gasunie
transport services

GTS Investment Plan 2026 - 2035

3 November 2025

Foreword

We present to you our 2026 Investment Plan. In this new investment plan (IP), GTS provides an up-to-date overview of all planned expansion and replacement investments. GTS also looks back at the 2024 Investment Plan and explains variances between forecasts and actual investments where necessary.

The gas market has changed significantly in recent years due to international geopolitical changes as well as developments at the national level. The self-evident nature of energy security and energy affordability is under pressure.

After the sharp decline in gas demand around 2022 that occurred as a result of the high gas prices, demand for natural gas has now stabilised. On the supply side, two important developments continue to play a significant role: the shutdown of production from the Groningen field, and the loss of pipeline gas from Russia, which had already preceded this shutdown. The loss of supply has been offset in part by the reduction in demand, as explained above, as well as by an increase in the supply of liquefied natural gas (LNG). Thanks to the robust design of the transmission system, GTS continues to be able to offer sufficient capacity, even in the new situation where gas now flows from west to east. This robustness helps keep the Dutch energy system resilient, especially in times of geopolitical uncertainty.
The EU intends to completely phase out Russian gas during the period covered by this IP; potential effects of this phase-out have not been considered in this IP.

Alongside the changed supply volume, the flexibility of the gas system has also decreased. The closure of the Groningen field has eliminated a key source of controllable supply and as a result, seasonal storage facilities have become even more important for coping with fluctuations in supply and demand. In its most recent Security of supply overview, GTS advises the Dutch Ministry of Climate Policy and Green Growth to set a filling level of 115 TWh for seasonal storage facilities to ensure security of supply even in a cold year.

Though the energy transition is proceeding slower than anticipated – and likely more slowly than desirable, too – the need for making the energy system sustainable remains just as urgent. It is essential for the gas network to facilitate the feed-in of sustainable gases, such as biomethane, both now and in the future. The EU has set a target of producing approximately 340 TWh of biomethane by 2030, therefore making accommodating biomethane a strategic priority for GTS. Biomethane production is growing, and the future blending mandate for biomethane requires additional options in infrastructure connections or facilities for small-scale compression in the network of regional transmission system operators. GTS is working closely with regional TSOs and other parties to accommodate this production. For example, biomethane collection pipelines and biomethane boosters are being commissioned.

In addition to biomethane, hydrogen will also form part of the energy mix in the Netherlands in the near future (and its share will only grow over time). Gasunie subsidiary Hynetwork Services (HNS) has been commissioned to develop and manage a national hydrogen transmission network. The guiding principle is to use existing GTS natural gas pipelines (which will be transferred to HNS) as much as possible. By facilitating biomethane production and having its pipelines made available to form part of the national hydrogen transport network, the existing natural gas infrastructure will increasingly contribute to the sustainability of the Dutch energy system.

GTS cordially invites you to respond to this draft investment plan. GTS will incorporate the responses it receives into the final draft investment plan, which GTS will then submit to the Netherlands Authority for Consumers and Markets (ACM) and the Dutch Ministry of Climate Policy and Green Growth by no later than 1 January 2026.

Jeroen Zanting
Managing Director

Summary

Gasunie Transport Services (GTS) owns and operates the national gas grid in the Netherlands, meaning that GTS is responsible for the development, management and functioning of the Dutch gas grid.

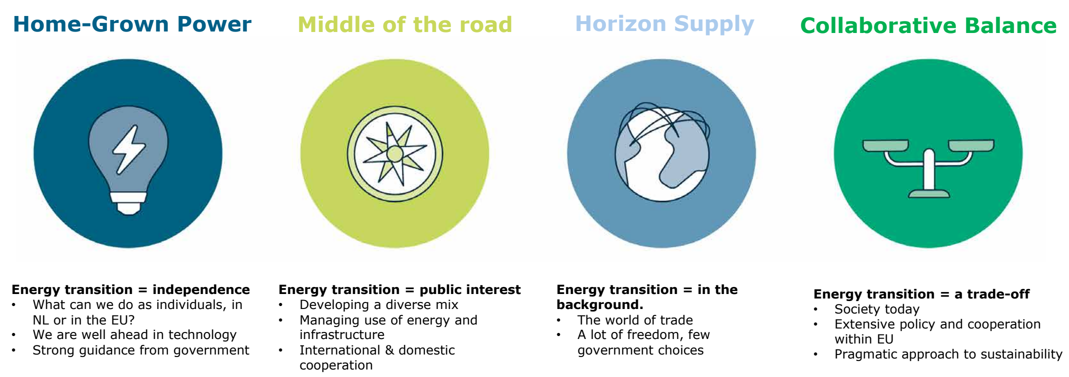
Under the Dutch Gas Act (as of 1 January 2026 this will change to the Dutch Energy Act), GTS has a statutory duty to draw up an investment plan ('IP') on a periodic basis. The IP gives a rundown of all intended expansion and replacement investments over the period, as well as the background and supporting information for these investments. From a statutory perspective, the IP contains three elements: developments in the energy market; a bottleneck analysis to identify capacity and quality bottlenecks; and details of the proposed investments. The IP is submitted to the Dutch Ministry of Climate Policy and Green Growth and the Netherlands Authority for Consumers and Markets (ACM) for inspection.

Scenario developments

The 2026 IP contains four scenarios compiled by the national and regional transmission system operators with the help of input from a broad group of stakeholders (see Figure 1). The 2026 IP scenarios are a further development of the scenarios used for the 2024 IP, with an extensive update based on the most recent insights into energy and climate policy and sectoral plans that have been further elaborated. The most important new insights in this update concern the publication of the National Energy System Plan (NESP), increased geopolitical uncertainty, and changes in the pace of implementing sustainability measures. The 2026 IP scenarios have also been updated based on recent market and technology studies, sectoral energy roadmaps, and political policy documents.

The development of the scenarios under the banner of Netbeheer Nederland resulted in a comprehensive report, which was published on the website of Netbeheer Nederland on 13 May 2025: 'Netbeheer Nederland Scenario's Editie 2025'[1] . Based on the climate targets set, together the scenarios delineate the upper and lower limit within which supply and demand are likely to remain up to the end of 2050.

Figure 1: The four scenarios published in the 2025 edition of Netbeheer Nederland Scenarios



1 Netbeheer Nederland Scenario's Editie 2025 | Netbeheer Nederland

The main conclusion for GTS is that in all scenarios the volume of gas to be transported will decrease by 2040; however, the extent of the decrease varies per scenario, with the transmission volume in 2040 being somewhere between 50% and 82% lower than in the reference year of 2025. Firstly, a good part of this decrease in demand will come through the phasing out of obligations regarding the export of L-gas, with no L-gas export requirement from the start of 2030. Secondly, domestic demand will also be declining, due to energy efficiency and energy conservation measures. With the declining gas demand, the demand for transmission capacity will also decrease over the coming years, with this being somewhere between 31% and 64% lower in 2040 than in the reference year of 2025. Transmission capacity will decline less quickly than annual transmission volume, largely because the Dutch gas network will remain an important source of flexibility during peak periods.

As regards supply, the conclusion is that domestic production from small fields will decline substantially, to around 13 TWh by 2040. Most of supply in 2040 will come from imports, primarily LNG. Additionally, biomethane production is set to increase further between now and 2040, with scenarios showing a range of between 22 and 56 TWh.

Recent developments in the market

The gas market has changed dramatically in recent years, not only because of international geopolitical changes but also due to developments at the national level. Energy security is no longer a given and, accordingly, is now considered to be even more important than before. The affordability of energy, which is under pressure, is also of increasing importance and so this matter is being given more attention.

After the sharp drop in gas demand observed around 2022 due to extremely high gas prices, gas demand has stabilised over the last two years. Looking ahead, in contrast to previous figures, the anticipated demand for natural gas up to the end of 2030 now shows a less rapid decline. This revision in the forecast is prompted by a delay in the energy transition in industry, a delay in electrification, and a delay in the growth of sustainable electricity generation.

The efforts of both the European Commission and the Dutch government to hold onto local manufacturing are being hampered by this delay in the energy transition. In addition to predictability in policy, sustainability – or at least a true measure of certainty with regard to sustainability – is needed to limit the risk of industrial companies moving their operations elsewhere. The absence of these fundamentals creates uncertainty regarding investment decisions, resulting in delays and potentially forcing industrial companies to close their operations in the Netherlands and increasingly move these abroad.

For GTS, the slower decline in natural gas demand could possibly mean that divestments, or the transfer of assets to the hydrogen network, for example, will happen later than originally anticipated.

Furthermore, the increasing use of sustainable energy sources such as solar and wind power is resulting in greater swings and less predictability in gas demand from gas-fired power stations. Taking into account all these factors, the result is an increase in both fluctuations and uncertainty in gas demand.

North-western Europe, including the Netherlands, has increasingly been a net importer of natural gas and is, accordingly, dependent on foreign gas. This growing dependency places the EU in a situation where it is increasingly susceptible to the risks posed by adverse geopolitical developments. LNG imports in particular, most of which originate in the United States and the Middle East, play a significant role. The LNG market is global, meaning that availability and price depend on developments in other parts of the world, such as the Asian gas market, for example.

Increasing tensions and uncertainties on the geopolitical stage, such as those arising from the conflicts in Ukraine and the Middle East, therefore have a significant impact on the gas market. Aside from this, the potential unavailability of LNG shipping routes, or of trade tariffs and the use of energy supply to exert political leverage also have a potentially enormous impact. This presents a risk of reduced availability of gas supply and, with this, diminished security of natural gas supply.

With less flexibility in supply, seasonal storage facilities will remain essential, both now and in the future. Seasonal storage facilities also provide flexibility in capacity during periods of peak demand.

The following laws or legislative amendments are of significance: the Dutch Energy Act (Energiewet), which will come into force on 1 January 2026; the Dutch legislative proposal on a law defining measures to contain an energy supply crisis (Wet bestrijden energieleveringscrisis), which would implement the EU Regulation concerning measures to safeguard the security of gas supply; the EU Regulation on the reduction of methane emissions in the energy sector, which Member States were required to implement by no later than 4 August 2025; and the EU hydrogen and gas decarbonisation package, consisting of the new Gas Regulation (which applied immediately from 5 February 2025) and a new Gas Directive (which will be implemented under Dutch law through the Decarbonisation Package Implementation Act (Implementatiewet Decarbonisatiepakket).

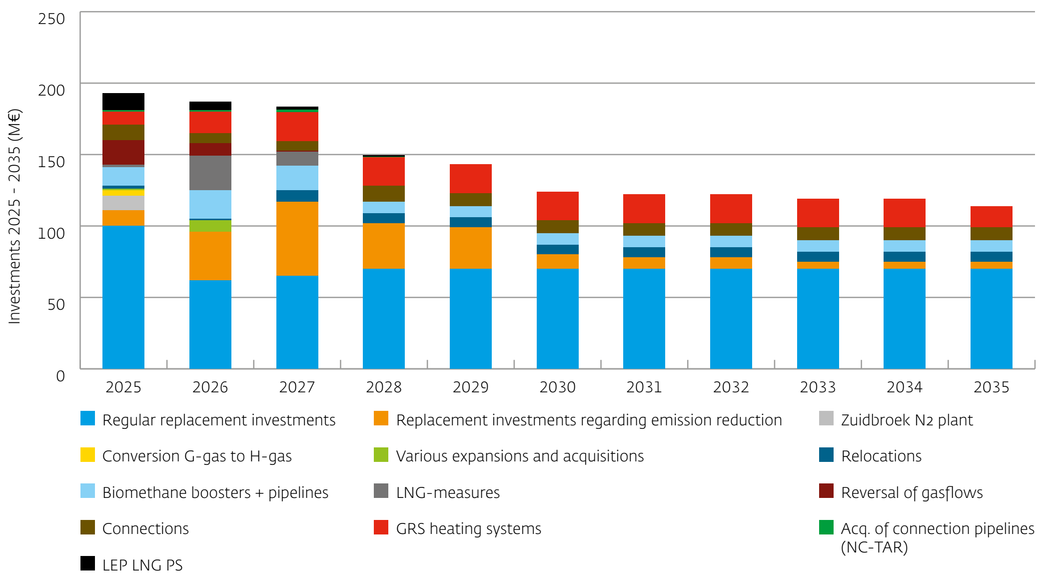
In May 2025, the Dutch government resolved that the blending mandate for biomethane would take effect on 1 January 2027, with the goal of reducing CO_2 emissions by 2.85 MT. It is expected that this will correspond to 0.83 bcm of biomethane production in 2031. The blending mandate is seen as an important incentive to boost biomethane production. However, biomethane production is currently growing much less rapidly than desired due to various obstacles and discouraging factors. Failure to finalise the business case often poses an insurmountable obstacle.

Assessment of bottlenecks & GTS investment portfolio

GTS checks for two potential bottlenecks: capacity bottlenecks and quality bottlenecks. Capacity bottlenecks are determined using gas transmission calculations based on the identified scenarios; this has revealed that there are no capacity bottlenecks that would necessitate expansion investments. Quality bottlenecks prompt replacement investments and are identified through risk analyses or findings during management and maintenance work. This concerns bottlenecks that contravene one or more of the company's values, or investments that are required under legislation and regulations. In addition to the usual annual standard replacement investments to resolve quality bottlenecks, GTS anticipates a growing number of quality bottlenecks in relation to cutting carbon emissions in the coming years, partly due to the EU Methane Regulation. GTS also expects to invest in biomethane boosters and biomethane collector pipelines to meet greening ambitions.

Figure 0.1 shows the total overview of GTS' expected investment portfolio up to the end of 2035. What can mainly be seen in the period 2025 to 2027 are investments relating to changing gas flows, LNG measures, and biomethane investments. For the 2025-2029 period, the expected large-scale replacement investments for the purpose of cutting carbon emissions are presented. From 2030, GTS mainly expects regular replacement investments necessary to guarantee safe, reliable and efficient gas transmission, supplemented with investments arising from connections, diversions and the feed-in of biomethane.

Figure 0.1: Total investments in 2025-2035



Contents

Introduction

Gasunie Transport Services (GTS) owns and operates the national gas grid in the Netherlands, meaning that GTS is responsible for the management, functioning and further development of the Dutch gas grid. Other duties include connecting customers to the network, monitoring gas quality, balancing, gas intake from small fields, connections to other national and international networks, guaranteeing sufficient transmission capacity, public duties with respect to security of supply (including peak supply and emergency supply), and drafting and presenting the annual security of supply overview for gas.

Mission

We deliver gas transmission services in a customer-focused and transparent way. Safety, reliability, sustainability and cost-effectiveness are central in everything we do. We serve the public interest, and work as professionals to create value for our stakeholders.

Vision

We aim to be an organisation that best serves the market, responds flexibly to changes in its surroundings, enables new gas flows, facilitates the introduction of sustainable energy and thus plays a key role in the north-western European gas market.
To be able to fulfil these ambitions and duties with the required level of quality, GTS needs to invest in the maintenance and, where opportune, expansion of the gas transmission network. This draft investment plan (IP) details the investments that we deem necessary.

Statutory basis of the investment plan

Under the Dutch Gas Act, GTS has a statutory duty to draw up a draft IP on a periodic basis. The draft IP gives a rundown of all intended expansion and replacement investments over the period, including the background and supporting information. To comply with the law, the draft IP must cover three elements: developments in the energy market, a bottleneck analysis to identify capacity and quality bottlenecks, and the details of the investments. The law goes on to state that the information concerning investments must be further broken down into three parts: a look back on the progress and realisation of investments scheduled to be carried out over the previous two years, a quantitative look ahead to the investments planned for the 2026-2030 period, and a qualitative look ahead to investments planned for the 2031-2035 period.

With regard to the IP, in addition to the Gas Act, both an Order in Council (the 'Decree'[2]) and a Ministerial Regulation (the 'Regulation'[3]) have been adopted. Both the Decree and the Regulation specify further rules concerning the investment plan. One of the main rules concerns the assessment of the draft IP: GTS must submit the draft IP to the Netherlands Authority for Consumers and Markets (ACM) and the Minister of Climate Policy and Green Growth for review. ACM assesses whether GTS can in all reasonableness be deemed to have been able to put together the draft IP, while the Ministry of Climate Policy and Green Growth verifies whether GTS has rendered sufficient account on developments in the energy market. Both these assessments are made within 12 weeks of the date the draft IP is submitted.

2 *https://wetten.overheid.nl/BWBR0041487/2021-01-01*
3 *https://wetten.overheid.nl/BWBR0041543/2023-04-18*

GTS considers the draft IP to be a guiding document when it comes to assessing the necessity for investments by GTS. The manner in which capital costs (including those involved in new investments) are compensated is set out in the Methodology Decision (Methodebesluit). GTS only includes investments in this plan on the condition that it will be able to recover the efficient costs of these investments.

GTS submits a draft IP to ACM and the Ministry by no later than 2 January every other year (in even years). GTS definitively adopts the IP after approval by the authorities. The investment plans are valid for two years; the current draft IP covers the period from 1 January 2026 to 31 December 2027. Should significant changes occur in the interim, the IP may be revised through an addendum at any time.

In addition to the obligation to submit a draft IP every two years, GTS has been tasked by the Ministry of Climate Policy and Green Growth with drawing up an annual security of supply report. Given the overlap between the IP and the security of supply report, this draft IP meets both these statutory requirements. Two components of the security of supply report are not addressed in the main body of the draft IP, i.e. peak supply and emergency supply. These are discussed separately in Appendix VI.

Scope

This draft IP concerns the CAPEX investments for which a final investment decision (FID) is currently expected to be made in the period between 2026 and 2035. Investments to meet a need identified in another process, such as investments required to connect small fields to the network or facilitate incremental capacity, are outside the scope of this draft IP. The need for these investments is determined by national legislation or in European legislation. However, given that GTS wants to present its full investment portfolio, these investments, where present, are also included in our draft IP for information purposes.

Guide to this report

The first section of this draft IP explains the methodology and the second describes and explains the various scenarios. Section 3 expounds on developments on the gas market both inside and outside the Netherlands. Following this, the results of the bottleneck analysis are described in Section 4. Section 5 then presents an overview of the required investments and, finally, Section 6 details the progress of major investments and provides a retrospective of investments completed in 2023 and 2024.

Coordination with other network operators and stakeholders

GTS has, like in previous years, teamed up with TenneT and all the regional TSOs in developing four scenarios for the draft IP to provide a comprehensive picture of developments in the Dutch energy system.

In the run-up to the 2026 IP, over the past two years the grid operators trade association Netbeheer Nederland (NBNL) has, once again, worked on shaping scenario development by holding stakeholder sessions and applying the input from these. In the second half of 2024, over the course of three stakeholder sessions, the frameworks of the new scenarios, new storylines and quantification per sector were assessed with various grid operators' stakeholders. The result was the four IP scenarios that grid operators use for the 2026 IP.

In this draft IP, the four scenarios have been completed with import/export and transit flow data based on the 2024 Ten Year Network Development Plan (TYNDP) 4 of the European Network of Transmission System Operators for Gas (ENTSOG).

Consultation

GTS organised two information sessions for the various parties that participate in the energy market. The first information session about the process and the scenarios for the draft IP was held in the autumn of 2024, while the second, which will focus on the investments, will be held in the autumn of 2025. Dutch legislation furthermore provides for a market consultation process that spans four weeks. GTS submits this draft IP for consultation over the period from 3 november to 1 december 2025. Responses from these public consultations and a description of the methods of processing these will be appended to this document.

4 *https://www.entsog.eu/tyndp#entsog-ten-year-network-development-plan-2024*

1 Methodology

1.1 Process for adopting the investment portfolio

This section describes the methodology used to compose and adopt the investment portfolio.

The investment portfolio is made up of two types of investments:

- expansion investments to increase the available capacity, acquisitions, and connections for current and new and customers;
- replacement investments to maintain the quality of the network and for pipeline diversions. Pipeline diversion is when a pipeline is moved to another location at the request of a third party, such as the Dutch national infrastructure authority Rijkswaterstaat.

As part of GTS' current investment portfolio process, GTS sets the budget required for year n+1 in mid-August of each year. In addition to the annual plan for 2026, data on current expansion and replacement investments is available for the period 2027 to 2030 inclusive. This data has been included in this draft IP.[5]

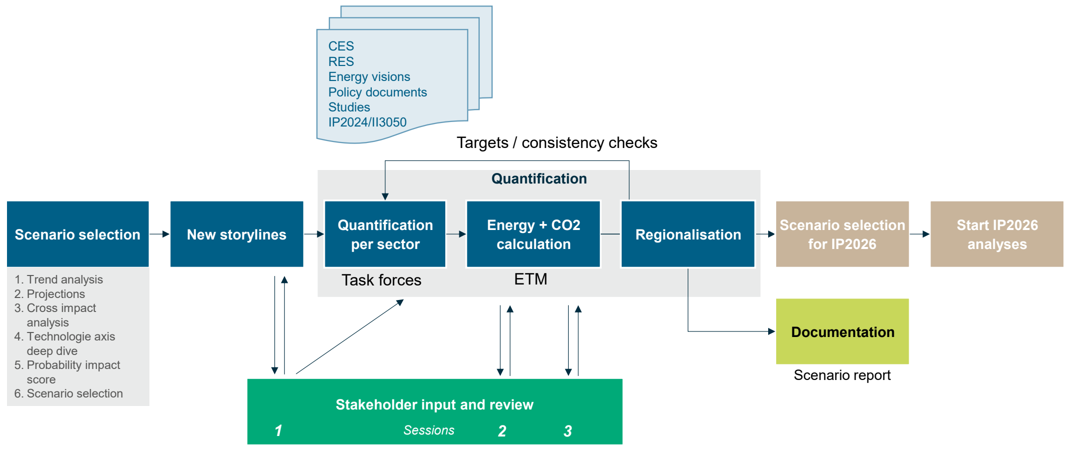
1.2 Scenario design

The development of scenarios roughly consists of two steps. The process starts with drawing up storylines, i.e. qualitative descriptions of what the world might look like in the future. An important criterion is that the storylines for the various scenarios must cover the key uncertainties. This mainly concerns the uncertainties that are relevant for the development of the energy infrastructure.

