Consultation of the planning assumptions for GTS' report on security of supply

Market consultation for the report on security of gas supply, to be published on September 15, 2024

16 July 2024 Gasunie Transport Services

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Dutch legal framework for the report on security of supply (SoS)

- The Dutch Gas Act has been changed to formalise the closure of the Groningen field
- This changed Act has given GTS the legal task to deliver a yearly report on security of gas supply in the Netherlands: Gas Act, Article 10a, paragraph 1q, 8 en 9
- A draft Ministerial Ruling (MR) describes at least the following deliverables for the yearly SoS report:
  - Capacity supply/demand balance at -14 °C, in accordance with the European infrastructure standard.
  - Volume supply/demand balance for the coldest, average and warmest winter for the next five years.
  - Necessary filling level of Dutch seasonal storages on November 1, 2025 (coldest winter).
  - Necessary volume for end users in three different winter situations.
  - All balances include import and export.
  - Supply and demand subdivided into L gas and H gas.
  - Supply and demand subdivided into different customer groups.
  - Foreseen delivery date SoS report: 15 September 2024.

EU legal framework and GTS vision on security of supply (SoS)

- GTS presented its vision on security of supply in March 2024:
  https://www.gasunietransportservices.nl/nieuws/advies-over-de-leveringszekerheid-van-aardgas-na-sluiting-van-het-groningenveld
- The starting point for this vision is that security of supply of natural gas is only sufficiently guaranteed if all three conditions below are met:
  1. There is sufficient volume stored in Dutch seasonal storage facilities, even for the coldest winter.
  2. The EU gas supply standard has been met (article 6 from EU Regulation 2017/1938).
  3. The EU infrastructure standard is met (article 5 from EU Regulation 2017/1938).
- GTS will also give attention to items 2 and 3 as part of the formal SoS report.

