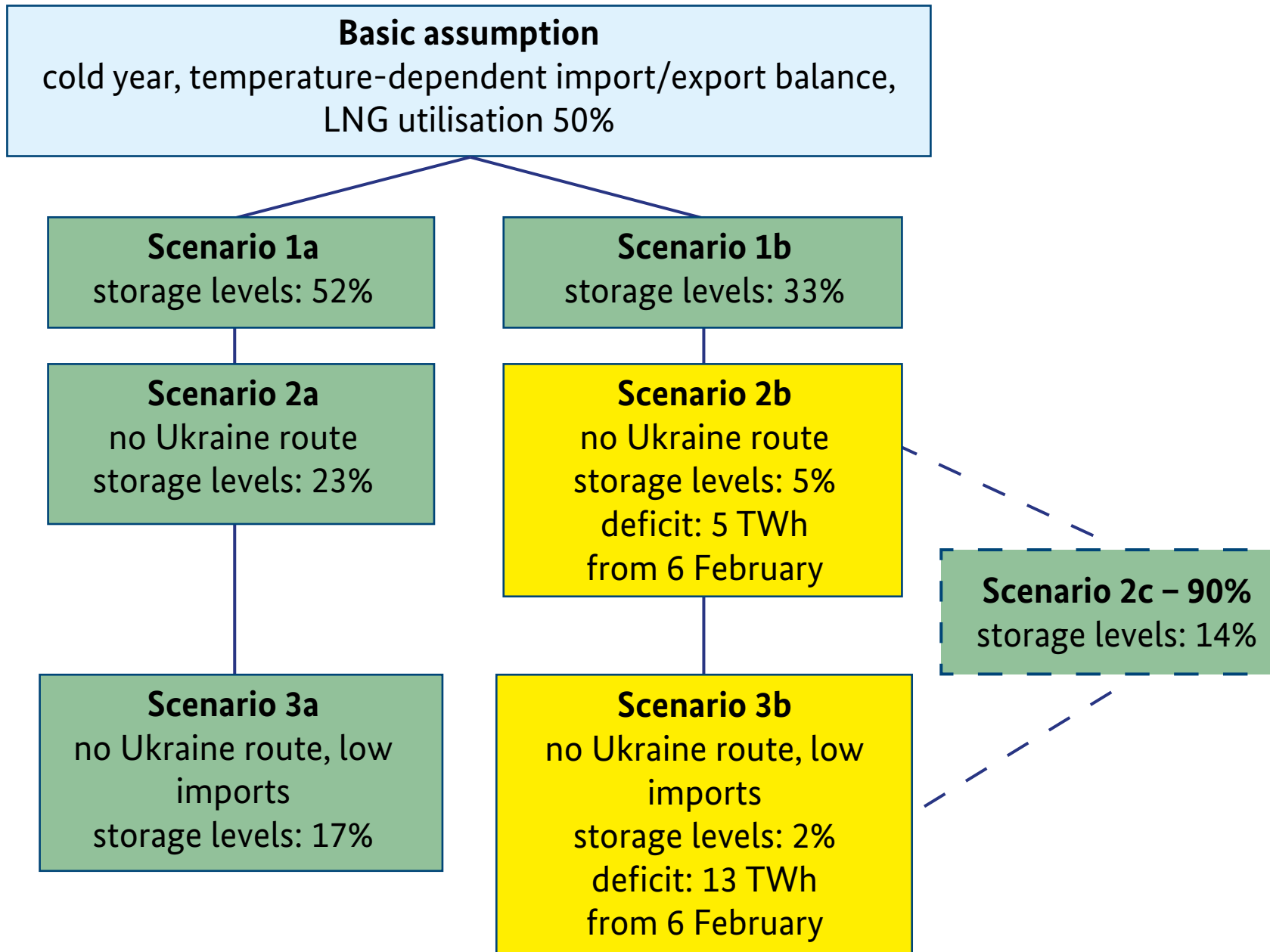
# Modelling approach



# Storage level forecast



# Results



# Results

## **Scenarios 1a and 1b**

These two scenarios differ in the reduction of consumption assumed.

### *Result*

Neither of these scenarios leads to a gas deficit situation, provided national LNG facilities are utilised to at least 50% and imports and exports remain at a level comparable to last winter.

Storage levels could be down to 33% by the end of the reference period.

# Results

## Scenarios 2a, 2b and 2c

These scenarios build on scenarios 1a and 1b, but with the addition of higher exports to neighbouring countries (20 GWh/h), for example due to a halt to supplies via the Ukraine route.

### *Result*

**Scenario 2a** does not lead to a gas deficit. Storage levels could be down to 23% by the end of the reference period.

Under the unfavourable developments of **scenario 2b**, with consumption remaining the same (no reduction) and low imports, there would probably be a gas deficit of about 5 TWh from the start of February. In this worst case scenario, therefore, national consumption and exports could not be covered from this time on. Storage levels could fall to as low as 5% by the end of the reference period.

In **scenario 2c**, the gas deficit could be averted by higher utilisation of LNG terminals (90%). Storage levels could fall to 14% by the end of the reference period.

# Results

## Scenarios 3a and 3b

These scenarios build on scenarios 2a and 2b with the addition of a 15 GWh/h reduction in imports to Germany. LNG utilisation is 90%.

### *Result*

**Scenario 3a** does not lead to a gas deficit. Storage levels could fall to 17% by the end of the reference period.

Under the unfavourable developments of **scenario 3b**, there would probably be a gas deficit of about 13 TWh from the beginning of February as, once cross-border interconnection points and LNG had been taken into account, the storage facilities would not be able to inject enough gas into the system to meet demand.

In this worst case scenario, therefore, national consumption and exports could not be covered from this time on.

The deficit in this worst case scenario would be 18% of the additionally assumed exports of 72 TWh. South-east Europe would have to turn to alternative routes.

Storage levels could fall to as low as 2% by the end of the reference period.



# Conclusion

## *Supply situation has improved considerably from last winter*

- Similar imports and exports to last winter, plus a high level of utilisation of the new LNG facilities at the North and Baltic Sea coasts, could avert a gas deficit even if temperatures are low.
- Importing gas before taking it from storage facilities will help to maintain the high input capacity of the storage facilities for as long as possible. However, storage levels could be low by the end of the heating season if there is high demand in Germany and abroad.

## *Challenges remain*

- Provisions on storage operation in mining law could restrict the availability of gas if storage levels are low (<15%).
- The German gas system has not yet been fully upgraded for the new flow situation. This poses a challenge in low temperatures because the network cannot yet transport the necessary volumes.
- Negative effects on imports and exports could cause a lot of gas to be taken out of storage facilities.

## *There is a remaining risk that gas demand cannot be fully met if:*

- low temperatures in Germany and abroad lead to lower imports at the western cross-border interconnection points;
- there is higher consumption in Germany;
- there is higher demand in countries that have previously imported gas from Germany.