In the second step the storylines are quantified, meaning that the specifics of the supply and demand of energy (gas, electricity, etc.) are accurately determined and documented.

Figure 1.1 shows a visual representation of the scenario process for the 2026 IP.

Figure 1.1: IP scenario preparation process



5 *See Section 5.1 General for a summary of the investment data that GTS has included in this draft IP.*

Drawing up the storylines and quantifying them was carried out by a working group at Netbeheer Nederland consisting of representatives from all grid operators (the 'scenario working group'). Quantification of the various sub-topics was delegated to various sub-working groups within this scenario working group. These sub-working groups discussed the topics (supply and demand categories) in detail with the aim of tightening the parameters (e.g. supply and demand of natural gas), for which purpose they used public sources, input from stakeholders, and relevant information provided by companies.

Scenario development for the 2026 IP started in the spring of 2024. A broad group of external stakeholders, including representatives from the Dutch ministries, provincial authorities, ACM, and the Dutch energy, industry and construction sectors, has been engaged at three points in the scenario process. The draft storylines were discussed during an initial stakeholder session held in June 2024. The quantification was discussed in detail in the second and third stakeholder sessions (in October and November 2024). During these sessions, both the overall picture and the details of the quantification emerged and were passed on to the 2026 IP Scenario Working Group for processing in the scenarios. The feedback and suggestions from the stakeholders have since been processed in the scenarios. In December 2024, the datasets were frozen, after which grid calculations could begin.

The scenarios were developed for the period up to the end of 2050. The grid operators use a single scenario framework for the 2026 IP, II3050, and other analyses. For more detailed information, refer to the scenario report published in the spring of 2025[6].

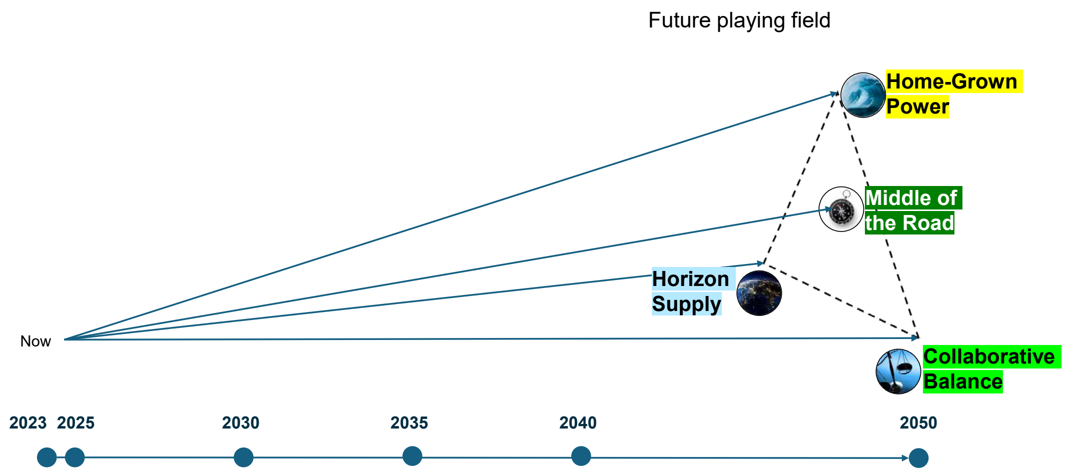
Storylines

This draft 2026 IP contains four different scenarios. The storylines for these scenarios have been rebuilt using the PESTEL trend analysis[7]. For this purpose, an analysis of the most relevant trends and developments was conducted. These trends and developments were interpreted and rendered into possible projections for the future. A cross-impact analysis was used to map the correlations between the various projections. Projects with a good correlation were used to create scenario storylines. Based on an assessment of the probability of success and the impact on the energy system (electricity, gas, etc.), four scenario storylines were ultimately selected. Figure 1.2 provides a high-level depiction of the correlations between the four 2026 IP scenarios.

6 *https://www.netbeheernederland.nl/publicatie/netbeheer-nederland-scenarios-editie-2025*

7 *PESTEL analysis is a strategic framework used to analyse external macro-environmental factors that can affect the relevant organisation's operations and strategy. This framework encompasses Political, Economic, Socio-cultural, Technological, Ecological and Legal factors.*

Figure 1.2: Common ground for the 2026 IP scenarios



All the scenarios take established and proposed Dutch and EU energy and climate policies as a starting point. All scenarios comply with the requirement set out in the Dutch Climate Act to achieve a 55% reduction in GHG emissions by 2030 (as also described in the Dutch framework coalition agreement) and to be climate-neutral by 2050 (reduction in greenhouse gases to net-zero).

1. The Middle of the Road (MR; Koersvaste Middenweg in Dutch) scenario is based on the average expected developments in the energy system. A key source for this scenario is the National Energy System Plan (NESP)[8] and the provincial energy visions. Netbeheer Nederland will further interpret the NESP to arrive at a consistent scenario. Policy ambitions are therefore not necessarily adopted word for word, meaning this scenario categorically cannot be considered to be the NESP scenario. The Middle of the Road scenario builds on the Dutch Climate Ambition scenario from the 2024 IP.

2. The Home-Grown Power (HGP; Eigen Vermogen in Dutch) scenario is the scenario with a high impact on the electricity infrastructure and builds on the National Driver scenario from the 2024 IP and National Leadership from II3050v2, with also several elements from Regional Initiatives from II3050v2.

3. The Collaborative Balance (CB; Gezamenlijke Balans in Dutch) scenario is the scenario with a high impact on the gas infrastructure and builds on the International Ambition scenario from the 2024 IP and European Integration scenario from II3050v2.

4. The Horizon Supply (HS; Horizon Aanvoer in Dutch) scenario is the scenario with a high impact on the hydrogen infrastructure and builds on the International Ambition scenario from the 2024 IP and International Trade scenarios from II3050v2.

8 *https://www.rijksoverheid.nl/documenten/rapporten/2023/12/01/nationaal-plan-energiesysteem*

Quantification for the Netherlands

The four scenarios have been quantified for the Netherlands using the Energy Transition Model (ETM) developed by Quintel Intelligence[9]. Using the ETM, volume balances of annual demand for gas, electricity and other energy carriers such as oil, coal, hydrogen and biomass were defined for each of the four scenarios. Where possible, external sources have been used to provide support for the assumptions used in the scenarios, including:

- historical project completion data;
- customer projects carried out by grid operators (connection requests, etc.);
- sectoral plans: regional energy strategy, heat transition vision, national charging infrastructure agenda, cluster energy strategies, etc.;
- adopted and proposed policies (PBL, Climate and Energy Outlook (Klimaat- en Energieverkenning, KEV);
- formulated government ambitions (NESP, framework coalition agreement, coalition agreement, EU policy ambitions, energy visions, etc.);
- studies, roadmaps, and other literature.

Where a supporting external source was not available, the network operators used their own analyses to provide support for the assumptions applied. The data freeze date for the quantification of the scenario assumptions was in December 2024.

From this quantified data, TenneT subsequently extrapolated demand in the electricity market on an hourly basis. This analysis allowed TenneT to determine gas demand from power stations and other users, which has been included in this draft IP. GTS furthermore used the quantification to estimate peak gas capacity for end user sectors. For cross-border gas flows, this draft IP is based on supply and demand figures and flow simulations from the ENTSOG 2024 TYNDP.[10]

1.3 From scenarios to bottlenecks

1.3.1 Bottleneck definition

This draft IP uses the definition of bottleneck as specified in Article 1.1 of the Regulation on the investment plan and quality of electricity and gas (Regeling investeringsplan en kwaliteit elektriciteit en gas) i.e. '...parts of the grid or gas transmission network that are expected to pose a considerable risk to the adequate fulfilment of the duties assigned to the network operator by or under the Dutch Electricity Act of 1998 or the Dutch Gas Act'. For capacity and quality bottlenecks, GTS applies the following definitions:

- In the case of a capacity bottleneck, 'considerable risk' is defined as a situation ensuing from one or multiple pressure drop calculations (as specified in sub-section 1.3.2 Identifying capacity bottlenecks), where the entry and/or exit capacity cannot be transported, while factoring in entry and exit specifications.
- In the case of a quality bottleneck, 'considerable risk' is defined as non-compliance with one or several of the company values, determined based on the combination of the frequency of occurrence of the unwanted event and the potential severity of the impact. This risk is measured in financial terms.

9 *https://energytransitionmodel.com/*
10 *https://www.entsog.eu/tyndp#entsog-ten-year-network-development-plan-2024*

1.3.2 Identifying capacity bottlenecks

GTS has been tasked with facilitating the transmission of gas to consumers connected to the grid in an economically effective manner and, to make this possible, developing the national gas grid in a safe, efficient and reliable manner. Under EU regulations, GTS operates its network as a decoupled entry-exit system, which gives grid users the right (and freedom) to use the available capacities independently of each other, provided that gas quality and system balance are secured.

Simultaneous combinations of entry and exit capacity may occur that generate a high level of activity on the grid. GTS sets up the network in such a way that it can accommodate these kinds of peak transmission situations, taking into account grid users' behaviour – realistically speaking – at entry and exit points, so as not to have to invest to cover unrealistic extremes. This approach makes it possible to set up the national gas transmission network in a targeted manner.

GTS conducts the bottleneck analysis based on forecasts of capacity at entry and exit points. These forecasts are based on current contracts and anticipated future capacity sales.

Main gas grid and regional distribution network

GTS' network has two components. The high-pressure gas grid (HPGG) transports gas over long distances and operates at pressures ranging from 40 to 80 bar. The HPGG thus functions as a transit network to and from other countries and to the metering and regulating stations that feed the regional distribution network. The HPGG also transports gas to large consumers such as industrial companies and power stations. The regional distribution network (RDN) is made up of branches from the HPGG that operate at pressures ranging from 8 to 40 bar. The RDN is a network that supplies directly to smaller industrial companies and distribution network operators that supply to the small-scale consumers market.

The HPGG is split up into two networks, one for transmission of high-calorific gas and one for low-calorific gas (originally known as Slochteren or Groningen gas). High-calorific gas can be converted into low-calorific gas at several points in the system by blending different gases or adding nitrogen. The RDN distributes virtually exclusively low-calorific gas.

The largest gas flows and the most dynamic part of the entry-exit system are found in the HPGG. The major import and export flows, industrial demand, the alternating filling of and withdrawal from storage facilities, and the blending of different gas qualities all converge in the HPGG. The HPGG has long pipelines with large diameters of up to 48 inches, compressors to increase the pressure, and blending stations to convert high-calorific gas to low-calorific gas by injecting nitrogen. The RDN is of an entirely different nature, as it accommodates smaller gas flows over average distances of only a few kilometres from the HPGG. The RDN pipelines have smaller diameters (typically between 4 and 20 inches) and compressors are not needed due to the short transmission distances.

Capacity testing

Models are used to test network capacity. Given the differences between the HPGG and the RDN, a different testing method is used for each network. However, what both have in common is that pressure drop calculations are made for the key extreme transmission situations for each of them. Pressure drop calculations are made using the Multi-Case Approach (MCA) tool.

Capacity testing for the HPGG starts by generating a complete set of realistic heavy-load transmission situations in a certain forecast year. These situations are based on a broad range of possible circumstances (summer versus winter, high and low temperatures, technical outages at entries and exits, etc.), as well as on relevant combinations of expected entries and exits. Owing to the temperature dependence of part of the demand, calculations for each month are based on the lowest possible temperature that can occur in that month (as shown by weather and climate analyses). In addition, the following parameters are used in the analyses: the risk of technical unavailability of major supply points; behaviour of storage facilities; possible correlations between various entry and exit points. In each of the forecast years, this has led to roughly two hundred balanced entry and exit combinations that were tested for transmissibility by performing the associated pressure drop calculations. Tests are subsequently performed to assess transmissibility within the network's pressure and flow limits. If pressure remains under the minimum or the flow limit is exceeded at a point or in a pipeline during one or several of the tested transmission situations, this constitutes a capacity bottleneck.

Capacity testing on the RDN is based on an analysis of network load at the peak time of a day in January or February with an average effective 24-hour temperature of minus 17°C.[11] If transmission can be accommodated in these extreme conditions, this means there are no transmission bottlenecks. This basically covers all possible transmission situations. Recent developments, such as biomethane feed-in at specific points in the RDN, could lead to other types of bottlenecks.

The severity of any transmission capacity bottleneck identified will be determined through a follow-up test. The criteria used are the expected frequency of occurrence and the degree by which the capacity limit is exceeded and/or pressure remains below the minimum. Some transmission capacity bottlenecks can be resolved by switching the network differently, for example by setting a valve or coupling piece differently (possibly temporarily). To eliminate larger transmission capacity bottlenecks, more substantial measures may be needed, such as laying a new pipeline section, expanding a compressor station, or installing a new connection.

Especially in the HPGG, but sometimes also in the RDN, the cause of a capacity bottleneck may be elsewhere in the network, i.e. not where the capacity limit is actually exceeded or where pressure actually stays below the minimum level. The location of a transmission capacity bottleneck is generally not a good indicator for the place where it would be most efficient and effective to take measures.

For the purposes of this draft IP, a bottleneck analysis was conducted based on the supply and demand forecasts of all four 2026 IP scenarios for the forecast years of 2030, 2035 and 2040. It should be noted that these are 'gas years', which means that 2040, for example, runs from 1 October 2039 to 30 September 2040.
The methodology GTS uses for capacity assessment is also described on the GTS website in the document Ontwerp uitgangspunten transportsysteem[12] (Design principles of the transmission system).

11 In accordance with Article 10a(1) of the Dutch Gas Act, GTS has a general duty to ensure security of supply. Article 10a(4) then refers to the Security of Supply (Gas Act) Decree, where Article 2(1) includes the peak delivery duty at a temperature of minus 17°C or higher. Effective 1 January 2026, these legal provisions will be transferred, in a policy-neutral manner, to form Article 3.64 of the Energy Act and Article 3.30 of the Energy Decree.

12 https://www.gasunietransportservices.nl/en/network-operations/the-transmission-network/capacity-of-the-transmission-network

1.3.3 Identifying quality bottlenecks

GTS manages its operating assets based on the philosophy of risk-based asset management. This means that whenever a decision is needed on expenditure, the required outlay will be weighed against the level of risk mitigation that it would deliver. To simplify this comparison, risks are expressed in monetary terms, specifically the potential expenditure over a 25-year period expressed as a net present value. Appendix VII describes the detailed calculation of the corresponding discount rate. Risks are assessed based on the four company values that GTS goes by:

- safety;
- transmission security;
- sustainability;
- financial loss acceptance.

Product quality, i.e. the quality of the gas, is part of the company values of safety and transmission security. GTS takes its lead for determining gas quality from the Regulation on Gas Quality. Service quality is monitored through the 'identifying capacity bottlenecks' process.
The total risk is the sum of the scores on the four company values, each of which have the same weighting. The methodology used is further explained in the Quality Document that can be found (in Dutch) on the GTS website[13].

As stated in our mission and vision, we aim to best serve the market by delivering our transmission services in a customer-focused and transparent way.
In the domain of management and maintenance, this makes it possible to choose from different maintenance strategies. The costs of a measure (a procedure measure or a project) for solving each bottleneck must be estimated. It may emerge that a measure will not mitigate the entire risk, in which case the residual risk must also be determined.

The efficiency of a measure is defined as the expected risk reduction (the original risk minus the residual risk expressed as present value) divided by the costs of the envisioned measure:

$$\eta = \frac{\Delta \mathrm{R}[€]}{\mathrm{K}\,[€]}$$

13 https://www.gasunietransportservices.nl/uploads/fckconnector/aea8f83f-1953-51ec-889a-e60a111a67b8/3516826263/Kwaliteitsdocument%20versie%20juli%202025%20-%20SAMP%20GTS.PDF

The measures for the various risks are prioritised by choosing the measures with the highest efficiency. There are two prioritisation rounds:

1. When risks are ranked. For risks that are not acceptable, measures are taken right away. For risks that are undesirable, measures are taken in a systematic and structural manner, while risks that are acceptable on certain conditions are monitored based on the ALARA (as low as reasonably achievable) principle. Measures for risks that need to be resolved are scheduled and carried out in the relevant implementation year.

2. The second round involves drawing up the plans/timeline for a particular year of implementation. In this round, the following aspects are decisive:

- technical gas transmission possibilities;
- permit procedures;
- synergy with other activities that can cut costs, reduce the impact on safety and gas transmission, etc.;
- the organisation, availability of technical and other staff;
- the budget;
- impact of and on regular maintenance;
- the energy transition.

1.3.4 Identifying IT investments

Given that GTS makes use of IT assets owned by Gasunie, GTS is not submitting any CAPEX IT investments in the 2026 IP.

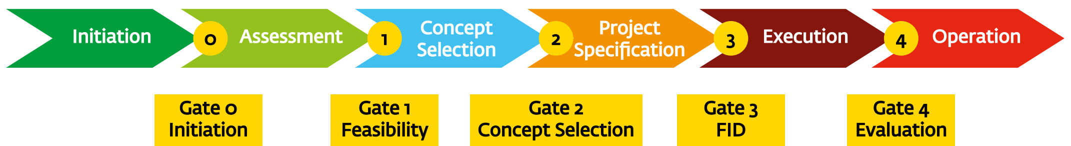
1.4 Measures

1.4.1 Project governance and project phases

The governance of technical projects is based on the Project Governance System. This system details all stages of project development, from initiation (determination/documentation of market, technical and/or business case), the study and alternatives analysis through to approval and final investment decision, actual construction and commissioning, and, finally, project evaluation.

The project governance process is set up as a 'phase-gate process' with 'gate passages' (see Figure 1.2. Phase-gate process). It is an integrated working process with clearly defined roles and responsibilities.

Figure 1.2: Process gates



Gate details:

- Gate 0 – Project initiation: definition of the project drivers, specification of the need and start of studies
- Gate 1 – Feasibility: study into the feasibility of the proposed solutions
- Gate 2 – Concept Selection: evaluation of possible alternatives and selection of the preferred alternative, including establishing functional principles (functional specification)
- Gate 3 – FID: approval of the project, including the scope, schedule and costs based on project specifications
- Gate 4 – Evaluation: completion and project evaluation, after RFO (ready for operation).

Through the Project Governance System, GTS ensures that projects are developed and executed in a controlled and cost-effective way. Depending on the nature and size of a project, one or more of these gates may be omitted. Relevant information relating to a project is recorded in a project file and in reports from the project board.

1.4.2 Budgeting methodology

The costs involved in an investment project are both the primary costs, including material costs and work by third parties, and secondary costs such as hours worked by GTS employees. Project approval (Gate 3) is based on the basic budget for the project, which comprises the following cost components:

- indirect engineering and land-use/real-estate matters;
- management, design and supervision;
- materials;
- construction.

The basic project budget does not include allowance, indexation, contingency or management reserve.

The Final Investment Decision (FID) for a project provides insight into the risk of a budget overrun through the 'contingency' (P50 estimate) and 'management reserve' (P90 estimate) items.[14] The size of these items is based on the inaccuracy of the basic budget and the budget overrun probability.

The costs of projects for which an FID has not yet been made are based on study estimates or indicators with an uncertainty margin of 40%.
For each project, the development of the financial aspects is monitored and recorded, which ultimately results in production of a cost per project that is the basis for capitalisation of projects.

14 The P50 estimate includes the Basic estimate + Allowance + Indexation + Contingency. The sum of these four items is the most probable level of capital investment needed to carry out the project (50/50 value). With a P50 estimate, there is a 50% chance of either exceeding the budget or remaining below budget. The P90 estimate is the P50 estimate plus the management reserve (overrun allowance). The management reserve is an unallocated sum set aside to cover parts of a project or events that occur during a project that cannot be predicted, the 'unknown unknowns'. With the P90 estimate, there is a 90% probability of staying under budget and only 10% of exceeding it.

1.4.3 Portfolio and budget

The investment portfolio includes investments relating to expansion (capacity and connections), replacement (quality) and rerouting of infrastructure (diversions). Investments may be needed to address the following matters:

- quality bottlenecks resulting from policy or from periodic risk analyses and corrective actions arising from the quality assurance system (QAS);
- capacity issues that arise due to market demand;
- external drivers (including spatial planning developments and legislation);
- efficiency measures (business cases); and/or
- corporate social responsibility initiatives, including emission reduction measures.

There are four factors that complicate multi-year forecasts for the investment portfolio, as explained below.

Investment portfolio adoption process

As part of GTS' investment portfolio process, GTS sets the budget required for year n+1 in mid-August of every year.

GTS has accordingly noted that the portfolio process for GTS' technical investments is not effectively aligned with the approval period under relevant legislation governing the draft IP. This complicates the multi-year forecast.

Asset management

In GTS' mission, vision and strategy, we express our aim to serve the market well with due care for safety, reliability, sustainability and cost awareness, which we do by managing our operating assets based on a risk-based asset management philosophy. This means that GTS regularly inspects its assets and invests only when necessary; as a result, a small portion of the replacement investments is made up of preventive (and therefore predictable) measures. The majority of the replacement investments are made based on an asset's current condition and can therefore be planned ahead to a limited degree only. Experience with similar operating assets gives GTS an idea of how many replacement investments will be needed in the long term and of the funds involved. Based on the risk scores, GTS will decide in the short term whether assets need replacing, and if so, which ones.

The risk-based asset management philosophy enables GTS to make the most of its operating assets and limit the investment levels (and the ensuing tariffs), while at the same time offering its customers a reliable, future-proof gas transmission grid.

Developments prompted by third parties

Part of the portfolio is determined by developments prompted by third parties rather than driven by GTS itself, such as connection requests and diversions.

Network disruptions

GTS factors in that the investment portfolio and ultimate financial realisation during the year may be subject to change as a result of contingencies and disruptions in the system and other (unforeseen) circumstances.

1.4.4 Future-proof grid

In accordance with the Information Requirements Framework for the 2026 IP, GTS must describe what GTS envisions a future-proof grid to look like. GTS considers a future-proof natural gas network to be a gas infrastructure that, at a minimum:

- can enable GTS to meet its statutory duties;
- is sufficient to be able to handle the various transmission/transport situations;
- ensures that security of supply remains assured (including during the energy transition);
- offers flexibility for the energy transition, for example, through the use of repurposed natural gas pipelines; and
- continues to guarantee the resilience of the natural gas network.