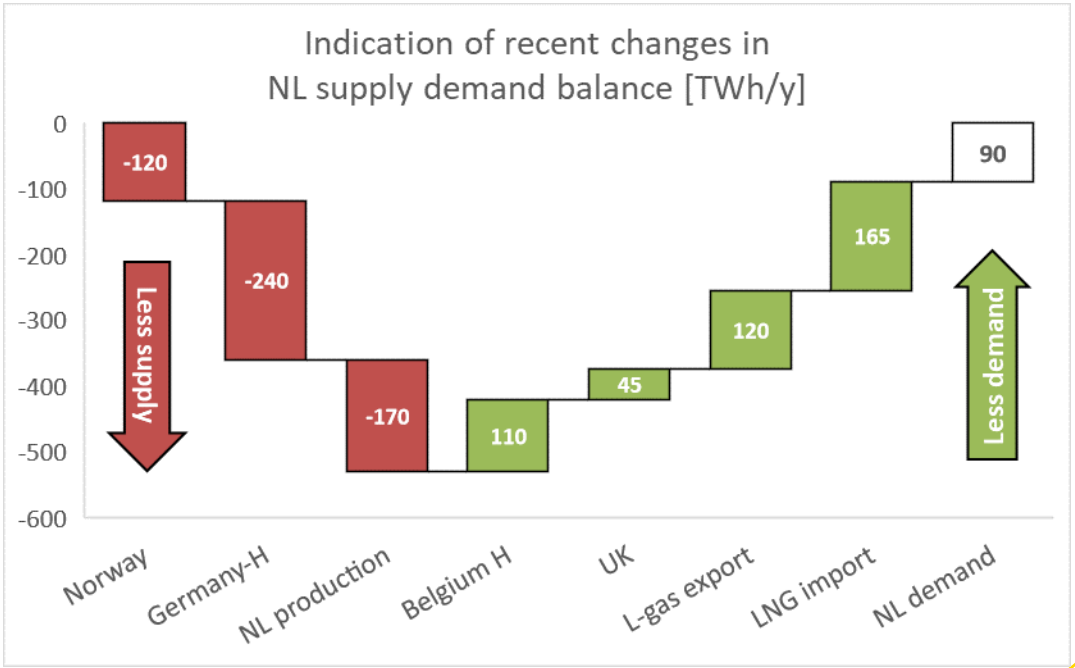
Consultation on planning assumptions

- In previous years GTS consulted planning assumptions in November of each year to determine the required Groningen field production (capacity and volume).
- GTS' advice about the required Groningen field was sent to the Minister at the end of January of each year.
- See: https://www.gasunietransportservices.nl/en/gasmarket/market-development/advice-production-groningen-field
- From this year on: GTS must provide a SoS report by September 15 of each year.
- The new yearly SoS report is based on the same analyses, methodologies and data as the previous Groningen advices.
- GTS must consult the planning assumptions with relevant stakeholders.
- In the following slides of the presentation, GTS will describe the relevant developments and the draft planning assumptions as input for the analysis and calculations. The results will be published in the SoS report.

Recent history and current situation

Observations and developments

- With the interruption of pipeline supply from Russia, there has been major changes in gas streams in Western Europe.
- The supply of LNG and Norwegian gas largely filled the shortage, albeit at high prices, which lead to lower gas demand.
- The closure of the Groningen field became a fact and the field is no longer available as a supplier of last resort.
- This all has a major effect on the planning assumptions.



Interaction with the German gas market area

Observations and recent developments

- Net export of H-gas from the Netherlands to Germany is based on recent realisations and bilaterals with German TSOs. This holds both for the capacity- and the volume modelling.
- Germany became a net importer of gas from the Netherlands.
- Although imports via Nord Stream have ended, 150 TWh of Russian gas is still imported via Ukraine. This volume is uncertain from 2025 onwards, when the transit contract for transport through Ukraine expires.
- The outlook for German gas demand takes into account the first signs of
  - an increase in gas demand in the industrial sector, especially in the power sector,
  - a delay in the reduction of residential gas demand.
- The import capacity of LNG will be extended, by the realisation a total of 6 LNG import terminals of which three are operational and the rest will be operational in 2024 or 2025. This extra volume is partly intended for transit to other countries.
- The conversion from L-gas to H-gas creates additional demand for H-gas. In gas year 2024/2025, German L-gas demand has a size of 750 to 800 TWh this reduces to zero TWh in 2030.
- As a result of the above, Germany stays a net importer of gas from the Netherlands till at least 2030.

Planning assumptions for gas year 2025/2026
- Reduction in L-gas demand for export according to the L-gas Market conversion review, supplied by the Task Force L-gas Market Conversion
- Net export of H-gas: 150 TWh/y for an average year and 200 TWh/y for a cold year

L-gas market conversion review: *https://open.overheid.nl/documenten/03eecff9-a35c-4bc7-95dc-94e17957d82e/file*

Interaction with the Belgian and French gas market areas

Observations and recent developments

- Maximum volumes via Fluxys' network to Germany (> 200 TWh/y) via Zeebrugge – Eynatten.
- GTS' network is used also for transit from Belgium to Germany (Zelzate – Bocholtz).
  - High supply from Belgium in summer,
  - limited H-gas supply in the winter months depending on the temperatures.
- There is a limited H-gas volumes from NL to Belgium, where it can only be delivered via the GTS grid. Apart from this, no net export of H-gas from NL to B.
- The export of L-gas to Belgium will stop as of 1 October 2024.
- Export of L-gas to France decreases every year, reaching zero in gas year 2028/2029.

Planning assumptions for gas year 2025/2026
- Reduction in L-gas demand according to the L-gas Market conversion review, supplied by the Task Force L-gas Market Conversion
- Imported volume from Belgium is based on offtake in previous years, with a total volume of 130 TWh per year

L-gas market conversion review: *https://open.overheid.nl/documenten/03eecff9-a35c-4bc7-95dc-94e17957d82e/file*

Interaction with the gas market area in Great Britain

Observations and recent developments

- Flow patterns are based on recent realisations.
- Recent years show a limited net import of H-gas from Great Britain (via BBL).
- The import is temperature dependent and reaches a maximum during the summer months, including October and November.
- With this, NL is a net exporter of seasonal flexibility to GB.
- Peak demand is based on the Gas Winter Outlook 2022/23 published by the National Gas.
- In the winter period, no export is assumed to take place except in case of very cold periods.
- No substantial export of volume to Great Britain.

Planning assumptions for gas year 2025/2026
- Import via BBL to the Netherland takes place from March to October
- Volume from GB to NL: 24 TWh/y

Import of LNG

Observations and recent developments

- LNG was available in large quantities as a substitute for Russian supply, albeit at high cost.
- Through the expansion of GATE and fast realisation off the Dutch Eems terminal (EET): LNG supply to the Netherlands has doubled from 120 to 240 TWh/y.
- A substantial LNG-volume will remain necessary for the Dutch market in the coming years.
- Additional capacity of LNG-receiving in Europe only contribute to security of supply when additional LNG volume is available for these terminals. Rerouting LNG between terminals doesn't.
- Till about 2027, the worldwide availability of LNG is expected to remain tight, where Europe is in competition with other parts of the world, like Asia.
- At the same time transport routes may be uncertain due to political instability (Red Sea, Suez Canal) or climatic conditions (Panama Canal). This may lead to a lower transport capacity, less supply or higher prices.
- The supply of flexible LNG volumes are price-driven. By nature, LNG supply has no seasonal flexibility.
- It is assumed EET terminal will close in October 2027, however extension is being considered.
- A fourth storage tank at Gate will be available in October 2026.
- Both Gate and EET will be available at technical capacity.
- Production of the Dutch LNG-terminals is based on data obtained from recent years.

Planning assumptions for gas year 2025/2026
- Both Gate and EET will be available at technical capacity
- Assumed supply volume via Gate: 170 TWh/y and via EET: 80 TWh/y

Gas import from Norway

Observations and recent developments

- In recent years, Norwegian supply was redirected from the Netherlands to Germany compensated by additional LNG to the Netherlands. As a result, Norwegian supply to the Netherlands has decreased by 40 to 50%.
- LNG deliveries to Germany could result in the opposite effect, with more supply of Norwegian gas for the Dutch market.
- Additional Norwegian gas for the Netherlands contributes to security of supply, unless it is accompanied by a lower supply of LNG to the Netherlands.
- Based on recent realisations, supply from Norway is assumed to have a baseload character.

Planning assumptions for gas year 2025/2026
- Total volume supplied from Norway to the Netherlands: 120 TWh per year as base load

Dutch supply-demand balance for volumes

Observations and developments

- Supply from the Groningen field has ended, the only Dutch production takes place from small fields.
- Gas supply from small fields shows a decreasing trend, comparable to the trend in the annual report *Delfstoffen en aardwarmte in Nederland* (nlog).
- H-gas supply from LNG, Norway, Germany and Belgium has changed dramatically since the Ukraine conflict.
- A substantial volume of LNG for the Dutch gas market remains necessary.
- Domestic gas demand (L & H) has decreased due to tight supply and high prices.
- As foreseen, the export of L-gas to D and F will decrease to zero in gas year 2029/2030. Export to B will stop in gas year 2024/2025.

Planning assumptions for gas year 2025/2026

- Domestic demand according to KEV2022 minus 10% for the RNB
- Export of L-gas according to summer briefing 2024 of Task Force Monitoring L-gas Market conversion
- A net export of H-gas to Germany of 150 TWh for an average year and 200 TWh for a cold year
- Net import of H-gas from Belgium with a total volume of 130 TWh per year
- A net import via BBL to the Netherland during winter months with a total volume of 24 TWh
- A total import of LNG with a volume of 250 TWh per year
- A limited base load flow from Norway, with a yearly volume of 120 TWh
- Domestic production from small fields is based on the data provided by small field producers, about 110 TWh