1.4.5 Divergence during realisation

There are numerous factors, both internal and external, that could lead to the planned investment project not staying on schedule,

with the result that it may not be possible to complete the project within the allotted time frame. Appendix V and section 6 delve into the main factors that could lead to delays, as well as into measures to prevent or mitigate delays.

2 Scenarios

2.1 Introduction

Grid operators, united under Netbeheer Nederland (NBNL), use joint future scenarios to visualise how the energy system could develop in the Netherlands between the present day and 2050. The 2025 edition of the Netbeheer Nederland scenarios (Netbeheer Nederland Scenario's Editie 2025) provides more insight into the relevant changes and, with this, into the scope and direction of the infrastructure challenge. By developing scenarios and discussing and assessing these with stakeholders, key uncertainties can be taken into account and the risk of future overinvestment or underinvestment can be limited. These scenarios require periodic updates given that energy supply and demand will change significantly over the coming decades.

The scenarios used for the 2026 IP are a further development of the scenarios used for the 2024 IP, with an extensive update based on the most recent insights into energy and climate policy and sectoral plans that have been further elaborated. The most significant changes since the publication of the 2024 IP concern the publication of the National Energy System Plan[15] for the Netherlands, increased geopolitical uncertainty, and changes in the pace of implementing sustainability measures. Feedback on the previous scenarios has also been incorporated, and relevant figures have been updated based on recent market and technology research, sectoral energy roadmaps, political policy documents, and other sources.

During the scenario development process, discussions were held with a broad group of stakeholders about the scenario storylines, the final/draft results, and the key uncertainties. This input was then used to refine the scenario storylines and transition pathways. The development of the joint scenarios under the banner of Netbeheer Nederland resulted in a comprehensive document, which was published on the website of Netbeheer Nederland on 13 May 2025: Netbeheer Nederland Scenario's Editie 2025[16]. This report describes the scenario development process, including the sources, parameters, assumptions, and methodology used.

2.2 Requirements for the scenarios

For the purpose of investment planning, the scenarios must be current, relevant and realistic (i.e. plausible). For the development of relevant, realistic future scenarios, the relatively certain developments are included in all scenarios, while the less certain developments – insofar as these are relevant and realistic (plausible) for the planning of infrastructure development – are included in at least one of the scenarios. For the time window covered in the scenarios, it is important to look both at the infrastructure measures included in the 2026 IP (ten years ahead) and the further development of the energy system in the period thereafter. The 2025 edition of the Netbeheer Nederland scenarios describes possible development pathways between 2025 and 2050, with the intervening years of 2030, 2035, and 2040 also explicitly detailed.

15 *https://www.rijksoverheid.nl/documenten/rapporten/2023/12/01/nationaal-plan-energiesysteem*
16 *https://www.netbeheernederland.nl/artikelen/nieuws/netbeheer-nederland-scenarios-editie-2025*

2.3 Summary of the scenario report

For this IP, the 2025 edition of Netbeheer Nederland's scenario report Netbeheer Nederland Scenario's Editie 2025 has been summarised, with the development of the IP scenarios, along with their quantitative development, being described.

2.3.1 Development of the scenarios

Over the coming years, energy supply and demand will change dramatically in every sector, driven by the energy transition, changing geopolitical relations, and societal mandates. To develop the 2025 NBNL scenarios report, a PESTEL analysis was used. This methodology identifies political, economic, social, technical, environmental and legal trends, risks, dilemmas and uncertainties. The PESTEL analysis revealed that the following uncertainties have a significant impact on how the energy transition may develop:

- The political climate on the global stage, in the EU, and in the Netherlands. International relations are under pressure while, at the same time, the course in the EU is changing, and national politicians are making their own concrete choices. A considerable amount of policy still needs to be developed for the energy transition. Key questions in this regard include: which part of the government will take the lead in this, and how will the guidance/coordination be arranged?
- The economic feasibility of the transition and the future earning capacity of the Netherlands is determined by economic factors such as energy prices, grants, taxes, and the trade in (available) raw materials.
- The energy transition is a social transition and requires broad public support. The degree of behavioural change, fair cost sharing, and the extent to which citizens, businesses, and government bodies share responsibility are decisive for the success of the transition. If there is limited support for sustainable energy projects in the Netherlands, we may continue to see a greater dependence on imports.
- Technological developments also play a crucial role: the speed and scalability of innovations such as hydrogen electrolysis, battery storage, and CO2 capture are uncertain, as is the future role of energy storage and digitalisation. Security of supply requires precise coordination of supply and demand at the international, national and regional levels, with zero-carbon, flexible capacity playing a significant role.
- Major uncertainties surrounding climate and the environment include the extent to which fossil fuels, feedstock and raw materials will be used, as well as the level of impact on the living environment that we as a society deem acceptable. This concerns, for example, the extent to which society accepts onshore wind or underground CO2 storage and the prospects for the use of fossil fuels, feedstock and raw materials.
- The degree of consistency in policy and regulations has an impact on the success rate of major transitions and projects. Additionally, uncertainty surrounding permitting affects the extent to which large projects can proceed.

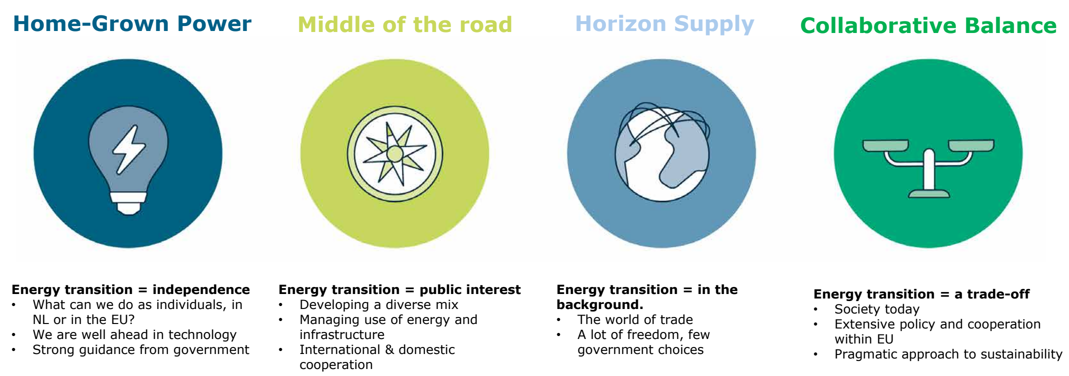
Alongside the uncertainties described above, the following assumptions are incorporated equally into all scenarios:

- The emission reduction targets are achieved within the given timeline. The scenarios show what is needed to achieve the targets, the choices that can still be made, and – through the grid impact analyses – the infrastructure required for this.
- Without additional measures, current grid capacity is insufficient to accommodate the large-scale electrification required over the coming years, meaning that significant investments in the power grids are required. The scenarios assume that energy infrastructure will be available on time. The grid impact analyses for the investment plans reveal uncertainty in the development of the energy infrastructure.
- Climate and the environment also play a significant role in the energy transition, with changes in weather – such as warmer weather and variable wind conditions, as well as extreme weather conditions playing a role – and investments in climate change adaptation measures impacting the development of the energy system. The scenarios do not vary in terms of the degree of weather change.
- The scenarios use the average demographic trend, population growth, and household composition.
- The scenarios serve to predict unlimited customer demand. The scenarios do not, at this point, take congestion and/or infrastructure limitations into account.

2.3.2 Scenarios and storylines

Based on the identification of trends and uncertainties, a multitude of possible scenarios emerged. A cross-impact analysis was subsequently used to assign a score to these scenarios and narrow them down to four scenarios relevant to the energy infrastructure. By summarising the various possible developments for these topics to form logically coherent storylines and then quantifying these, the following four scenarios emerged: Middle of the Road (MR), Home-Grown Power (HGP), Collaborative Balance (CB), and Horizon Supply (HS) (see Figure 2.1).

Figure 2.1: The four scenarios published in the 2025 edition of Netbeheer Nederland Scenarios



The Middle of the Road scenario traces the expected course of the energy transition based on current trends, supplemented with policy ambitions from, among other sources, the National Energy System Plan, policy documents, and provincial energy visions. These sources have been combined to form a consistent scenario, which builds on the Climate Ambition scenario from the 2024 IP. The scenario is characterised by strong and rapid electrification of end-use energy consumption, with total energy consumption balanced by supplementary use of other energy carriers.

The Home-Grown Power scenario describes a future where the Netherlands, in terms of government, policy and markets, strongly focuses on energy autonomy and a high degree of self-sufficiency. This scenario combines elements from the National Driver scenarios from the 2024 IP and National Leadership from II3050v2, supplemented with characteristics from Regional Initiatives of II3050v2. Sustainable power generation is growing rapidly, especially in terms of solar and wind. Maximum effort is being exerted in the areas of flexibility, large-scale district heating, and the use of green hydrogen. Rapid electrification of industry, transport, and the built environment is taking place, with a significant impact on the electricity infrastructure.

The Collaborative Balance scenario outlines a future where collaboration and coordination within the EU/Europe are central and is based in part on the principles of the International Ambition scenarios of the 2024 IP and European Integration of II3050v2. Increasing the sustainability of the demand sectors is achieved taking a hybrid approach, with both electrification and gas playing a key role. In this scenario, the gas infrastructure remains vital, partly due to the use of natural gas, biomethane, biofuels and blue hydrogen. The scenario also features a high level of energy transit abroad, allowing neighbouring countries to benefit from the sustainable energy made available through Dutch imports.

The Horizon Supply scenario builds on the International Ambition scenarios from the 2024 IP and International Trade from II3050v2 and assumes a world in which sustainable energy is widely available internationally. In this scenario, the Netherlands focuses heavily on importing energy and semi-finished industrial products, resulting in relocation of a portion of the Netherlands' energy-intensive industrial companies abroad and a low final energy consumption in the Netherlands. This import orientation limits domestic generation of sustainable electricity and places the emphasis on international energy value chains.

2.3.3 Quantitative development of the scenarios

Based on the storylines, quantitative scenarios were developed, showing energy demand per energy carrier (Figure 2.2) and per sector (Figure 2.3), as well as the energy supply (Figure 2.4)[17]. In addition, installed capacities for generation/production resources and flexibility were also calculated. Further quantification can be found in the 2025 edition of the Netbeheer Nederland scenario report, and in the Energy Transition Model (ETM) (see Table 2.1).

17 *The visuals are taken from the Netbeheer Nederland scenario report; they show the energy volumes based on the net calorific value.*

Table 2.1: Links to the quantification of the scenarios in the ETM, per scenario and per reference year

Scenario					ETM scenario links
Middle of the Road (MR) scenario	2025[18]	2030	2035	2040	2050
Home-Grown Power (HGP)	_	2030	2035	2040	2050
Collaborative Balance (CB)	_	2030	2035	2040	2050
Horizon Supply (HS)	_	2030	2035	2040	2050

Figure 2.2: End-user consumption in the Netherlands, in TWh per energy source

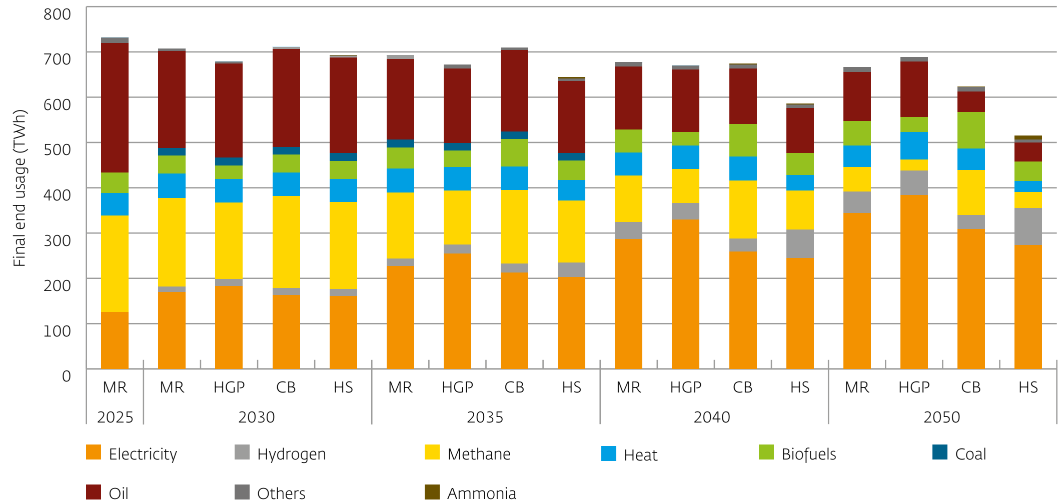
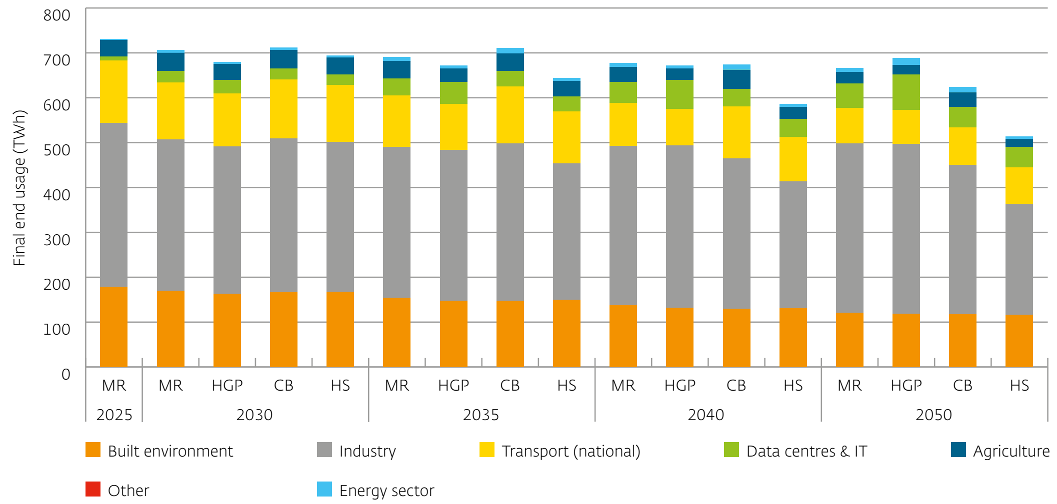
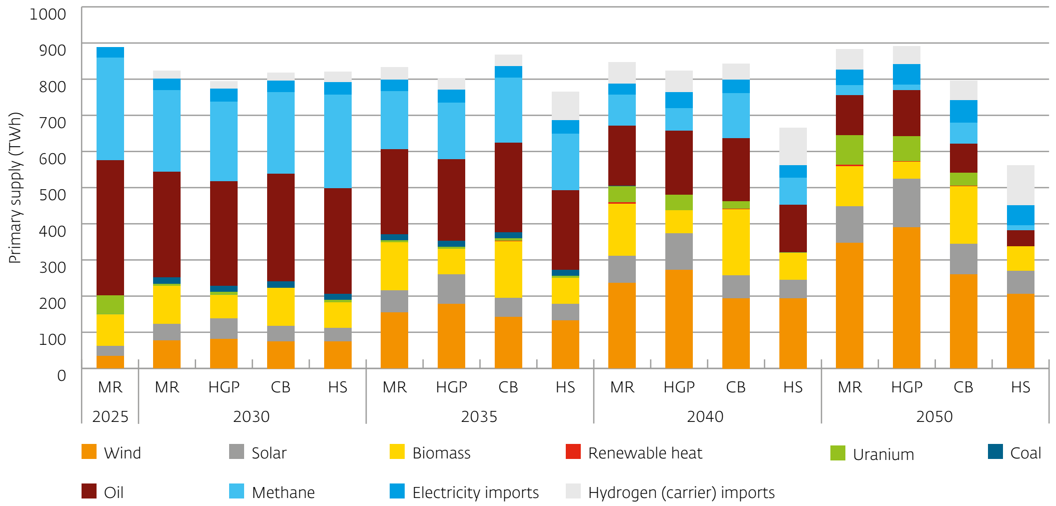


Figure 2.3: End-user consumption in the Netherlands, in TWh per sector



18 *The 2025 scenario has been calculated as a common starting point for all scenarios*

Figure 2.4: Primary supply for domestic demand (excluding trans



2.4 Gas demand in the Netherlands

This section discusses gas demand in the Netherlands, as expounded in the four scenarios, making a distinction between volume trends and peak capacity trends. Volume in this case means the total volume of gas consumed in one year[19]. The annual volume is expressed in terawatt hours (TWh), based on the gross calorific value for natural gas[20]. Peak capacity represents the peak hourly demand in a particular year, i.e. the demand that arises during a period of extremely cold weather. In line with the Security of Supply (Gas Act) Decree, the assumption is the peak hourly demand on a day with an average effective temperature of minus 17°C, as measured at the Royal Netherlands Meteorological Institute in De Bilt. Capacity is expressed in gigawatts (GW). In this section, gas means methane (natural gas and biomethane), unless explicitly stated otherwise.

Figures 2.5 and 2.6 show the envisioned volumes and capacity/peak capacity trends for domestic demand in the various 2026 IP scenarios. All scenarios show a downward trend in gas consumption, albeit to different degrees. Between now and 2030, gas demand will decrease by between 9% and 20% and will be between 22% and 71% lower in 2040 compared to 2025. Peak capacity will also decrease, though slightly less rapidly than as seen with the annual volume. Given that the developments that have led to this decrease vary per sector, below we explain the developments in each sector individually.

19 *The calculations were based on the 2012 climate year. In terms of outdoor temperatures, this was a fairly normal year, though slightly colder than the long-term average. Wind and solar energy experience Dunkelflaute, i.e. periods of low power generation.*

20 *The Netbeheer Nederland scenarios report published in May 2025 shows gas volumes at the net calorific value. The Energy Transition Model (ETM) also uses the net calorific value. This has been converted to gross calorific value for this investment plan. Based on gross calorific value, a cubic meter of gas contains approximately 11% more energy.*

Figure 2.5: Annual volume trends in domestic gas demand under the 2026 IP scenarios

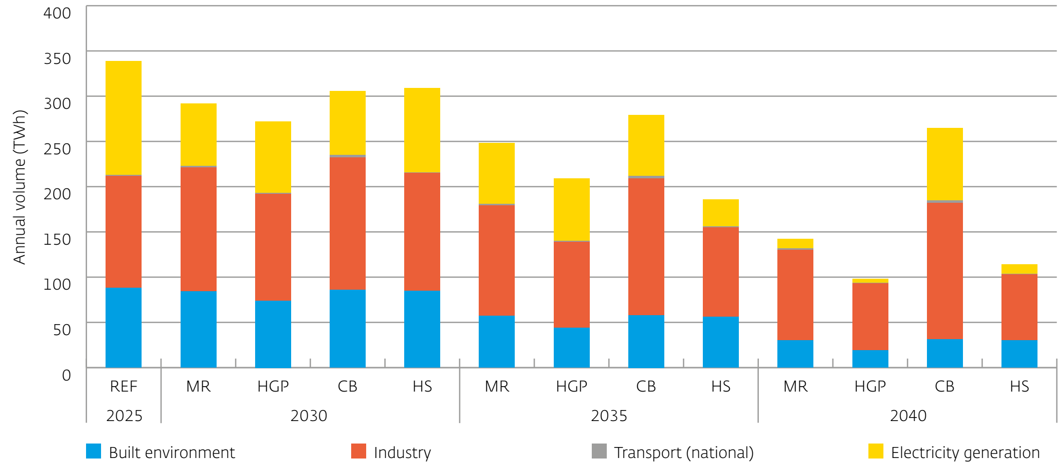
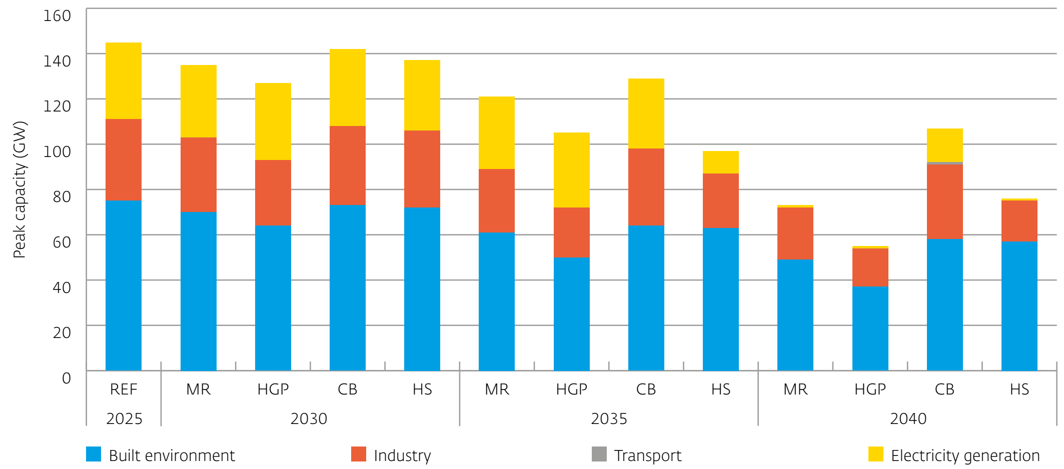


Figure 2.6: Peak capacity trends in domestic gas demand under the 2026 IP scenarios



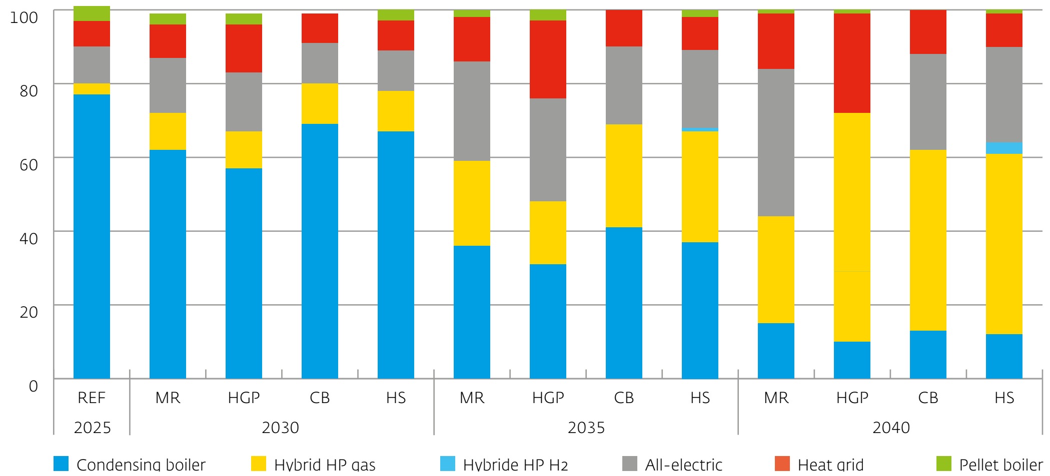
2.4.1 Built environment

The built environment encompasses all residential and commercial buildings in the Netherlands[21]. In these homes and buildings, natural gas is used for heating and/or cooking. Gas demand in these sectors is on a continuous downward trend, mainly due to the transition to alternative heating methods. Figure 2.7 illustrates the distribution of residential heating methods and how this changes in each scenario. The distribution and development is similar for residential and commercial buildings[22].