Dutch supply-demand balance for capacities

Observations and developments

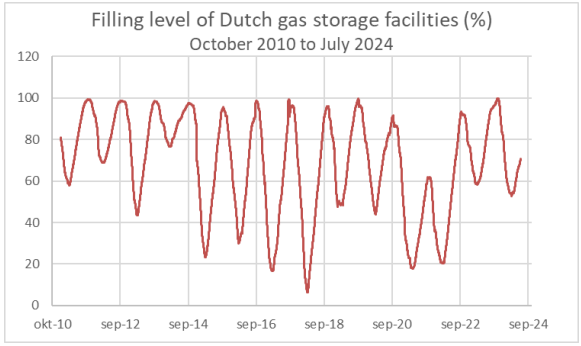
- With the closing of the Groningen field, this field is no longer available to balance the gas market.
- The supply from small fields shows a gradual decline.
- The supply of (extra) LNG forms a necessary condition to maintain a balanced gas market.
- Availability of the Eems LNG terminal (EET) is uncertain as from the first of October 2027, a fourth storage tank of Gate is expected to be operational by the first of October 2026.
- The balancing role of storage facilities became more important.
- When interpreting the gas supply standard, a high gas demand is linked to a day with a low wind corrected temperature.
- Relevant temperatures for the EU infrastructure standard, with a chance of occurrence of 1 in 20 years, have been determined by The Royal Netherlands Meteorological Institute (KNMI).
- Currently, a daily average wind corrected temperature of -14 °C is used for this.
- Minus -17 °C is used for peak demand, with all infrastructure available.

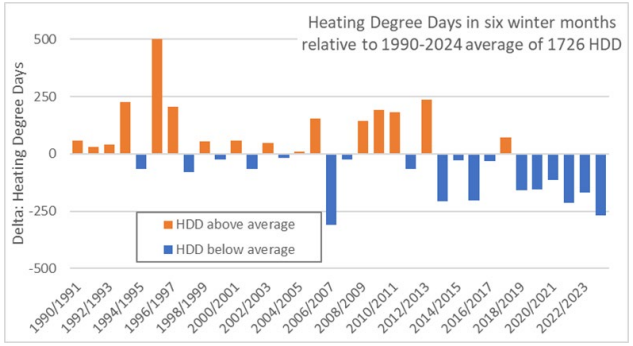
Planning assumptions for gas year 2025/2026
- A peak demand based on EU infra norm, at a temperature of -14°C without the availability of Norg (N-1)
- No capacity from the Groningen field available
- Conversion of largest L-gas industries/power plants to H-gas based on the most recent planning
- Peak capacities based on evaluation of past years and bookings and realisations of shippers

Storage facilities for the Dutch gas market

Observations and developments

- Except for 2021, the filling level of the seasonal storages in the Netherlands at the beginning of the winter was close to 100%.
- In recent years, seasonal storage facilities were not fully utilised, partly because these years had a relative warm winter. For security of supply, GTS uses standard temperature profiles, as follows from the legal task.





Planning assumptions for gas year 2025/2026

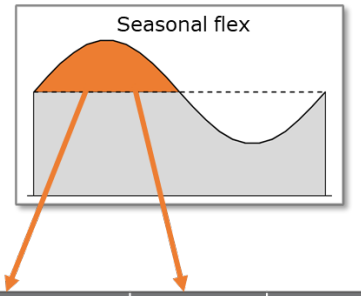
- Full availability of all Dutch gas storage facilities, with capacities and working gas volumes according to the GIE Storage Database (AGSI)
- In addition to this, availability from German H-gas storage facilities in the Oude Statenzijl region and L-gas storage facilities in the Epe region
- Production and injection pattern is based on data from recent years
- Seasonal volume from storages or direct supply, is calculated as: [(winter volume)–(summer volume)] / 2
- With the winter volume based on October to March and the summer volume on April to September