21 *'Homes' correspond to the homes in the ETM. Of the 'Buildings' segment in the ETM, a portion concerns commercial buildings and the rest are included with Industry. The ETM also includes gas demand for district heating used for the built environment.*

22 *The relevant share of the market for homes is calculated based on the number of installations. For commercial buildings, the distribution is based on floor space (m²). The energy ratios will deviate from this given that different types of installations have different efficiency levels.*

Figure 2.7: Home heating technologies



Depending on the type of heating, homes and commercial buildings will use less gas or none at all. Hybrid heat pumps heat with electricity for much of the year, but still use gas in peak demand situations and to supply hot water. In most cases, natural gas or biomethane is used for this; however, eventually hydrogen will be used as well. For district heating networks, part of the peak demand is also supplied with auxiliary gas boilers in the districts. The other types of heating (all-electric, pellet stoves, etc.) do not use gas at all.

Figures 2.8 and 2.9 show how annual volume and peak capacity for gas are expected to develop in the built environment. In both charts we see a downward trend. The volume will decline by between 2% and 16% between now and 2030 and will be between 65% and 79% lower in 2040 compared to 2025. The fastest decline is expected under the Home-Grown Power scenario due to the assumed rapid electrification and the relatively large role of district heating networks. Peak capacity will decrease by between 23% and 51% by 2040, meaning the peak capacity will decrease slower than the annual volume. This is because, for hybrid applications and district heating networks, gas is then still being used to handle peak demand situations in the winter.

Figure 2.8: Methane volume for the built environment

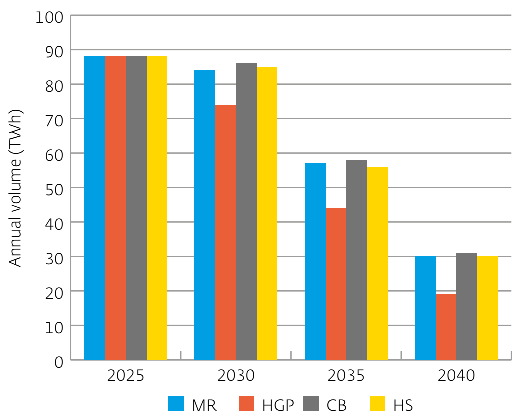
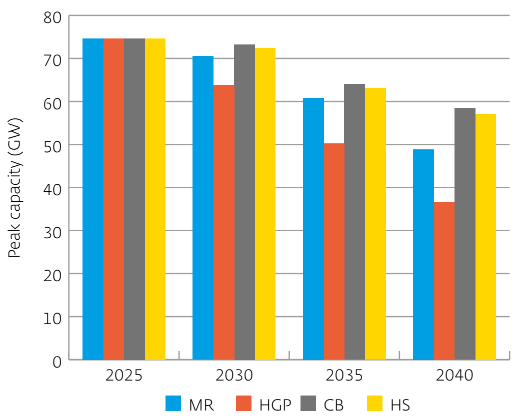


Figure 2.9: Methane capacity for the built environment



2.4.2 Electricity generation

In the Netherlands, gas is also used to generate electricity, at power stations and in cogeneration (combined heat and power) stations, for example. In this regard, gas competes with other forms of electricity generation, such as coal, solar power and wind. The figures below illustrate the installed electrical capacity in the various scenarios[23]. Some of this is gas-fired (methane and hydrogen) power; this is specified for each scenario in Figure 2.10. Figure 2.11 shows the total generated capacity. In all scenarios, we see an increase in the use of renewable capacity, mainly through the use of solar PVs and offshore wind. Conventional gas-fired electricity generation capacity also increases slightly; this is to ensure that the electricity system is always balanced. To make the electricity sector more sustainable, hydrogen will increasingly be used for this as well from 2030 onwards.

Figure 2.10: Installed gas-fired electricity generation capacity

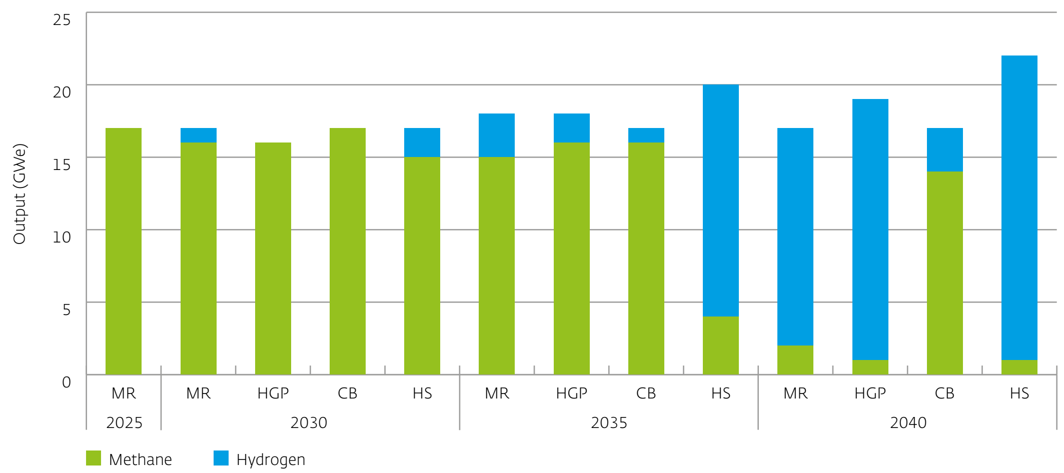
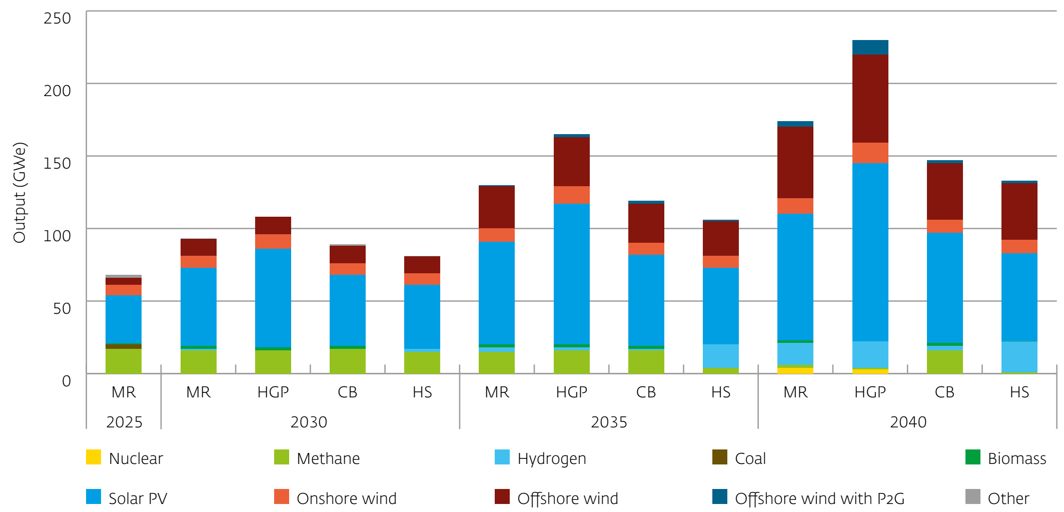


Figure 2.11: Installed electricity generation capacity



23 *This concerns electricity generation capacity. Due to the conversion loss at power stations and cogeneration stations, the peak load in the gas system is approximately twice as high.*

The use of gas-fired capacity depends entirely on the conditions on the electricity market. A large supply of solar and wind power will likely mean that little use will be made of the capacity of gas-fired power stations; they would, however, be in full operation during periods with little sun and little wind. Furthermore, use of power stations still depends on developments on the electricity market in countries outside the Netherlands. It is conceivable that Dutch gas-fired power stations will also generate electricity for export. To make a good estimate of gas consumption for the generation of electricity in the coming years, in this investment plan GTS uses TenneT's calculations[24].

Figures 2.12 and 2.13 show the levels of gas consumption for generating electricity, with one chart illustrating the annual volumes and the other peak capacity[25]. The annual volume shows a sharp decline in the use of gas-fired capacity in all scenarios. This is related to the increase in electricity generated from solar, wind and other sources. Peak capacity will also decrease in the coming years, mainly because certain power stations will be using hydrogen instead of natural gas. The Horizon Supply scenario has the most ambitious transition pathway, one where emissions from the electricity system will be reduced to virtually zero by 2035, in accordance with the choices in the NESP. In most scenarios, virtually no natural gas will be used for electricity production by 2040 given that, from then on, no new ETS emission allowances will be allocated. An exception is the Collaborative Balance scenario, which depicts a pathway where natural gas will continue to play a significant role in the electricity system. These emissions are offset elsewhere in the system, such as through bioenergy combined with carbon capture and storage (BECCS) at biomass power stations, for example.

Figure 2.12: Gas consumption volume for generating electricity

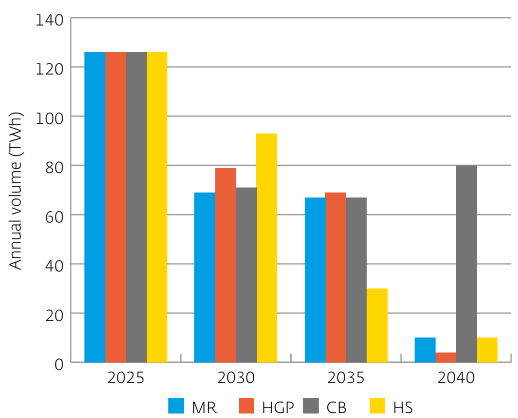
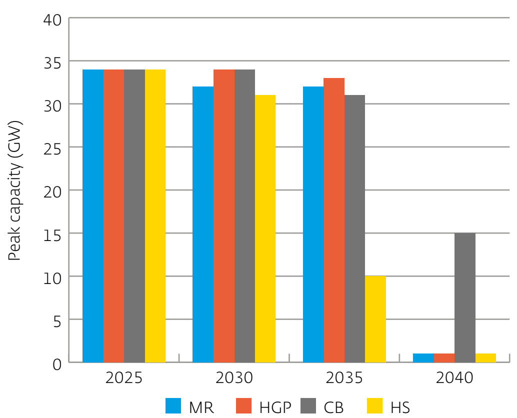


Figure 2.13: Gas consumption capacity for generating electricity



24 Rather than using the historical climate year 2012 for its market simulations of the electricity sector, TenneT used a future weather year from ENTSO-e's European Resource Adequacy Assessment, i.e. climate year ECE-2029. In terms of weather, this climate year is quite comparable to the historical year 2012. For more information, see https://www.entsoe.eu/eraa/.

25 Where relevant, the blending of hydrogen into power station fuel has been taken into account, reducing the demand for natural gas. Gas demand for must-run cogeneration units at industrial companies is included in the industrial sector.

2.4.3 Industry

Within industry, the largest energy-intensive sectors are the chemical sector, refineries, the fertiliser industry and the metal industry[26]; this is due to the use of high-temperature heat and/or natural gas as a feedstock in these sectors. The development of gas consumption is determined by various factors, such as the degree of efficiency improvements, technological changes, energy prices and the growth/shrinkage of the sector.

Figures 2.14 and 2.15 show the gas demand from industry in the various scenarios. In the charts, we still see an effect of high gas prices in 2025, primarily causing lower volume than in recent years. Most of the scenarios show growth in gas demand between now and 2030. This is due in part to industrial production returning to the level seen in recent years. In addition, new gas demand is anticipated in certain sectors, including in the production of blue hydrogen and for direct iron reduction (DRI) in the steel sector[27]. Over the longer term, all scenarios anticipate a decline in gas demand from industry, in part as a result of energy saving measures, switching to other energy carriers such as hydrogen and electricity and, possibly, industrial companies relocating outside the Netherlands.

The Home-Grown Power scenario envisions the fastest decline in gas demand. In the Horizon Supply scenario, gas demand falls to a similar level in 2040, primarily thanks to the transition to hydrogen, but also due to certain industrial companies leaving the Netherlands. The Collaborative Balance scenario shows a growth in gas demand between now and 2040. This is primarily related to the increasing production of blue hydrogen for which natural gas is used as a feedstock. In addition, much of the emission reduction in industry will be achieved through CCS, which means that gas demand will not decrease, or only to a limited extent.

Figure 2.14: Gas demand volume from industry

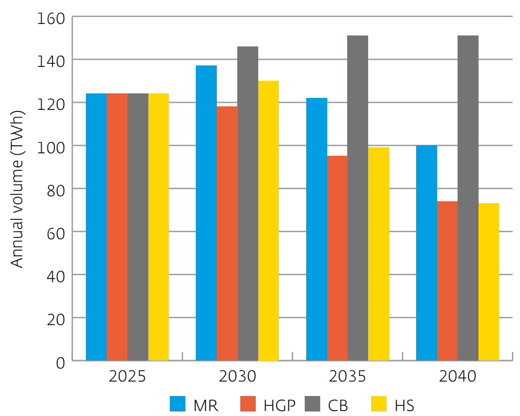
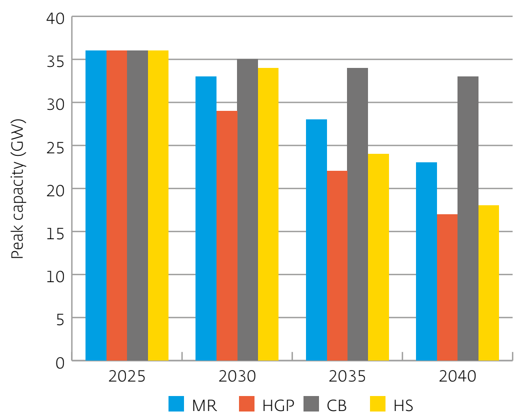


Figure 2.15: Gas demand capacity for industry



26 Industrial demand in this 2026 IP includes part of the construction sector, commercial greenhouses, and (yet-to-be built) blue hydrogen plants. Gas demand for fuel/biofuel production is also included in the industrial sector.

27 This effect is not visible in peak capacity given that this results from pre-bookings of transmission capacity with GTS. These transmission bookings have not really decreased in recent years, while the actual annual volume of gas transmitted has been lower.

2.4.4 Mobility

At this time, the transport & mobility sector mainly uses petroleum-derived liquid fuels. In terms of gas demand, transport & mobility is currently a relatively small sector, consuming an annual volume of approximately 1 TWh. All the 2026 IP scenarios assume growth in electricity and hydrogen in particular. Gas usage is also increasing, in shipping for example. By 2040, gas demand for transport will grow to a maximum of 3 TWh. This means the transport & mobility sector will remain relatively small compared to other end-use sectors.

2.4.5 Comparison of the scenarios with those in the 2024 IP

Figures 2.16 and 2.17 compare the 2026 IP scenarios with those from the 2024 IP. In 2030 and thereafter, all 2026 IP scenarios show higher gas demand than envisioned in the scenarios from the previous edition. This is primarily due to delays in electrification and sustainable electricity generation. For example, certain 2026 IP scenarios envision higher gas consumption for power stations. This is related to delays in offshore wind, for example, which means gas-fired power stations will rack up more hours of operation.

Figure 2.16: Domestic gas demand in 2030

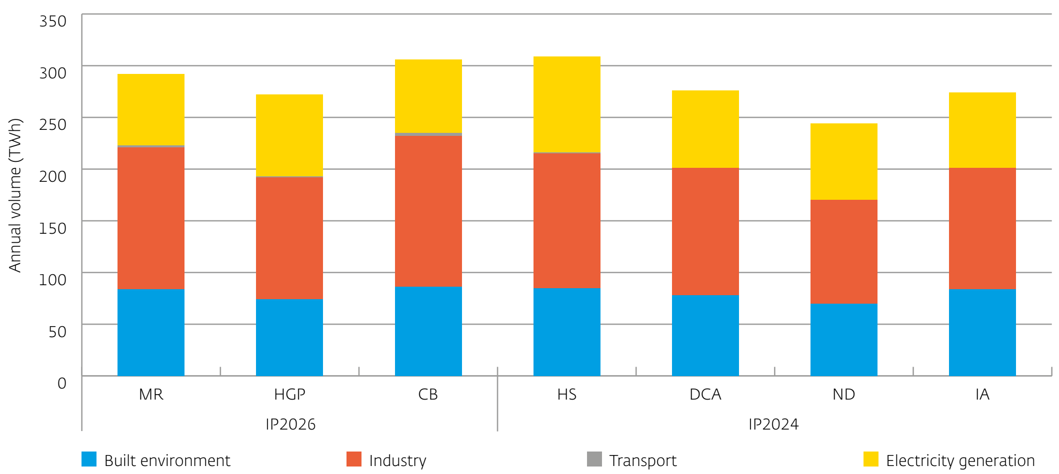
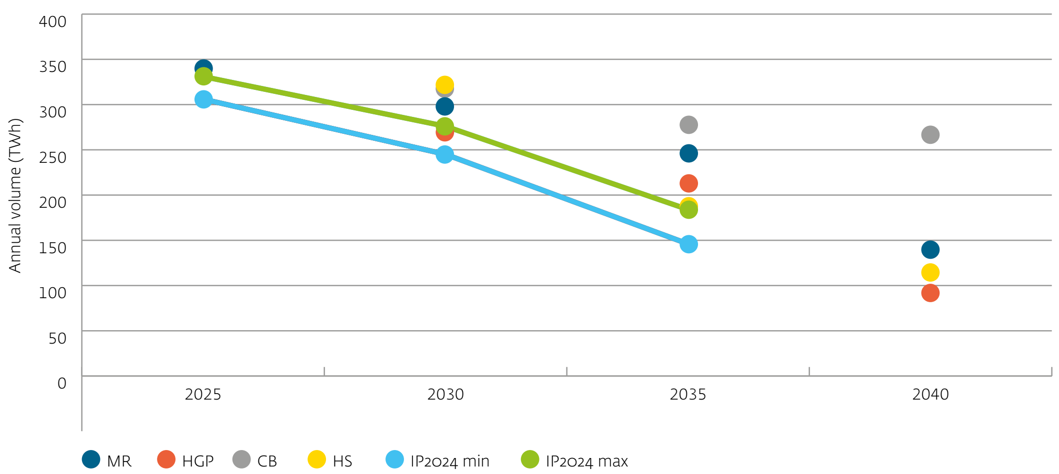


Figure 2.17: Domestic gas demand



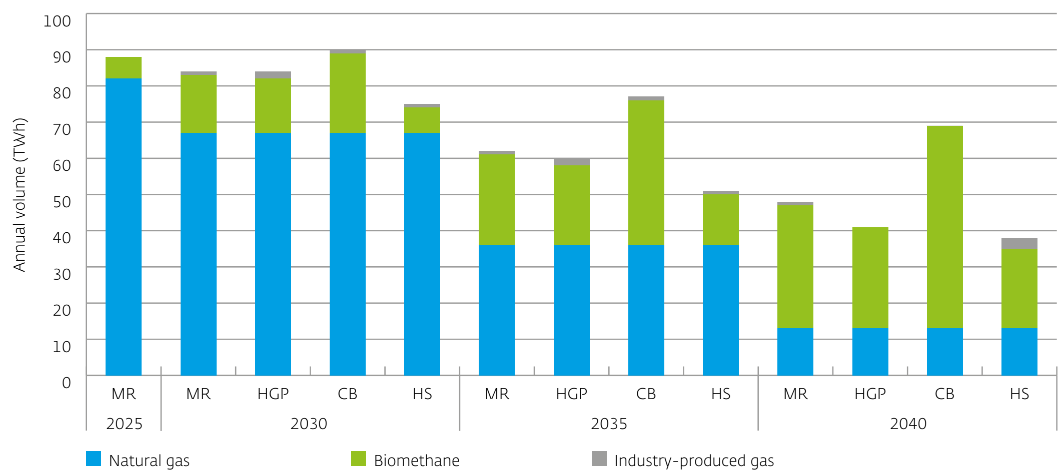
Additionally, industrial gas consumption is also higher in the 2026 IP scenarios compared to the 2024 IP scenarios. The business plans show that companies still expect to use more methane, in combination with CCS. One explanation for this is the lack of certainty concerning the price, connection, and availability of electricity and hydrogen. As an offshoot of this, the new scenarios also envision a greater role for blue hydrogen compared to hydrogen production from electrolysis, given that natural gas is needed to produce blue hydrogen.

The 2025 edition of the Netbeheer Nederland Scenarios report[28] provides a more extensive comparison of the 2026 IP scenarios with those in the 2024 IP, II3050v2, and the Climate and Energy Outlook (Klimaat- en Energieverkenning, KEV) published by PBL Netherlands Environmental Assessment Agency[29].

2.5 Gas supply in the Netherlands

In the previous section, we saw that gas demand in the Netherlands decreases in all scenarios. Over the past few years, natural gas production in the Netherlands has also declined substantially, mainly due to the phasing out and ultimate closure of production from the Groningen field. Starting from 2025 gas is only being extracted from small Dutch fields. In addition, a limited amount of biomethane is being produced and fed into the natural gas transmission networks. Figure 2.18 depicts the development of methane production sources over the coming years. Taken as a whole, the various production sources show a downward trend, with a reduction of between 22% and 57% over the next 15 years.

Figure 2.18: Domestic methane production



With the depletion of the reserves from the small fields, natural gas production in the Netherlands will steadily decline over the coming years. Where in 2030 production will still be 67 TWh, by 2040 this will have decreased to around 13 TWh[30]. The assumptions for natural gas production are the same for all scenarios. Over the coming years, the decline in natural gas production will be offset by an increase in the supply of biomethane. Biomethane is methane harvested from organic material through anaerobic digestion or gasification. In 2024, biomethane

28 *https://www.netbeheernederland.nl/artikelen/nieuws/netbeheer-nederland-scenarios-editie-2025*
29 *https://www.pbl.nl/publicaties/klimaat-en-energieverkenning-2024*
30 *Figures for small fields come from the medium scenario in the 2023 annual review on natural resources and geothermal energy in the Netherlands. https://www.rijksoverheid.nl/documenten/rapporten/2024/08/31/minvkgg-delfstoffen-en-aardwarmte-in-nederland-jaarverslag-2023*

production amounted to almost 3 TWh, double the amount produced in 2020. The various scenarios envision a range in 2030 from 7 TWh in the Horizon Supply scenario to 22 TWh in the Collaborative Balance scenario. This variance can be explained by differences in policy ambitions and the availability of technologies: in the Horizon Supply scenario, production remains low because gasification technology is only available to a very limited extent in 2030, while the Collaborative Balance explores the maximum potential of biomethane production, both from anaerobic digestion and through gasification. Production will continue to increase towards 2040, with scenarios showing a range of between 22 and 56 TWh.

Certain scenarios also anticipate a limited amount of methane produced in industry, primarily waste gas from industrial processes. Currently, these gases are still used on-site as fuel for furnaces; however, in the case of electrification of steam crackers, for example, these industrial waste gases can be fed into the gas grid.

2.6 Developments outside the Netherlands

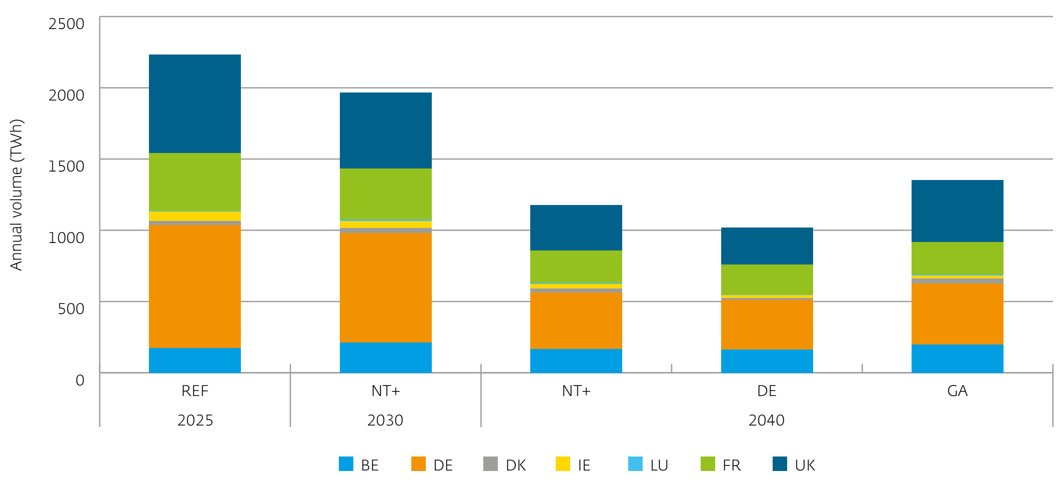
Since the gas demand and gas supply trend abroad has an impact on gas flows through the Netherlands, the developments in surrounding countries are also considered in this draft IP. For this purpose, this draft IP uses data from the 2024 TYNDP joint scenario report of ENTSOG and ENTSO-E[31]. The National Grid's Future Energy Scenarios (FES)[32] were used for the UK. This section looks at the assumptions for gas demand and gas supply in the Netherlands and abroad, with specific attention paid to the supply of and demand for methane[33].

2.6.1 Gas demand

The 2024 TYNDP has one scenario for 2030 and three for 2040[34]. These scenarios are illustrated in the chart below. National Trends (NT) is the central scenario based on the energy and climate plans and strategies of national governments. This scenario is quantified for 2030 and 2040. In addition, ENTSO-E and ENTSOG have developed two flanking scenarios for 2040 based on storylines: Distributed Energy (DE) and Global Ambition (GA). The Distributed Energy scenario focuses on electrification and on the EU Member States producing as much of the required energy as possible. The Global Ambition scenario focuses more on renewable gases, including from imports. All scenarios envision a sharp decline in gas demand between now and 2040, with a reduction of between 40% and 55% over a period of 15 years.

31 https://2024.entsos-tyndp-scenarios.eu/
32 https://www.neso.energy/publications/future-energy-scenarios-fes
33 For the analysis in this draft IP, the scenarios from the FES are shown with the most similar scenario from ENTSO-E and ENTSOG: Electric Engagement for National Trends, Holistic Transition for Distributed Energy, and Hydrogen Evolution for Global Ambition. The Counterfactual scenario from the FES is not used, given that in this scenario the climate targets are not achieved.
34 TYNDP 2024 does not include data for 2025. For this reference year, a best-possible estimate has been made, based in part on historical data.

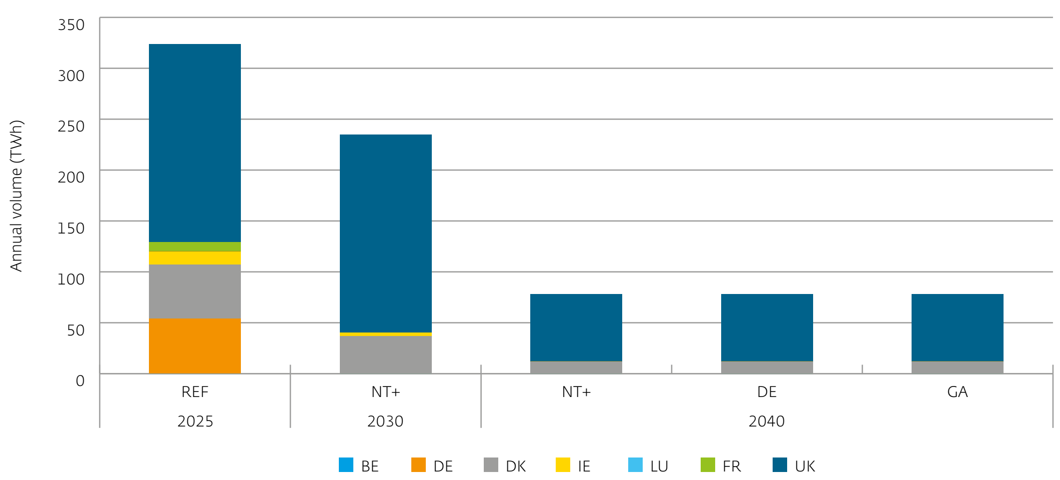
Figure 2.19: Gas demand in countries surrounding the Netherlands



2.6.2 Gas supply

As in the Netherlands, natural gas production in the rest of north-western Europe is declining. Along with the Netherlands, the UK and, to a lesser extent, Germany and Denmark are the main gas producers at the moment. Figure 2.20 shows the development in gas production in these countries. Gas production declines drastically in all scenarios. Between now and 2030, natural gas production in the countries closest to the Netherlands will decrease by around 25% compared to 2025 and will have fallen by 75% by 2040.

Figure 2.20: Gas production in countries surrounding the Netherlands



In contrast to the dwindling natural gas production, renewable gas production will grow in the neighbouring countries too. Figure 2.21 illustrates the production of renewable methane in the countries closest to the Netherlands. Renewable methane mainly consists of biomethane produced through anaerobic digestion or gasification. In addition, a limited amount of synthetic methane is produced through electrolysis (power to methane), including in France and Germany. In 2030, the production of renewable gas in the Netherlands' neighbouring countries will reach nearly 150 TWh; by 2040 this will have grown to between 310 and 360 TWh.

Figure 2.21: Production of renewable gas in countries surrounding the Netherlands

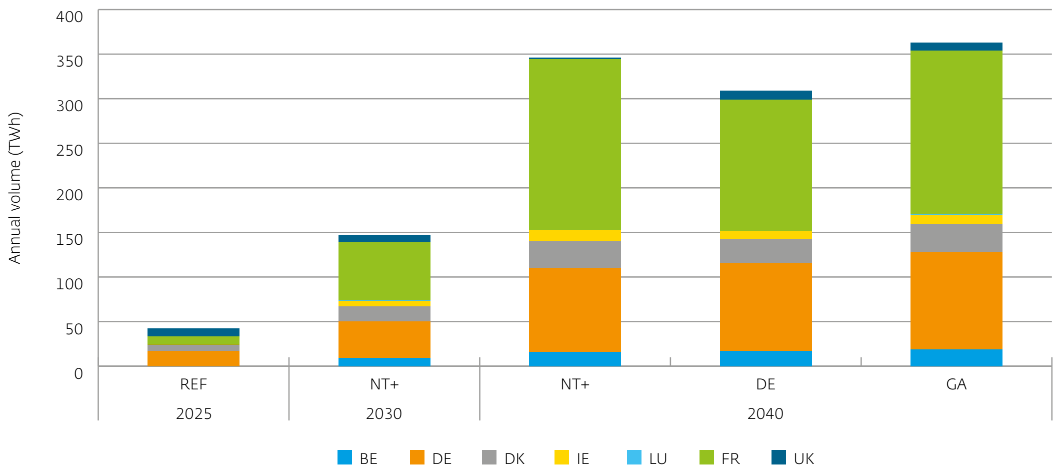
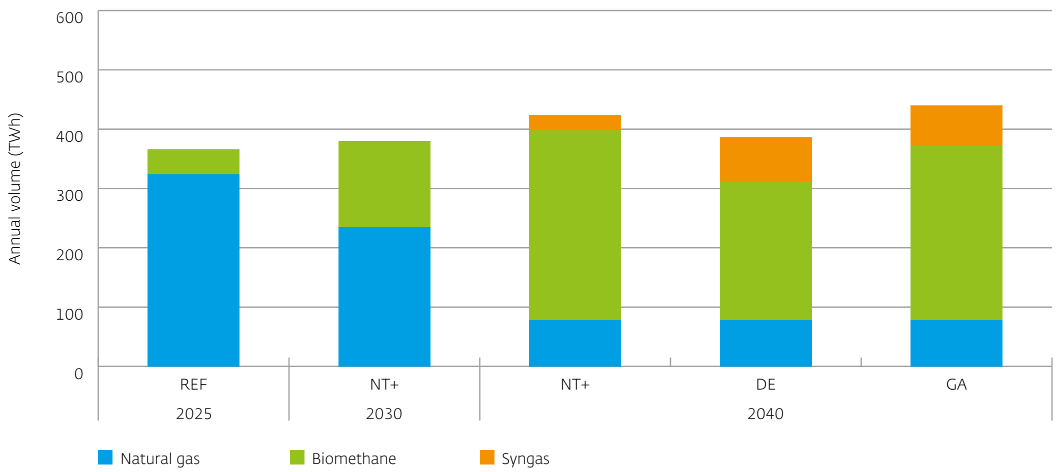


Figure 2.22 shows the sum of natural gas, biomethane and syngas production in countries surrounding the Netherlands. It is notable that methane production is expected to stabilise somewhat after 2030 and will possibly even increase. The decline in natural gas production is more or less compensated by the growth in the production of renewable gas. In 2025, renewable gas accounts for around 10% of all the gas produced. By 2030, this figure will be nearly 40%, and will have risen to around 80% by 2040.

Figure 2.22: Methane production in countries surrounding the Netherlands



2.7 Utilisation of the GTS network

The previous sub-sections provide an overview of domestic and foreign developments in gas supply and demand. Naturally, domestic developments directly affect the gas flows through the GTS network, but GTS also transports gas abroad. The Netherlands will, for example, remain an exporter of low-calorific gas between now and 2030. In addition, the Netherlands also handles 'transit flows', such as LNG imported to the Netherlands specifically for transport to the German gas market.

To gain insight into the cross-border flows of natural gas, ENTSOG simulations were used for the 2024 TYNDP scenario report[35]. Furthermore, information arising from discussions with neighbouring TSOs was incorporated into the analysis, including information on exports to Germany, for example. Figures 2.23 and 2.24 show total gas transmission through the GTS network. All scenarios show a significant decrease in transmission volume. A good part of this decrease in demand will come through the phasing out of obligations regarding the export of low-calorific gas (L-gas), with no L-gas export requirement from 2030 onward. Additionally, as mentioned previously, domestic demand in the Netherlands is also declining. Lastly, we see a decrease in the transit of H-gas to the Netherlands' neighbouring countries, in part due to a diminishing demand for natural gas in north-western Europe. All of this will result in a decline of between 25% and 48% between now and 2030, compared to the 2025 levels. Over the ten years after that, the decline will continue by another 24% to 38%, falling to between 50% and 82% by 2040.

Figure 2.23: Transmission/transport volume for domestic and transit

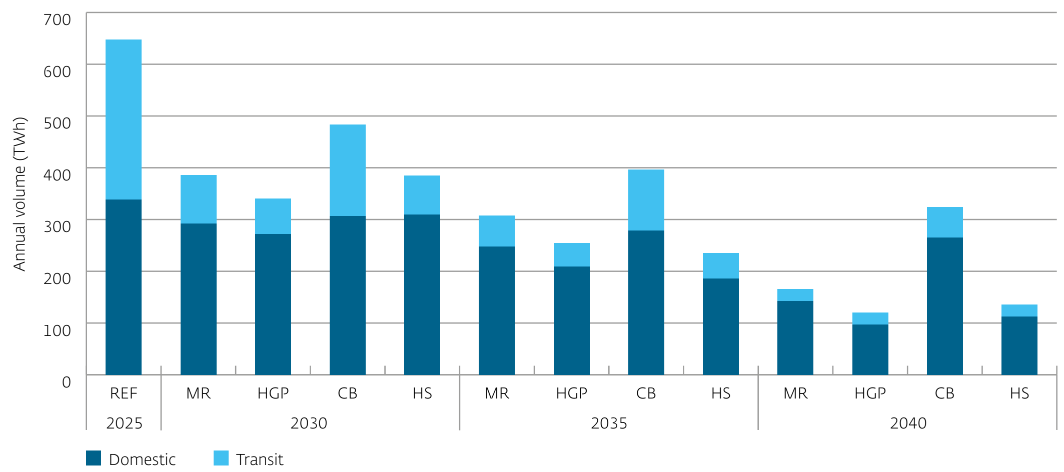
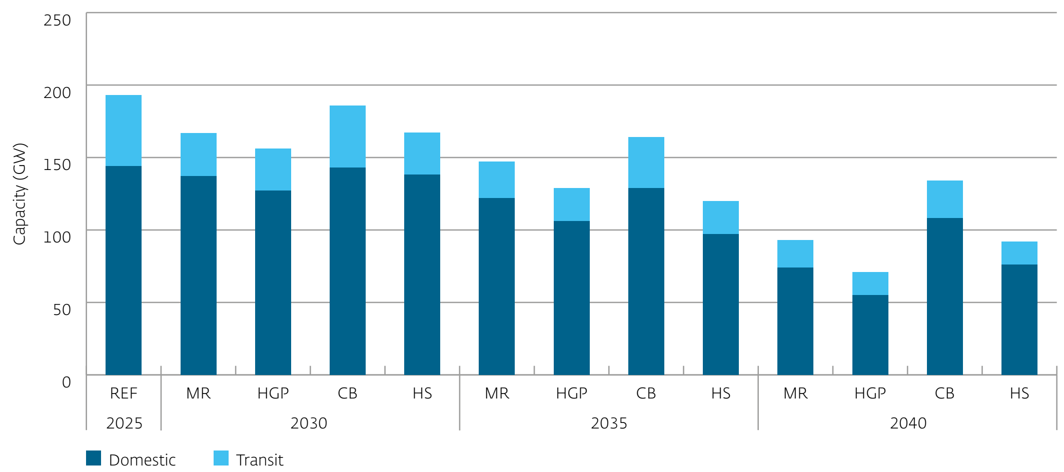


Figure 2.24: Transmission/transport capacity for domestic and transit



35 *The analysis is based on the ENTSOG simulations for the National Trends scenario, which incorporate various calculation variants regarding the availability of gas infrastructure. For more information, see: https://www.entsog.eu/tyndp#entsog-ten-year-network-development-plan-2024*

Transport capacity will also decrease in the coming years and will be between 4% and 19% lower in 2030 compared to 2025. In 2040, the decline will be between 31% and 64%. This decline in transmission capacity is slower than the decline in the annual transmission volume. This is because the Dutch gas transmission network is an important source of flexibility in peak situations, for example through hybrid heating and gas-fired power stations. This applies not only to the Netherlands but to surrounding countries as well. Figures 2.25 and 2.26 depict an example of this[36]. They show that exports from the Netherlands to neighbouring countries are greater in winter than in summer, indicating that Dutch storage facilities help meet flexibility needs abroad as well. Imports are higher in summer than in winter, allowing surpluses to be stored in storage facilities for use in the winter in the Netherlands and its neighbouring countries.

Figure 2.25: Annual export profile for 2030 (illustrative)

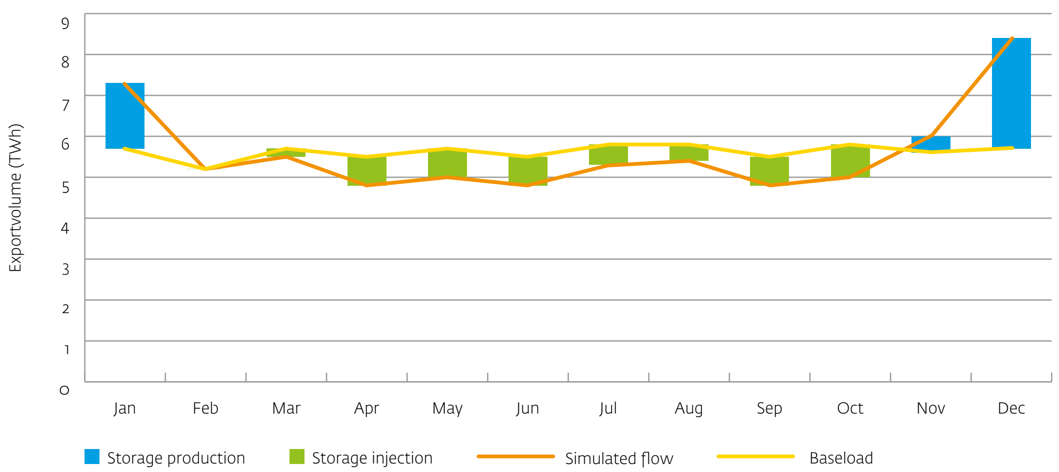
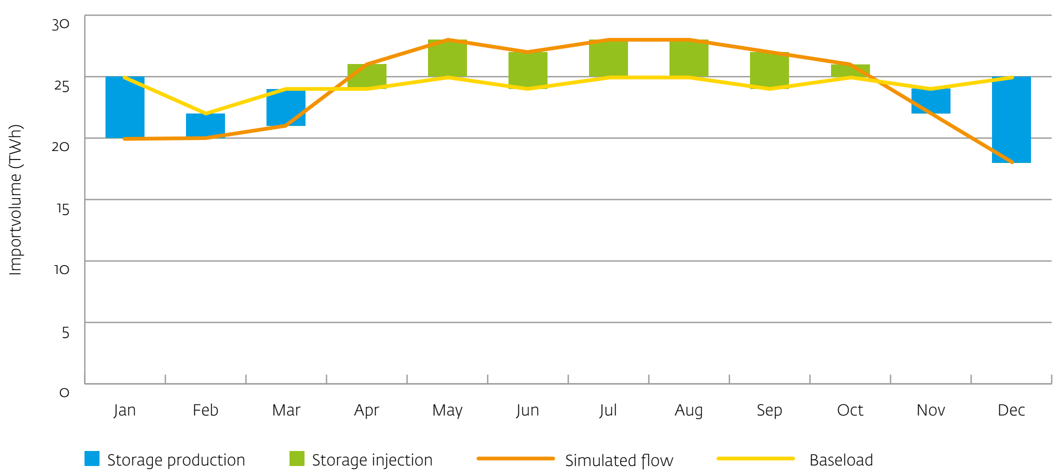


Figure 2.26: Annual import profile for 2030 (illustrative)



36 *Monthly and annual average capacity based on ENTSOG model results for the 2030 National Trends scenario at the advanced infrastructure level, assuming a normal weather profile that year.*

The import of natural gas decreases in all scenarios, as can be seen in Figures 2.27 and 2.28[37]. In 2022, the import of natural gas was still around 550 TWh; around the same figure is forecast for 2025. The scenarios show a decline over the coming years, driven by lower domestic demand and falling exports and transit. For 2030, this has fallen to between 255 and 393 TWh, assuming a year with a normal weather profile[38]. Between then and 2040, the import demand is expected to decrease further, to between 78 and 255 TWh. These imports will largely be gas from Norway and LNG (possibly arriving via the UK or Belgium).