Link: https://www.gie.eu/transparency/databases/storage-database/
Definition of a heating degree day according to the Dutch Gas Act

Seasonal flexibility

Observations and developments

- Seasonal flexibility is exchanged between countries. This makes seasonal flexibility an international market.
- NL is a net importer of gas, but a net *exporter* of seasonal flexibility, both in the L-gas and in the H-gas system.
- Within a timeframe of five years, the availability of seasonal flexibility in supply to the NW-European market has, decreased by approximately 110 TWh. This made the availability of seasonal flexibility from storage facilities even more important.
- NL, D and F have sufficient working gas volume to balance their domestic markets. Other countries, such as B and UK do not have this.
- By nature, LNG supply has no seasonal flexibility, supply of flexible LNG volumes is price-driven.



	Gas year 2017/2018	Currently	Reduction
Noway	50 TWh	25	-25 TWh
Russia	30 TWh	0	-30 TWh
EU production	65 TWh	10	-55 TWh
LNG	0 TWh	0	0 TWh
		Total:	**-110 TWh**

Planning assumptions for gas year 2025/2026
- Required seasonal gas volume is calculates as: [(winter demand)–(summer demand)] / 2
- Per country, the required seasonal flexibility scales with the yearly gas demand
- Available flexibility in production and import will be utilised first, then storage facilities will be deployed
- Till 2030, L-gas storage facilities are available for H-gas demand as well by reducing QC

Quality conversion

- Observations and recent developments
  - With the closing of the Groningen field, a large source for L-gas has disappeared.
  - Now, all L-gas has to be “created” via adding Nitrogen to H-gas.
  - With the availability of the nitrogen factory in Zuidbroek, there is sufficient capacity available for the conversion of H-gas to L-gas.
  - The export of L-gas to neighbouring countries will go to zero in gas year 2029/2030.
  - As long as the L-gas market is large enough, flexibility from the L-gas system can also be made available in the H-gas system, by reducing quality conversion.
  - Additional L-gas supply from N05-A (Schiermonnikoog) is accounted for in the small fields data.
  - GTS investigates the use of quality conversion under extreme circumstances for future years.

Planning assumptions for gas year 2025/2026
- Firm N2 is based on N2 production plants in Wieringermeer, Ommen and Zuidbroek

Scenarios

The base case (*Realistic scenario*) is used for the report on security of supply. For sensitivity, two additional cases are defined: a more pessimistic and a more optimistic scenario.

	Realistic scenario	Pessimistic scenario	Optimistic scenario
Domestic demand	Capacity and volume based on the Klimaat- and Energieverkenning 2022, with a correction of 10% on the expected volume of the RNB.		
L-gas export to Belgium, France and Germany	Winterbriefing 2024 Taskforce Monitoring L-gas Market Conversion.		
H-gas export to Germany	High export flow (based on actual flows of the last two years) from the Netherlands to Germany		2/3 of the capacity and volume from the realistic scenario per 2026/27
German H-gas caverns	Capacity based on the Winter Supply Outlook from Entsog for the availability of the German H-gas cavernes at peak demand.		
LNG	Maximum availability of Gate is assumed, including fourth tank from 2026/27, and EET until the start of gas year 2027/28.	70% of the LNG supply in the realistic scenario, both for capacity and volume.	

Two cases for sensitivity

- a case with more supply, mainly due to less export to Germany
- a case with less supply, mainly due to a lower availability of LNG

Consultation process

- We would like to ask your opinion/feedback, both on
  - Our observations and recent developments, and
  - the planning assumptions for gas year 2025/2026, as indicated by the orange frame.
- Your feedback will be made public unless specified.
- Consultation starts on **Tuesday July 16, 2024**.
- Consultation ends on **Monday July 29, 2024 at CoB**
- Please send your written view to gasmarket@gastransport.nl
- Your written views will be considered in our report to the Minister.
- The report will be sent by 15 September 2024 to the Minister of Climate Policy and Green Growth.