Figure 2.27: Supply sources transmission volume

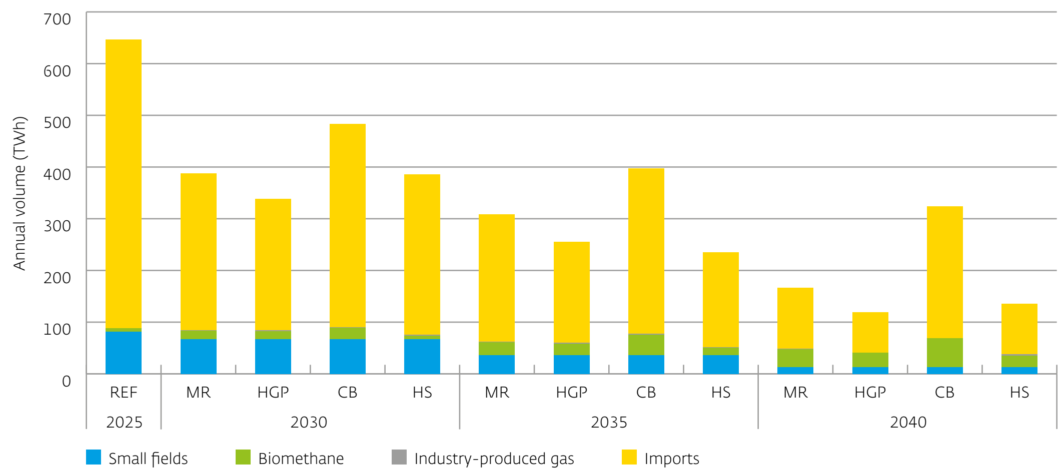
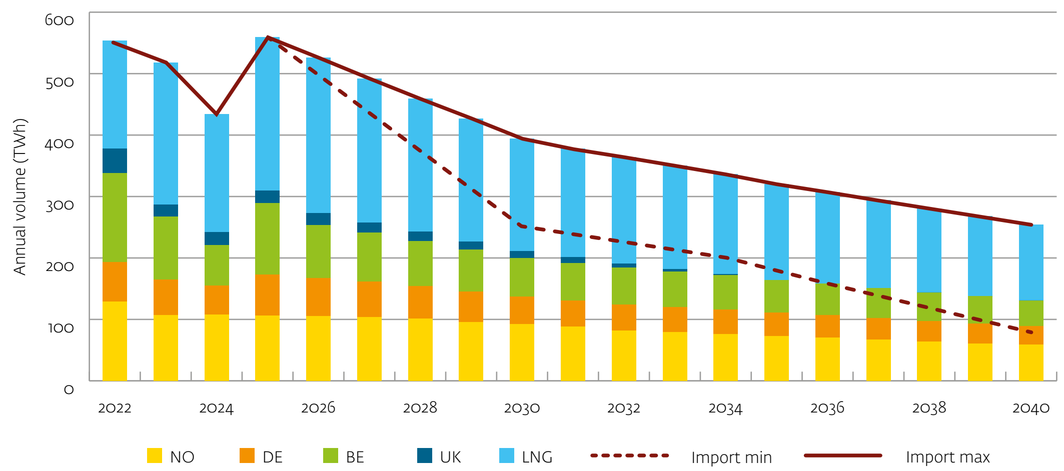


Figure 2.28: Indicative supply mix of various import sources[39]



37 *The distribution across the various import sources (LNG, Norway, etc.) is based on observations from recent years and is therefore purely indicative.*
38 *In a cold year, gas demand is roughly 15% higher than in a normal year. After the closure of the Groningen field, the required extra volume will have to be provided entirely through additional imports.*
39 *Imports from Belgium and Germany are expected to be primarily destined for storage in the Netherlands or for transit. For these countries the balance is net exports.*

3 Developments in the Dutch gas market

In this section, GTS explains developments in the gas market in the Netherlands and in other countries.

3.1 Relevant developments in the gas market

The gas market has changed dramatically in recent years, not only because of international geopolitical changes but also due to developments at the national level. Energy security is no longer a given and is now considered even more important than before, while, at the same time, greater attention is being paid to energy affordability, which is currently under pressure. All of this has a major impact on the demand for and supply of natural gas. It is widely expected that natural gas will continue to play a larger role in the Netherlands for longer than previously anticipated.

3.1.1 Demand for natural gas

After the sharp drop in gas demand observed around 2022 due to extremely high gas prices, gas demand has stabilised over the last two years. Looking ahead, it should be noted that, contrary to the forecasts presented in previous Climate and Energy Outlook (KEV) publications, up to the end of 2030 the forecast demand for natural gas will decline less rapidly than previously estimated. This applies not only to the Netherlands but also to other countries such as Germany, for example. For the period up to the end of 2030, the forecasts and scenarios presented in the 2025 NBNL scenarios report do not vary greatly from each other.

A key distinction is that forecasts are based on the current situation and likely developments, such as those presented in the KEV, and each scenario works towards a chosen desired end result. Moreover, as stated in sub-section 2.4.5, all 2026 IP scenarios project higher gas demand for 2030 and for subsequent years than the 2024 IP scenarios do. That the forecast future gas demand is now higher than previously estimated mainly comes down to delays in electrification and a slowdown in the growth of sustainable electricity generation. The forecast for gas consumption by industry in the 2026 IP scenarios is higher than in the 2024 IP scenarios; one explanation for this is the lack of certainty concerning the price, connection, and availability of electricity and hydrogen. A slower decline in natural gas demand is in keeping with a situation where industrial players are postponing the decision to remain in the Netherlands until it becomes clear whether the necessary sustainability measures are financially viable. If sustainability efforts do prove infeasible, the industrial companies concerned may be forced to stop their operations in the Netherlands and relocate elsewhere. A slowdown in the expansion of sustainable electricity generation means higher gas consumption for power plants in certain 2026 IP scenarios. For GTS, the slower decline in gas demand suggests that divestments, or the transfer of assets to the hydrogen network, for example, may occur later than originally anticipated.

Impact of climate and sustainability measures

Climate change is seen as the cause of higher average temperatures and therefore a potentially lower volume demand. There is, however, still a risk that the Netherlands will experience a cold winter[40], and it is also still possible that low peak temperatures with high capacity demand will occur.

With the increasing use of sustainable energy sources, such as solar and wind, electricity generation by gas-fired power stations is becoming less predictable and, accordingly, there are greater fluctuations and more uncertainty as regards the gas demand from these power stations. This in turn affects the use of gas-fired power stations as backup and leads to an increasing demand for controllable capacity[41]. This creates both demand profiles with rapid fluctuations and demand profiles with seasonal fluctuations. Periods of little wind and sun (Dunkelflaute) also need to be taken into account as they immediately create a spike in gas demand from gas-fired power stations.

The Pentalateral Energy Forum, representing the Benelux, Germany, France, Switzerland and Austria, has expressed the desire for the electricity system to be zero-carbon by 2035. In addition to phasing out coal-fired power stations, this means that the Netherlands' natural gas-fired power stations will eventually have to switch to a different energy carrier. One of the options being considered is hydrogen. Although the Forum's target is unlikely to be achieved, it does mean that demand for natural gas in this sector will very likely decrease over the next ten years.

Impact of a slow energy transition on industry

Both the European Commission and the Dutch government want to keep local manufacturing in Europe; they want to discourage industrial companies from relocating outside the EU as much as possible. Retaining industry in the Netherlands is not a given, however. The industrial companies that do stay will have to become more sustainable, which means switching from natural gas to electrification or hydrogen, or continuing to use natural gas but with carbon capture. To limit the risk of industry abandoning the Netherlands, predictable policy is needed, in combination with certainty concerning sustainability. In the absence of these fundamentals, increasingly more industrial companies will be moving their operations abroad. With a backlog of investment decisions, the energy transition is proceeding much slower than previously assumed, resulting in a slower decline in gas demand than previously anticipated.

Gas demand from industry could even increase in the coming years. In the Netherlands, for example, TATA Steel plans to switch its production process to a plant that uses DRI[42] technology, a process that uses natural gas instead of coke. With the switch in Germany from lignite to gas-fired power stations, an increase in gas demand from German industry can also be expected.

The result is a general picture showing an increase in both uncertainty and variability in gas demand.

40 As was seen with the 'Beast from the East' that hit the Netherlands as well at the end of winter in 2018 (see https://en.wikipedia.org/wiki/2018_British_Isles_cold_wave).
41 https://www.tennet.eu/nl/over-tennet/publicaties/rapport-monitoring-leveringszekerheid
42 Direct reduced iron

3.1.2 Supply of volume

On the supply side, two significant developments are the shutdown of production from the Groningen field, and the loss of pipeline gas from Russia, which had already preceded this shutdown. European gas production has also been steadily declining for years, including domestic production from the small fields. As a result, for a number of years now north-western Europe, including the Netherlands, has increasingly become a net importer of natural gas and, accordingly, dependent on foreign gas.

The loss of supply has been partly offset by a reduction in domestic and international demand, additional gas supply from Norway, and, especially, an increase in the supply of LNG.

Geopolitical uncertainty

The conflicts in Ukraine and the Middle East are leading to increased tensions and uncertainties on the geopolitical stage. Due to the decline in local European gas production and thus relatively greater dependence on LNG imports, Europe is increasingly susceptible to the risks posed by adverse geopolitical developments.

LNG supplies, primarily from the Middle East and the United States, could prove to be vulnerable and uncertain. Because the LNG market is global, availability and price depend on developments in other parts of the world, such as the Asian gas market. And in this globally competitive market Europe could lose out, a risk that is a lot lower with pipeline gas. Additionally, the unavailability of shipping routes for LNG via the Red Sea, the Strait of Hormuz or the Panama Canal, or higher trade tariffs would also have a direct impact on the Dutch gas market. The increased threat of disruption to the energy infrastructure, potentially resulting in prolonged supply interruptions, is also a risk. These potential threats were also addressed in a recent advisory report published by *De Mijnraad*[43].

So now that the Netherlands is heavily dependent on LNG imports, having a sufficient supply of natural gas cannot automatically be guaranteed in advance[44]. These developments bring with them the risk that the availability of sufficient natural gas will decrease, which could put pressure on security of supply.

Liquefied natural gas (LNG)

In light of the above, the expected capacity increase at Gate is important. With the availability of the fourth tank, Gate's capacity will increase by 5.5 GW, to a total of 26.5 GW. Gate terminal will then be able to dispatch approx. 212 TWh annually, which represents more than two thirds of domestic gas demand. In addition to this expansion, the EET LNG terminal, set to close on 1 September 2027, may be extended, allowing LNG to continue to play a key role in security of supply in the long term. The importance of EET lies in its significant role in achieving a positive volume balance.

43 https://demijnraad.nl/files/view/dac7fdc3-9395-4b6c-a3a3-877ad94fcca8/mijnraadadvies_gasleveringszekerheid_digitaal.pdf
44 See also 3.1.3 Security of supply for more information on an 'average gas year' and a 'cold gas year'.

Germany is also seeing an increase in LNG import capacity thanks to the commissioning of a fourth FSRU in 2025[45]. This expansion also contributes to a strong internal European gas market. However, due to existing and necessary gas flows from west to east, this does not mean that GTS can reduce the capacity of its gas transmission network.

In addition, European legislation such as the Corporate Sustainability Reporting Directive (CSRD) imposes additional reporting obligations regarding the impact companies have on people and the environment. This European legislation may potentially affect LNG flows to Europe by introducing requirements for (exporting) countries that they may be unable or unwilling to comply with.

Less flexibility in the supply

With the closure of the Groningen field, a key source of flexible supply has also fallen by the wayside. In the past, this production field provided both volume and peak capacity on the coldest gas day, supplying the market with the volume of natural gas required during a cold winter.

Although Norway is an important and stable supplier, the depletion of Norwegian production fields appears to be resulting in a declining and increasingly flat supply and, as a result, Norwegian gas only makes a limited contribution to the supply of seasonal flexibility.

Lastly, LNG is providing an increasingly large portion of the total supply, though to what extent LNG can also provide the additional volume required during a cold gas year is uncertain at this time, also in view of competitors for the supply of LNG.

All of this means that seasonal storage facilities remain essential, both now and in the future and so maintaining the current gas storage facilities is necessary.

3.1.3 Security of supply

Due to this increased uncertainty in the international arena and developments on both the supply and demand sides of natural gas, increased attention is being paid to the security of natural gas supply in the Netherlands. In the Netherlands, security of supply of natural gas is defined as the situation where 'end users of gas are supplied with gas of the right quality (low or high calorific) at the right time and in the required amount, even when demand is high'[46].

Under the Dutch Gas Act, and under the new Dutch Energy Act, Gasunie Transport Services (GTS) has a statutory duty to draw up a review of the security of supply of natural gas in the Netherlands. The 2025 edition[47] of this review focuses on the 2026/2027 gas year and the four gas years that follow. This most recent review shows a positive volume balance for the five-year period, meaning sufficient gas supply can be made available on the Dutch market, even in a cold gas year. Moreover, there is sufficient capacity available to handle the feed-in of this gas and to supply end users in the Netherlands and neighbouring countries, even on the coldest gas day

45 *Second Wilhelmshaven LNG terminal to begin commercial operations Aug 29: DET – S&P Global Commodity Insights, 15 August 2025.*

46 *See Advies Raad van State inzake het voorstel van wet, houdende wijziging van de Gaswet en Mijnbouwwet in verband met de beëindiging van de gaswinning uit het Groningenveld (Advisory Opinion of the Council of State on the proposed law amending the Gas Act and the Mining Act in connection with the termination of gas extraction from the Groningen field): https://zoek.officielebekendmakingen.nl/stcrt-2024-5428.html*

47 *See https://www.gasunietransportservices.nl/uploads/fckconnector/7d5089f8-57f5-5fa3-8c71-1b168abcfbec/3517314507/Overzicht%20leveringszekerheid%20voor%20gasjaar%202026_2027_printversie.pdf*

(effective daily temperature of -14°C), even if the largest source (Norg UGS) were to fail on that day. In the most recent security of supply review, GTS is using information from the KEV2024. KEV2024 is a projection by PBL that assumes current climate and energy policy. Achieving the climate targets is therefore not an a priori assumption in the KEV2024. For future scenario development related to the investment plan, a scenario could be considered in which the climate targets are not met.

An international perspective was used to determine a minimum filling level for gas storage facilities. GTS advises the Minister to set a filling level of 115 TWh, to be met by 1 November 2026 at the latest. This will guarantee security of supply, even in a cold gas year. Assuming sufficient flexibility in the supply of LNG, a lower filling level of 90 TWh would suffice; however, given the ongoing uncertainties in the gas market, GTS strongly recommends adhering to the higher range. Given these uncertainties, GTS also recommends maintaining existing gas storage facilities and other supply facilities until at least 2030. It is also important for there to be a strategic storage facility, an emergency supply, until 2030 and beyond. GTS will bring forth a separate advisory report regarding the usefulness and necessity of a strategic storage facility to increase the resilience of the gas system. GTS will also make a separate advisory report on the proposed closure of Norg.

Lastly, it is noted that security of supply for natural gas is not a standalone issue, given that the various energy carriers in the future energy system (electricity, hydrogen and methane/biomethane) will be closely intertwined (system integration). This means that, in the coming years, the various government bodies and grid operators will need to discuss how security of supply will be arranged in the future energy system.

For a more detailed explanation, refer to the 2025 Security of supply overview for natural gas with preliminary findings.

3.1.4 TTF

The launch of TTF in 2003 as an administrative network point has led to major growth in gas trading on one single marketplace, which has enormously increased the liquidity of gas trading. As a result, the TTF price has become the benchmark for natural gas trading in Europe and beyond.

Thanks to the solid infrastructure, the TTF price is used as a reference price, not only in the Netherlands, but also in the surrounding countries. About 80% of the volume of gas (in MWh) traded in Europe now bears a TTF label. TTF is also increasingly becoming a global gas marker, with an ever increasing number of LNG contracts with indexation to TTF.

Liquidity ensures that the market value is reflected in the prices, though this still does not guarantee (permanently) low gas prices. This can also cause significant price fluctuations on liquid gas markets. Factors such as supply and demand, supply sources, and the presence or absence of transmission/transport bottlenecks are much more decisive for the price level.

An illustration of this is the month-ahead gas price trend on TTF in the period January 2021 to April 2025, as shown in Figure 3.1.

Figure 3.1: Month-Ahead price trend 2021–2025[48]

A changed balance in supply and demand has resulted in (sometimes drastic) gas price increases. The price level in 2025 has roughly doubled compared to 2021. Although prices appear to have normalised again in 2024 and 2025, a portion of the original demand will never return.

Due to the increasing loss of pipeline gas supplied from Russia and the (significant) increase in LNG being imported by sea to compensate for the loss of this gas supply, starting in 2022 we have been seeing a change in gas flows in Europe, from east-to-west to west-to-east. The forced use of alternative transport routes, combined with more expensive sources (e.g. LNG) and increased uncertainty concerning the supply of gas, is driving gas prices. The storage capacity filling obligation imposed by the European Commission also contributes to increased gas demand (and to higher gas prices) in a tight gas market.

Domestic reserves in Europe are dwindling, further increasing the need for imports (of LNG, etc.). TTF is an important facilitator in directing new sources of gas to Europe. However, liquidity is no guarantee that the gas will actually be delivered. There is also a need for actual gas in the rest of the world. Especially Asia has a growing natural gas market, and one that is already much larger than Europe's. Developments in China, in particular, could strongly influence the LNG volumes available for Europe (and the associated gas prices).

Despite these changed circumstances, in July 2024 the Oxford Institute of Energy Studies [1] concluded that: '...it is clear that the Dutch TTF is far and away the leading European traded gas hub, used by many more market participants than any other hub, has a very high traded products score, with far greater total traded volumes than all the others put together'[49].

48 Source: Intercontinental Exchange (ICE)
49 European Traded Gas Hubs: the markets have rebalanced - Patrick Heather - July 2024

3.2 Legislation and regulations

3.2.1 Dutch Energy Act

The Dutch Energy Act will come into force on 1 January 2026. The Energy Act amends the Gas Act and the Electricity Act and merges these into one piece of legislation. The Energy Act serves to implement the new EU Regulation on the internal market for electricity while also giving substance to national policy objectives, such as those stated in the Dutch Climate Agreement.

Although the changes are less drastic for gas than for electricity, the Energy Act will nevertheless have noticeable consequences for stakeholders in the gas market. For example, the connection duty of gas TSOs and DSOs is formulated less broadly in the Energy Act than in the Gas Act. The Energy Act does offer GTS the option of taking in biomethane, for example, provided that this can be blended to the correct delivery specifications for natural gas. Furthermore, under the new Energy Act a number of the current codes established by ACM will be fully or partially included in the primary and secondary legislation. The Energy Act will also contain the legal foundations for a new system of data governance for the energy sector. The content of the secondary legislation under the Energy Act, which will provide further details concerning various matters, is not entirely clear at this time. The Dutch Parliament is currently debating the Energy Decree (Order in Council). A significant part of the sections of the Ministerial Regulations (MR) relevant to GTS is still being drafted by the Ministry. It is expected that at least some of this secondary legislation will not come into force until after 1 January 2026.

The provisions of the Energy Act, the Energy Decree, and the MR also contain some amendments to the provisions regarding the network operators' investment plans. This investment plan has been drawn up in accordance with the relevant statutory provisions of or pursuant to the Gas Act.

3.2.2 Proposed legislation on measures to contain an energy supply crisis

Draft legislation on measures to contain an energy supply crisis (Wetsvoorstel bestrijding energieleveringscrisis) was presented for consultation from 26 February to 26 March 2025. This concerns new legislation which amends several provisions in the Energy Act and the Mining Act.

At EU level, the regulation concerning measures to safeguard the security of gas supply sets out agreements on how Member States guarantee the resilience of their gas systems and how they will respond to an existing or impending gas crisis. With this draft legislation, the Netherlands aims to bring these agreements into effect and improve their implementation. Firstly, this would be done by strengthening the operation of the gas system under normal circumstances in order to keep a disruption in the gas supply from leading to a gas crisis. This would include, for example, measures regarding the filling of gas storage facilities, including the possibility of creating emergency reserves, and making clear the responsibility of suppliers to ensure supply to their end customers, even under more extreme circumstances (such as a period of extreme cold). This would be achieved by amending parts of the Energy Act and the Mining Act. In addition, the proposal provides powers to take quick and effective measures in times of an existing or impending energy crisis. This primarily concerns the measures described in the Gas Protection and Recovery Plan. This will all be set down in a separate law, the Energy Supply Crisis Containment Act (Wet bestrijden energieleveringscrisis).

GTS has submitted a response concerning various elements of the proposed legislation[50]. The Ministry will incorporate the various responses received into a subsequent version that will be sent to the various regulatory authorities (the 'implementation and enforceability review' version). The Ministry currently envisions the act, if passed, taking effect on 1 January 2027.

3.2.3 Methane Emissions Regulation

The Methane Emissions Regulation, which came into force on 4 August 2025, aims to limit methane emissions resulting from the extraction of fossil fuels and the transmission, treatment and distribution of natural gas. Understandably, this regulation has implications for GTS, and investments will be required in connection with this legislation. The largest investments will need to be made in the following three sub-areas:

1. Monitoring, reporting, and verification (Article 12): investments and costs related to the quantification and measurement of methane emissions, including reporting obligations;

2. Leak detection and repair (Article 14): investments in detection technologies, repair equipment, etc.; increase in required staffing (operational costs);

3. Venting and flaring (Article 15): investments in alternative, zero-emission equipment, equipment replacement, and in operational procedures to prevent emissions (e.g., reinjection, on-site use, etc.).

In the coming years, investments prompted by the Methane Emissions Regulation will be included in the various investment plans. Given that this regulation only recently came into force and thus the Dutch State Supervision of Mines (SodM) is in the initial phase of fulfilling its role as the primary supervisory authority, there is certainly no full clarity yet on how GTS is expected to comply with this regulation. In the coming years, it will become clear whether and how supervisory authorities will deal with possible proportionality considerations when investment decisions are being made.

3.2.4 Decarbonisation Package

In June 2024, the European Parliament approved the Decarbonisation Package, which comprises a new Gas Regulation[51] and a new Gas Directive[52]. Where the provisions of the Gas Regulation applied immediately throughout the European Union starting 5 February 2025, the (recast) provisions of the Gas Directive must first be incorporated into national legislation by the Member States before they apply to market participants.

50 https://www.internetconsultatie.nl/wbe/reactie/5cf845f5-f291-4f8d-9df5-efcdd3e6cc02

51 REGULATION (EU) 2024/1789 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 June 2024 on the internal markets for renewable gas, natural gas and hydrogen, amending Regulations (EU) No 1227/2011, (EU) 2017/1938, (EU) 2019/942 and (EU) 2022/869 and Decision (EU) 2017/684 and repealing Regulation (EC) No 715/2009 (recast)

52 DIRECTIVE (EU) 2024/1788 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 June 2024 on common rules for the internal markets for renewable gas, natural gas and hydrogen, amending Directive (EU) 2023/1791 and repealing Directive 2009/73/EC

In addition to reiterating GTS' tasks and responsibilities from the previous Regulation, the new Gas Regulation includes additional information obligations for TSOs and provides the option of giving a discount on transmission tariffs to market participants that feed in, store and/or transport renewable gas[53]. In addition, TSOs (in this case GTS) and DSOs must cooperate to enable reverse flow of gas from the DSOs to the TSOs.

The new Gas Directive contains new and additional provisions for TSOs (such as GTS) regarding both the content of network development plans (investment plans) and the preparation and coordination with other parties of the network development plans to be drawn up. Additionally, the new Gas Directive offers TSOs and DSOs more options to reject connection and transmission requests if the expansion investments would be financially irresponsible, unless the applicant is willing to pay for such. Member States must implement the Gas Directive in their national legislation, which the Netherlands will do through the Decarbonisation Package Implementation Act (Implementatiewet Decarbonisatiepakket), which will amend the Energy Act. According to current insights, this amendment will take effect on 1 January 2027.

A concerning element of the consultation version of the Decarbonisation Package is that it states that GTS should collect levies on behalf of the Ministry of Climate Policy and Green Growth in the event that Energy Management Netherlands (EBN) incurs losses as a result of EBN their statutory duties related to the annual filling of the gas storages and to compensate the costs EBN will incur to establish an emergency supply. Such (ex-post) levies distort the market and, moreover, GTS believes that collecting government levies is not a task suitable for the operator of the national gas grid[54].

3.3 Biomethane

International developments regarding biomethane

The deteriorating geopolitical situation provides an additional incentive to accelerate the transition to sustainable energy sources so as to make Europe more independent of external energy sources. The EU is therefore committed to accelerating the energy transition. With regard to biomethane, in 2022 the EU set the target of producing 35 bcm (approximately 342 TWh) of biomethane by 2030, in part to replace Russian gas. This makes accommodating biomethane a strategic priority for GTS. To this end, parties in Europe are collaborating on matters relating to biomethane through the European Biogas Association (EBA) and various other consultative bodies, working together to make adjustments to gas quality matters, in GERG (Biostar2C), for example.

53 Note: in its 2026 Tariff Decision, the Netherlands Authority for Consumers and Markets (ACM) opted not to apply this option.

54 For additional information, please refer to pages 10 to 12 of GTS's consultation response at: https://www.internetconsultatie.nl/wbe/reactie/5cf845f5-f291-4f8d-9df5-efcdd3e6cc02

Developments in the Netherlands regarding biomethane

In May 2025, the Dutch government resolved that the blending mandate for biomethane would take effect on 1 January 2027, with the goal of reducing CO_2 emissions by 2.85 MT. It is expected that this will correspond to 0.83 bcm of biomethane production in 2031. The blending mandate is seen as an important incentive to boost biomethane production. However, regarding the blending mandate it is relevant to state that the intent is to stimulate domestic production of biomethane that leads to CO_2 reduction in the Netherlands. The European position states that the Netherlands should open its borders to biomethane produced elsewhere in Europe. This means that CO_2 reduction remains in the country of origin, so the blending mandate does not achieve the goal of stimulating domestic production, or only does so partially.

The biomethane production is currently growing much less rapidly than desired due to various obstacles and discouraging factors. Failure to finalise the business case often poses an insurmountable obstacle. Introducing and extending the blending mandate could possibly have a positive effect on the business case for biomethane investments and, accordingly, may boost biomethane production. The blending mandate requires energy suppliers to add a percentage of biomethane to the natural gas they supply.

Other obstacles include a difficult, slow permit process, the impact of nitrogen legislation, a lack of electricity connection points (grid congestion), and insufficient staff at engineering firms and contractors to carry out the work on schedule. All of this is delaying the development of new projects. Moreover, the gas quality standard for the high-pressure gas grid (HPGG) imposes strict requirements regarding matters such as the permitted amount of oxygen, for example. From a biomethane perspective, this hinders the flow of biomethane from the regional distribution network (RDN) and the network of the regional network operators into the HPGG.

The increasing demand for biomethane and insufficient domestic production to meet this demand could result in biomethane having to be imported. A prerequisite is that the biomethane must meet the set sustainability requirements. Agreements concerning this have been made between various EU Member States, and this matter is, in principle, regulated by the system for issuing Guarantees of Origin. It is essential that the certification of foreign biomethane is in order and that this is monitored to prevent certified biomethane from being displaced by biomethane with questionable certificates.

Biomethane developments at GTS

Accommodating biomethane is a strategic priority for GTS. Accordingly, Gasunie is working closely with the regional network operators and with NBNL on various network adjustments to accommodate the growing production of biomethane. In 2026, the GZI biomethane gathering pipeline, the biomethane boosters in Tilburg and Mill, and the connection between the regional transmission networks of Axel and Ossendrecht will be commissioned, followed in 2027 by the boosters in Almere, Groningen and, possibly, Hengelo. It is expected at this time that the Zuidwal biomethane gathering pipeline will also be installed in 2027, in coordination with the relevant regional network operators.

Gasunie is developing a long-term vision for the development of the gas transmission network for biomethane, based on the studies conducted[55]. This vision shows that a nationwide methane network will still be necessary in 2050, but with much less capacity. Though biomethane produced locally through anaerobic digestion will, as much as possible, be taken off from the distribution network directly for local use, supply and demand will often be out of balance. Local surpluses will be transported via boosters to the RDN and the HPGG and from there to other demand locations or to gas storage facilities for later use. This way GTS will help prevent congestion (particularly during the summer period) at regional network operators. Biomethane from large-scale gasification will, where possible, be fed directly into the HPGG for immediate use and storage. This is an additional argument for keeping the existing gas storage facilities.

Regarding the previously mentioned variances in gas quality and obstacles to the reverse flow of biomethane to the HPGG, research into how this can be resolved is required. A study will have to determine whether aligning the standards for the HPGG with those of the RDN is a possible, and possibly preferable, outcome. If this is not possible for the entire network, gas treatment (possibly locally) with regard to oxygen (O_2) and sulphur (THT) may be required.

3.4 Hydrogen network

GTS foresees a growing role for hydrogen as a sustainable energy carrier and feedstock. For Gasunie, making industry more sustainable and offering solutions to keep it in the Netherlands is a top priority. By revising its strategic agenda, Gasunie is fully committed to accelerating the energy transition and maintaining energy security. With all of this in mind, Gasunie wants to build the hydrogen infrastructure as quickly as possible, using existing natural gas pipelines for the future transport of hydrogen where possible. This is attractive for the users of the hydrogen transmission network because it means that there will be less need for installing new pipelines (which would be the more expensive option). It is also attractive for GTS customers because it will reduce the costs of the remaining natural gas network, both because the new operator will pay for the transfer of the pipelines and because this approach avoids the costs relating to decommissioning assets.

Development and realisation of the national hydrogen transmission network by Hynetwork Services

The Minister of Economic Affairs and Climate Policy announced in a letter to Parliament[56] in mid-2022 that Gasunie subsidiary Hynetwork Services (HNS) would be tasked with developing and managing a national hydrogen transmission network. This duty is designated a 'service of general economic interest' (SGEI), to be carried out by HNS. The Minister has set down the rules and conditions associated with this SGEI in a decision. In addition, Hynetwork was designated as the hydrogen TSO for the onshore hydrogen network.

Hynetwork is developing the hydrogen network according to a roll-out plan, which sets out which part of the hydrogen transmission network is expected to be ready when. The roll-out plan is based in part on the reuse of natural gas pipelines that are no longer needed for natural gas transmission.

55 CE Delft (2030) and II3050 (2040 and 2050)
56 Dutch Parliamentary documents 2021-2022, 32 813, no. 1061

Hynetwork started on the construction of the network in Rotterdam in 2023, and the infrastructure is expected to be ready for use by 2026 at the latest. Hynetwork has also started on the preliminary works in other industrial clusters.

In consultation with representative network user organisations, Hynetwork has developed the general conditions for the use of the hydrogen transmission network and for connections to the network, and the company has published version 1.0 of the contract set[57]. The connection policy for the hydrogen network has also been published, laying down the rules that Hynetwork goes by for parties that want to be connected to the national hydrogen network[58].

Use of existing GTS natural gas pipelines

Gasunie is reusing existing gas pipelines for the hydrogen network as much as possible. Naturally, security of supply of the natural gas network is taken into account. The changing circumstances in the natural gas market have also had a bearing on the new roll-out plan, which was submitted to the market participants for consultation in December 2024. Where no existing gas pipelines are available for the implementation of the hydrogen roll-out plan, investments in new hydrogen pipelines will be made.

3.5 CO2

Recent developments

Gasunie is participating in the development of CO2 storage in depleted gas fields deep under the North Sea seabed through the Porthos and Aramis projects and is also focusing on the construction of CO2 transport pipelines between the major industrial clusters. The first part of this transport system is a CO2 pipeline laid along the Delta Rhine Corridor from the Port of Rotterdam to the south-eastern region of the Netherlands. Branches to industrial locations in Limburg (Chemelot), Zeeland, and possibly the North Sea Canal area are planned soon afterward, and the possibility of connecting the northern industrial cluster in the Netherlands to this system is also being explored. This system will also enable CO2 from Germany and Belgium to be transported to the North Sea. In the long term, the infrastructure can also be used to transport biogenic or air-captured CO2 to industrial clusters for the production of products such as plastics. This system can contribute to achieving negative emissions.

For the North Sea Canal area and northern region of the Netherlands in particular, CO2 will initially mainly be shipped to Rotterdam rather than transported by pipeline.

The use of existing GTS natural gas pipelines for the transport of CO2 is being investigated; however, whether and how this will be implemented depends on the use of natural gas pipelines for the transmission of hydrogen as well as on the volume and thus the CO2 transport method[59].

57 https://www.hynetwork.nl/en/knowledge-base/article/custom-hydrogen-transport-and-connection-contracts-available
58 https://www.hynetwork.nl/en/knowledge-base/article/connection-policy
59 Either gaseous or dense phase: once volumes become so large that transport in dense phase proves necessary, the use of the existing natural gas pipelines is not possible.

4 Bottlenecks

In this section, GTS explains about the capacity bottlenecks and quality bottlenecks.

- GTS determines the capacity bottlenecks annually in its capacity bottleneck analysis. The results of this analysis are described in sub-section 4.1.
- Identified quality bottlenecks are recorded and continuously monitored in a bottleneck register. Quality bottlenecks can either be resolved through investments or operational measures, or they can be accepted (see sub-section 4.2).

4.1 Capacity bottleneck analysis findings

The bottleneck analysis was performed both for GTS' HPGG and its RDN. The transmission capacity of both networks has been assessed for all four scenarios (HGP, MR, HS and CB) for the 2029/2030, 2034/2035 and 2039/2040 gas years. A gas year runs from 1 October to 30 September. For the HPGG, the bottleneck analysis is based on the complete set of transmission load situations that can occur in a scenario based on the method for capacity assessment as described in sub-section 1.3.2.

The capacity bottleneck analysis carried out did not reveal any new capacity bottlenecks. Furthermore, it was seen that all transmission/transport situations can be accommodated in all scenarios. Investments to create more capacity are therefore not necessary.

RDN

The RDN capacity analysis has not revealed any bottlenecks under any of the four scenarios.

4.2 Quality bottlenecks analysis findings

Various bottlenecks have been identified using the methods described in the QAS. These quality bottlenecks and the resulting investments are shown in Appendix III. No quality bottlenecks were identified that required an investment of € 5 million or more (major investments) for which no FID has yet been made.

No quality bottlenecks that would result in investments that fall under the Project procedure (formerly, the National Coordination Scheme) have been identified. These concern investments of national importance, for which the national government coordinates decision-making (including permits and exemptions).

Appendix IV provides an overview of the bottlenecks that cannot be resolved with investments. These bottlenecks must be addressed through operational measures (OPEX) or accepted for the time being on the basis of an assessment of the risk and costs of resolving the relevant bottleneck.

5 Investments proposed for 2026-2035

This section provides insight into the scope and structure of GTS' portfolio of proposed investments over the next 10 years.

5.1 General

The following categories are used in the Kader Informatiebehoefte Investeringsplannen 2026 Gasunie Transport Services (Information requirement framework for GTS' 2026 Investment Plans) that ACM has sent to GTS for the purpose of assessing the 2026 Investment Plan (2026 IP):

- Regular investments: all investments of less than € 5 million, with the exception of connections and diversions;
- Major investments: NCS investment or an investment greater than or equal to € 5 million, excluding connections and diversions;
- Connections and diversions: investments in the gas transmission network, insofar as these concern connections and diversions;
- Grid-related investments: rather than being investments in the physical parts of the grid these are investments in aspects of the business that pose a significant risk to fulfilling the statutory duty.

GTS also describes investments that have been determined to be necessary under a different process.

GTS uses these categories when presenting investments in this draft IP. The grid-related investments (IT investments) category does not apply to GTS given that GTS uses IT assets owned by Gasunie. This means that GTS does not make IT CAPEX investments, but pays an annual fee (OPEX) to Gasunie for the use of these assets. Accordingly, no IT investments are presented in this draft 2026 IP.

Replacement investments

The assets in the national gas grid originate from different periods, the oldest being over 60 years old. Given this fact, regular and major replacement investments are made to keep the transmission system operating safely, reliably and in a risk-efficient manner.

The replacement investments mainly consist of corrective measures (bringing the performance of assets back up to the set quality standard), measures based on legal obligations (e.g. reducing methane emissions), replacements in line with policy concerning, for example, obsolete parts (e.g. electronics), regularly scheduled activities (e.g. civil engineering maintenance), and CSR (e.g. reducing the carbon footprint).

For replacement investments, GTS assesses these within the Risk-Based Asset Management framework based on identified risks.

Expansion investments

An expansion investment is defined as an investment that a) leads to an increase in the length, capacity or functionality of the gas transmission network; and b) is based on an external need.

Available data

In this IP, GTS provides a complete overview of investments for 2026 and 2027, i.e. investments that have already been approved or are already in the preparatory phase. Additionally, data with respect to ongoing investments for 2028 onwards is included in the following categories:

- regular expansion investments;
- major investments;
- connections and diversions.

For new investments (both major and regular) and investments for connections and diversions in 2028 and later years, the investment levels as determined for the Investment Outlook are assumed. The Investment Outlook is an analysis by GTS that estimates investment levels over the next 15 years, partly based on historical investments. Among other things, these investment levels are used to determine GTS' financing needs.

Major investments for which an FID is yet to be made are accounted for on the basis of Alternative Considerations included in Appendix IV. The reference date for the investment portfolio is 1 September 2025, meaning that information provided with respect to aspects such as the status of an investment or a financial forecast is valid as at 1 September 2025.

Notes to the tables

Sub-section 5.2 below includes tables showing expected costs (forecasts) per year. This concerns both ongoing investments that were included in a previous investment plan or an addendum, and new investments that GTS is including in this 2026 IP. The forecast costs are aggregated at asset category level. In many cases, an investment can be allocated to a single asset category. Where an investment relates to several categories of assets, this is listed under the designation 'multiple asset categories'.

5.2 Regular and major investments

This section provides an explanation of various replacement and expansion investments that will determine the size and structure of the investment portfolio in the coming years.

Conversion projects

Following the decision to end gas extraction from the Groningen field, GTS has been legally mandated to help facilitate this phase-out through quality conversion and switching. Construction of the nitrogen plant in Zuidbroek was completed in 2024. This nitrogen plant enables the conversion of H-gas to G-gas so that customers can continue to have access to pseudo G-gas now that the phase out of production from the Groningen field has been fully completed.
The projects being carried out at this time were already included in previous investment plans or in the related addenda:

- PG- (various): G-to-H conversion of large industrial consumers (2020 IP);
- PG-I.014764: acquisition of gas transmission pipeline for maximum capacity of Grijpskerk UGS facility (addendum to 2022 IP).

Upgrading valve set-ups

The valve set-ups in the GTS network are being replaced using a programme-based approach. Applying a condition-based maintenance strategy, it is determined whether valve set-ups need to be repaired, replaced or dismantled (if they no longer have a future function). As part of this, an average of around 30 valve set-ups will be replaced per year at an expected average investment of approximately € 33 million per year.

Reversal of gas flows

Developments in the gas market have resulted in a reversal in the direction of the dominant gas flows, from east-to-west to west-to-east. This reversal has a significant impact on the way in which GTS' gas transmission network is deployed This has resulted in bottlenecks at the compressor stations (CS) in Wijngaarden, Ravenstein and Scheemda and led to investments needed to resolve these bottlenecks.

- PG-I.014782 CS Wijngaarden: modification and expansion of switching facilities
- PG-I.014783 CS Ravenstein: limited modification to functionality
- PG-I.014788 CS Scheemda: modification and expansion with reduction facility

These expansion investments are described in the addendum to the 2022 IP.

Connection requests for LNG feed-in

The addendum to the 2022 IP also includes the measures needed to facilitate an LNG project in the Maasvlakte industrial region and an LNG project in the central region of Zeeland (Midden-Zeeland):

- PG-I.014795 Expanding the Maasvlakte HPGG
- PG-I.014744 Measures to feed in LNG in the Midden-Zeeland region

Gate terminal is currently working on installing a fourth LNG tank. In this regard, GTS is implementing measures to expand the HPGG network in the Maasvlakte industrial region.

For measures related to the feed-in of LNG in the Midden-Zeeland region, GTS will begin on the actual project implementation as soon as there is sufficient certainty regarding the realisation of the LNG project.

Ongoing major replacement programmes

The following major investments concern ongoing replacement programmes specified in previous investment plans and addenda:

- PG-I.014442 Replacement programme for Capacity Registration Systems (CARS) and Telemetry Systems (TMX) (addendum to 2022 IP)
- PG-I.014510 Replacement programme for Electronic Volume Correctors (EVCs) (addendum to 2022 IP)
- PG-I.014727 - Replacement of gas chromatographs (2024 IP)
- PG-I.014977 Replacement of OBBU and STACOM with SRP at M&Rs (addendum to 2024 IP)
- PG-I.014064 Large-scale replacement of GRS heating systems (addendum to 2024 IP)
- PG-I.012952 Peakshaver Lifetime Extension Programme (addendum op 2024 IP).

The objective of these long-term replacement programmes is to maintain assets, replace outdated or obsolete equipment, and ensure compliance with regulatory requirements.

Major investments for biomethane

The following major investments relating to biomethane concern ongoing investments described in previous investment plans and addenda:

- PG-I.013799 and PG-I.014572 GZI Biomethane gathering pipeline (addendum to 2022 IP).
- PG-I.014852 Zuidwal biomethane gathering pipeline (A-601 west) (2024 IP)
- I.014817.01 [E.000186] RDN biomethane connection Axel-Ossendrecht (2024 IP)

The objective is to eliminate congestion for biomethane feed-in to the regional networks by converting existing low-pressure gas pipelines into biomethane gathering pipelines. The anticipated growth in connections for the GZI biomethane gathering pipeline can already be seen. A third biomethane booster has been ordered for use here, and a fourth is planned. In addition, investments are being made for connecting biomethane feed-in points and installing biomethane boosters for feeding biomethane into the GTS network.

Measures for GHG emission reduction

As a result of EU regulations and as a prudent TSO, GTS must prevent and fix methane leaks in order to reduce GHG emissions into the atmosphere. The following major investments, as identified in addenda to the IP published previously, are being considered for this purpose:

- PG-I.014513 Replacement programme for making M&R stations emission-free (addendum to 2022 IP).
- PG-I.0014xxx Measures to reduce vent stack methane emissions at CS (addendum to 2024 IP)

5.2.1 Regular investments for 2026–2027

The regular investments concern all investments in the national gas grid amounting to less than € 5 million, with the exception of connections and diversions. The new regular investments for 2026 and 2027, together with the previously approved regular investments, are shown in Table 5.1. For comparison's sake, the table also includes forecasts for 2025 (status as per 1 September 2025).

Table 5.1: Regular investments per asset category from 2026 onwards

Regular (€ millions)	Forecast for 2025[60]	Forecast for 2026	Forecast for 2027
Valve set-ups	50.7	29.6	37.3
Compressor stations	17.7	21.4	15.8
Export stations	0.0	0.0	0.0
Gas receiving stations	7.0	2.7	1.5
Pipelines	20.6	8.4	2.6
LNG	0.0	0.0	0.0
M&R	2.1	2.6	1.2
Multiple asset categories	0.9	1.5	0.0
Blending stations	1.0	0.4	1.8
Other	3.1	1.7	2.0
Pressure-reducing stations	1.2	1.0	3.2
Nitrogen installations	0.5	1.2	0.4
Total	104.8	70.5	65.8

Appendix III details the underlying regular investments for the period 2026–2027.

5.2.2 Major investments for 2026–2027

Major investments comprise all investments amounting to € 5 million or more for the maintenance and development of the national gas grid, with the exception of connections and diversions. Major investments also relate to investments of national importance that fall under the Project procedure (formerly, the National Coordination Scheme).

60 Forecast as per 1 September 2025

The new major investments for 2026 and 2027, together with the previously approved major investments, are shown in Table 5.2. For comparison's sake, the table also includes forecasts for 2025 (status as per 1 September 2025).

Table 5.2: Major investments per asset category from 2026 onwards

Major (€ millions)	Forecast for 2025[61]	Forecast for 2026	Forecast for 2027
Valve set-ups	0.1	0.0	0.0
Compressor stations	23.2	29.7	24.8
Gas receiving stations	15.9	22.3	28.2
Pipelines	12.7	31.6	21.0
LNG	11.9	6.1	1.9
M&R	6.2	12.8	20.7
Multiple asset categories	0.3	5.1	5.2
Blending stations	-	-	-
Nitrogen installations	13.8	0.0	0.0
Other	–	–	–
Total	84.9	110.1	104.3

5.2.3 Regular and major long-term investments

The Investment Outlook shows an annual investment level of approximately € 70 million for the regular and major replacement investments. The replacement investments include multi-year investment programmes for the replacement of obsolete equipment (EVCs, CARS/TMX, gas chromatographs). Compared to the 2024 IP, the effect of increased material costs and higher hourly rates can be seen in the market.

On balance, these effects lead to a (slightly) higher expected level of investments compared to the previous IP. GTS will continue to critically analyse the level of replacement investments.

To reduce GTS' carbon footprint, programmes to reduce electricity and gas consumption and GHG emissions are underway. It is expected that this will lead to additional replacement investments on top of the standard annual replacement investments.

GTS also has regular and major investments for biomethane boosters and biomethane gathering pipelines to facilitate the feed-in of biomethane into the system. For the longer term, an estimate has been made of the annual investment level for these specific biomethane investments, assuming € 8 million per year from 2028.

The regular and major investments up to and including 2035 are shown in Table 5.3.

For comparison's sake, the table also includes forecasts for 2025 (status as per 1 September 2025).

61 *Forecast as per 1 September 2025*

Table 5.3: Regular and major long-term investments

Regular and major long-term investments per project											
Forecast (€ millions)	2025[62]	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Replacement investments											
Replacement investments, standard	99.6	61.9	65.2	70	70	70	70	70	70	70	70
Replacement investments regarding emission reduction	10.7	34.1	51.9	31.6	28.9	9.8	8.3	8.3	5	5	5
GRS heating systems	9.2	15.0	20	20	20	20	20	20	20	20	15
LEP LNG PS	11.9	6.1	1.9	1.1	-	-	-	-	-	-	-
Subtotal, RI	131.4	117.1	139.0	122.7	118.9	99.8	98.3	98.3	95	95	90
Expansion investments											
Zuidbroek N2 plant	9.8	-	-	-	-	-	-	-	-	-	-
Conversion G-gas to H-gas	3.6	-	-	-	-	-	-	-	-	-	-
Biomethane boosters + gathering pipelines	12.8	19.9	16.9	8	8	8	8	8	8	8	8
Various expansions and acquisitions	1.3	7.6	-	-	-	-	-	-	-	-	-
Acq. of connection pipelines (NC-TAR)	0.6	0.5	1.7	0.1	-	-	-	-	-	-	-
Reversal of gas flows	16.5	9.0	0.0	-	-	-	-	-	-	-	-
LNG measures	2.0	23.8	10	-	-	-	-	-	-	-	-
Subtotal, EI	46.5	60.8	28.6	8.1	8	8	8	8	8	8	8
Total Regular + Major	178	178	168	131	127	108	106	106	103	103	98

62 *Forecast as per 1 September 2025*

Table 5.4 shows a breakdown of the expected replacement investments (regular + major) per asset category for the period 2026 to 2030.

For comparison's sake, the table also includes forecasts for 2025 (status as per 1 September 2025).

TABLE 5.4: REPLACEMENT INVESTMENTS (REGULAR + MAJOR) PER ASSET CATEGORY

Replacement investments (regular + major) per asset category						
Forecast (€ millions)	2025[63]	2026	2027	2028	2029	2030
Valve set-ups	50.9	29.6	37.3	35	35	35
Compressor stations	17.9	28.5	34.8	18.3	7	7
Export stations	0.0	0.0	0.0	0.0	0	0
Gas receiving stations	22.9	24.5	28.0	26.5	26.5	26.5
Pipelines	19.7	2.4	2.5	9	9	9
LNG	11.9	6.1	1.9	1.0	0	0
M&R	8.4	15.4	22.0	14.6	15	15
Multiple asset categories	1.2	6.5	5.2	6.6	13.4	8.3
Blending stations	1.0	0.4	1.8	0.6	0.5	0.5
Other	3.1	1.7	2.0	2.0	2	2
Pressure-reducing stations	1.2	1.0	3.2	2.0	2	2
Nitrogen installations	4.5	1.2	0.4	7	7	7
Total	143	117	139	123	117	112

5.2.4 Studies into possible major investments

GTS is currently carrying out a number of studies from which investments may possibly follow. These studies are still in the preparatory phase. Because these investments may come within the scope of the 2026 IP, GTS feels it should include these studies for information purposes. Should the studies described below actually reach the realisation phase and come within the scope of the 2026 IP, GTS can add an addendum if the required investment would result in a significant change.

These study programmes at GTS comprise:

- R.010141 - CSR; mitigating emissions from measuring probes and quality measurements
  This study examines the options for replacing measuring instruments and for methane emission reduction in the framework of the Methane Regulation.
- E.000497 - CSR; installing PV panels at multiple locations
  This study examines the use of PV panels or wind turbines to offset local electricity consumption within the framework of the energy savings obligation.

63 *Forecast as per 1 September 2025*

5.3 Connections and diversions

This concerns investments in existing and new connections, including biomethane connections.

Diversions concern investments required due to developments relating to spatial planning by third parties (e.g. municipalities, Rijkswaterstaat) that result in GTS assets having to be relocated. This mainly concerns pipelines and, once every two to three years on average, a gas receiving station. The party requesting the diversion pays GTS compensation of, on average, two thirds of the costs; the actual amount depends on the legal position.

The new investments for connections and conversions for the 2026 IP, together with the previously approved investments for these, are shown in Table 5.5. The amounts shown in Table 5.5 and the confidential Appendix V do not include contributions from third parties, where applicable.

The 2026-2027 diversion portfolio is expected to amount to € 1.5 million and € 8.4 million respectively, excluding contributions from third parties.

TABLE 5.5: INVESTMENTS IN CONNECTIONS AND DIVERSIONS PER ASSET CATEGORY FROM 2025 ONWARDS

Investments in connections and diversions (€ millions)	Forecast for 2025[64]	Forecast for 2026	Forecast for 2027
Connections			
Valve set-ups	0.0	0.0	0.0
Gas receiving stations	1.1	0.2	1.3
Pipelines	10.1	7.0	6.1
Multiple asset categories	0.0	0.0	0.0
Subtotal, connections	11.2	7.2	7.4
Diversions[65]			
Pipelines	1.6	1.4	8.2
Multiple asset categories	0.0	0.1	0.2
Subtotal, diversions	1.6	1.5	8.4
Total, connections and diversions	12.8	8.7	15.8

64 *Forecast as per 1 September 2025*
65 *Excl. third-party contributions*

Compared to the 2024 IP, we see a slightly increased investment level for connections and diversions. Investments for connections largely relate to the feed-in of biomethane. Increased material costs and higher hourly rates affect the level of investment for connections and diversions, too. In the long term, an annual average investment level of € 9 million is expected for new connections and € 7 million for diversions, excluding third-party contributions (see Table 5.6). The level of investment in these categories obviously depends on the future economic development (among other factors).

Table 5.6: Investments in connections and diversions over the long term

Connections and diversions over the long term											
Forecast (€ millions)	2025[66]	2026	2027	2028	2029	2030	2031	2032	2032	2034	2035
Connections	11.2	7.2	7.4	10.9	9	9	9	9	9	9	9
Diversions[67]	1.6	1.4	8.4	7	7	7	7	7	7	7	7
Total, connections and diversions	12.8	8.6	15.8	17.9	16	16	16	16	16	16	16

Appendix III details the underlying investments in connections and diversions for the 2026–2027 period.

5.4 'Need identified in another process' investments

There are investments for which the need has already been identified in relation to a different process, under national or EU legislation, for example. This concerns connecting small fields and facilitating cross-border transport (incremental capacity).

Small fields

In accordance with Article 54a of the Dutch Gas Act, GTS must take in gas from small fields. Production from small fields (onshore) has been declining for years and there is little likelihood that new feed-in points for small fields will be arranged even in the short and medium term. An exception to this is the request for connection of the Papekop production site (close to Woerden), which is planned to be connected to the GTS network. Any investment in a new feed-in point depends on an assessment by the Ministry of Climate Policy and Green Growth regarding the usefulness and necessity of this connection.

The approval of these investments is subject to a separate process and does not fall within the scope of the IP.

Any further investments relating to small fields are expected to involve the feed in of gas from existing small field connections.

66 Forecast as per 1 September 2025
67 Excl. third-party contributions

Incremental capacity

In line with EU Regulation 2017/459 (Network Code on Capacity Allocation Mechanisms; NC CAM) the incremental capacity process applies. This is an EU-wide harmonised process to identify the market demand for incremental capacity by TSOs.

The 2025-2027 incremental capacity process started on 8 July 2025. The market interest assessment process has now been completed. Market participants have not informed us of any capacity needs and it has accordingly been determined, in consultation with the bordering TSOs, that there is no reason to offer incremental capacity or to start a next phase. This means that the 2025-2027 incremental capacity process has been completed.

Potential investments at interconnection points with Germany

Thyssengas and OGE have applied to GTS for 5 GW of H-gas transmission capacity at the Zevenaar and Winterswijk interconnection points. Currently, only L-gas capacity is available at these interconnection points. The demand for H-gas capacity is the result of the conversion of lignite-fired power stations to gas-fired power stations in Germany. GTS, Thyssengas and OGE are investigating the best possible next steps regarding the assessment of this potential investment. GTS will consult with the relevant stakeholders for this purpose.

5.5 Total investments (2026-2035)

Up to the end of 2026, GTS' investment portfolio will be largely determined by measures to address the change in gas flows in the Netherlands (adapting compressor stations) and multi-year investment programmes for replacing end-of-life assets (heating systems at gas receiving stations) and obsolete equipment (EVCs, CARS/TMX, gas chromatographs).

Additionally, investments have also arisen due to initiatives in the market for feeding both biomethane and LNG into the GTS network. GTS is working on the GZI gathering pipeline (for biomethane) and on expanding the grid in the Maasvlakte industrial area (to handle additional LNG feed-in).

GTS is further investing in reducing its carbon footprint through programmes to increase energy efficiency, reduce emissions, optimise operations, and further boost the sustainability of its operations.

An effect due to increased material costs and higher hourly rates can also be seen in the market. These developments will lead to an increased level of investment for GTS.

To maintain the transmission network, GTS expects a net investment level of approximately € 70 million per year for the period up to the end of 2035.

Table 5.7 presents an overview of GTS' investments over the long term. For comparison's sake, the table also includes forecasts for 2025 (status as per 1 September 2025).

Table 5.7: Total investments over the long term

Total investments over the long term											
Forecast (€ millions)	2025[68]	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Regular + Major											
Replacement investments	99.6	61.9	65.2	70	70	70	70	70	70	70	70
Replacement investments regarding emission reduction	10.7	34.1	51.9	31.6	28.9	9.8	8.3	8.3	5	5	5
GRS heating systems	9.2	15.0	20	20	20	20	20	20	20	20	15
LEP LNG PS	11.9	6.1	1.9	1.1	-	-	-	-	-	-	-
Zuidbroek N2 plant	9.8										
Conversion G-gas to H-gas	3.6	-	-	-	-	-	-	-	-	-	-
Biomethane boosters + gathering pipelines	12.8	19.9	16.9	8	8	8	8	8	8	8	8
Various expansions and acquisitions	1.3	7.6	-	-	-	-	-	-	-	-	-
Acq. of connection pipelines (NC-TAR)	0.6	0.5	1.7	0.1	-	-	-	-	-	-	-
Reversal of gas flows	16.5	9.0	0.0	-	-	-	-	-	-	-	-
LNG measures	2.0	23.8	10	-	-	-	-	-	-	-	-
Connections	11.2	7.2	7.4	10.9	9	9	9	9	9	9	9
Diversions	1.6	1.4	8.4	7	7	7	7	7	7	7	7
Total	191	186	183	149	143	124	122	122	119	119	114

68 Forecast as per 1 September 2025

6 Review of previous investment plans

In the previous investment plans, GTS offered an overall view of the investments required for expansion of and replacements in the national gas grid. This section provides an overview of the investments completed in 2023 and 2024. The actual costs are compared with the previously estimated costs.

6.1 List of completed investment projects

Appendix V provides an overview of the investment projects completed in 2023 and 2024, per category.

Partly as a result of the gas crisis, inflation has risen significantly, reaching levels not seen in a long time. This has had a noticeable impact on the implementation of the investment projects. While price effects hardly played any role at all in the review of 2021 and 2022 in the previous Investment Plan (2024 IP), this can clearly not be said for the current review of 2023 and 2024. Shortages on the market and high inflation have unquestionably impacted the implementation of investment projects, particularly in terms of lead times and project costs.

A total of 124 investment projects were completed in 2023 and 2024, with two of the six major investment projects completed within the estimated timeline. The average time-to-commission delay for the completed major projects was around 10 months.

6.2 Variances in actual investments for completed projects

GTS has made an analysis of the investment projects completed in 2023 and 2024 (regular, major, connections and diversions). These planned investments were included in an earlier investment plan or addendum.

The level of inaccuracy of the baseline budget is affected by the point at which the budget is drawn up and the extent to which the project scope has been developed. In the early phases of a project, when there are still many uncertainties, cost estimates are often less accurate. As the project progresses and more information becomes available, cost estimates can be made more precisely.

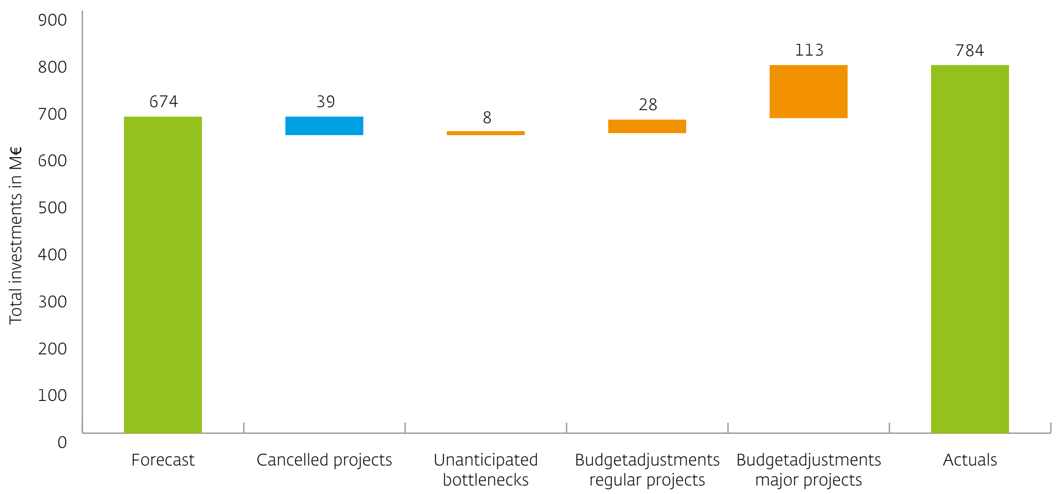
For the completed investments, the variances (from the forecast/advance estimate) can be broadly divided as follows:

- Budget adjustments: the costs of a project may come out higher or lower than anticipated due to aspects such as market price developments for materials and contractors or the required deployment of resources. To ensure that the project is delivered with the intended functionality and quality level, the investment budget is adjusted upwards or downwards to reflect the actual project costs.
- Unforeseen bottlenecks: bottlenecks, including those classified as major incidents. This includes serious disruptions (urgent situations) that have a major impact on external/internal safety and/or transmission security. Action to resolve these bottlenecks is taken immediately; these corrective action projects fall outside the annual plan process. These were unplanned investments and could not be anticipated in the annual plan process.

- Scheduling adjustments: changing when the project is carried out. Various factors that influence the lead time can delay the delivery date (see also sub-section 6.2.1). In certain cases, the project can be delivered earlier than scheduled by combining this with one or more other projects with synergy benefits and carrying these out at the same time. This can be done, for example, by bringing forward a project from a later annual plan so that it can be carried out jointly with a project from the current annual plan.
- Cancelled projects: terminating projects. If, on review, it appears that the approach to a bottleneck is insufficiently risk-efficient, a decision can be made not to invest in this measure and either accept the bottleneck or mitigate the risk with operational measures. The initially estimated investments are then removed from the portfolio.

Figure 6.1 provides an overview of the various factors that contributed to the difference between the estimated costs and the actual costs of the investment projects. The average increase in the estimated budget for investments realised in 2023 and 2024 was approximately 16%.

Figure 6.1: Variances between the forecasts and actual investments for completed projects in 2023 and 2024



Of the € 113 million in budget adjustments for major projects, € 91 million is explained by the deviation with regard to the completion of the nitrogen plant in Zuidbroek. It should be noted that this € 91 million represents the deviation from the budget as recorded at the time of review. The expected costs of the nitrogen plant, on which this review is based, were derived from the budget at the time of review in the addendum to the NOP2017, submitted in June 2018. After review, GTS calculated a P90 budget, and the Zuidbroek plant was completed within this P90 budget. The costs for the construction of the nitrogen plant are therefore slightly higher than initially estimated and, given the high inflation rate, easily explained.

Factors that influenced the completion time of the nitrogen plant are strongly related to the global COVID-19 pandemic, which had marked consequences for engineering, production, logistics, staffing, and much more. All of these factors significantly impacted the project's completion time.

In this sub-section, GTS further explains the deviations in actual investments compared to the expected investments. There are a number of factors, both external and internal, that resulted in variances that brought about differences between planning and completion of the projects that were commissioned in 2023 and 2024. The price effects resulting from high inflation became clearly visible during this period.

For budget overruns of more than 25%, the cause of the variance and the impact on GTS' statutory duties are described in Appendix V. Sub-sections 6.2.1 and 6.2.2 provide an explanation of the causes and consequences of these variances. Finally, sub-section 6.2.3 describes the measures taken by GTS to minimise such variances.

6.2.1 Causes of project variances

A variance may arise due to changes in project implementation or adjustments to the project portfolio. The main reasons for deviations from the project timetable are described below.

Factors that impact project lead time

- Gas transmission restrictions: there are limited time windows during which gas flows can be interrupted or diverted.
- Requirements under the Dutch Environment and Planning Act: The Dutch Environment and Planning Act came into effect on 1 January 2024. Compliance with this new law has resulted in longer lead times arising from, among other things, the mandatory ecological assessment and year-round surveys of the prevalent plant and animal species.
- Permit procedures: long procedures or additional requirements of the competent authority, i.e. the water boards or the municipal, provincial or national authorities.
- Unavailability of technical and other staff: GTS and its contract partners have limited resources available.
- Delivery time for materials: longer lead times for ordering and delivering required materials.
- Interfaces with other projects: various projects can influence each other's lead times due to physical proximity, scheduling constraints, or competition for resources (staff and specific equipment).
- External circumstances: this concerns unforeseen problems that only become apparent during the construction phase, such as soil contamination, a shift in the period of a connected company's plant shutdown, weather conditions, etc.

Factors that impact the budget

- Labour costs: this concerns increased wage costs for design, supervision, engineering and management.
- Costs of materials: these are determined by the price of raw materials, labour and energy and have increased significantly due to rising labour costs and a rapid increase in energy prices in 2022 due to geopolitical developments.
- Environs management: the Dutch Environment and Planning Act has brought about an increase in the required use of resources for aspects like environs management, legal matters and ecological matters, particularly during the project preparation phase.
- Nitrogen requirements: this concerns measures to limit NOx emissions/deposition during the construction phase of projects (use of electric or hydrogen-powered equipment).
- Market forces: a shortage of skilled personnel both at contractors and at GTS as well as the high demand for engineering and construction capacity in the market have pushed up market prices.
- External factors: this could concern soil contamination, water abstraction, weather conditions, etc.

Appendix V specifies the causes for the variances for projects where the actual costs deviate by more than 25% from the estimated costs.

6.2.2 Consequences of the variances

Despite the disruptions mentioned, most of the completed projects from the 2020, 2022 and 2024 investment plan were completed on schedule and with the envisioned level of functionality and quality, meaning the variance had no consequences.

For several projects covered under the 2024 IP, due to disruptions during implementation, the timeline or the budget for the project concerned has been adjusted.

Due to changes to the schedule, several investment projects have shifted in part to the following implementation year or been postponed to such an extent that these will fall under a following annual plan. An investment project may therefore not be completed within the allotted timescale. External agreements have been taken into account for the prioritisation of projects and for risk ranking. On the other hand, there may be cases where a project is completed in an earlier year than planned due to an earlier start or shorter lead time.

In a number of cases the budget has been adjusted so that the project can be delivered with the intended level of functionality and quality.

6.2.3 Measures to minimise project variances

GTS uses a professional project management system. GTS pays close attention to managing project risks both in advance of and during the implementation of investment projects. The phasing used in the project process contributes to this, and the Gasunie project governance process ensures quality assurance as well as correct decision-making at each phase gate in a project. These processes are described and explained in the GTS QAS[69].

69 https://www.gasunietransportservices.nl/uploads/fckconnector/5ddd8090-5a93-5399-8dba-53a96ca56dfc/3456314429/20240101_Beschrijving%20Kwaliteitsborgingssysteem.pdf

After an investment project has been completed, too, GTS attaches great importance to thorough evaluation and recording lessons learned. This evaluation is part of the Gasunie project governance process. The lessons learned are recorded in a database so that they can be applied to new investment projects.

In the following, we describe the main risks and outline the measures to prevent and/or mitigate variances.

Gas transmission restrictions

When working on the gas grid, it is often necessary to purge the gas from the system and/or to interrupt the gas flow. Given that, due to seasonal factors, there are limited time windows when gas flows can be interrupted or diverted, a delay in the project timeline can mean that the project can no longer continue uninterrupted and that further works must be postponed to a time window in the following season or year.

This means that a relatively modest delay (of a few days) during the works can ultimately lead to a major delay (from a few months to up to a year) in the timeline for the project as a whole. This is good reason for GTS to be extra alert when carrying out projects, in order to mitigate the risks that can accompany such delays.

To effectively include these dependencies in the project timeline, GTS consults on the technical gas transmission options and time windows early on in the project. Nevertheless, there are also factors – such as permit procedures, availability of personnel, delivery times of materials, and other external circumstances – that cannot always be controlled or prevented.

Permit procedures

Whenever we decide to expand or replace parts of the gas transmission network, we need permits before the work can go ahead. These can be temporary permits for the work involved, such as a permit for excavation work, or permanent permits for high-pressure gas transmission. In some cases, the permit procedures can be lengthy as a result of required soil surveys and/or other procedures or requirements set by the competent authority to take additional measures relating to air, soil or water quality for example.

To prevent project delays, GTS starts permit procedures at an early stage and maintains close contact with the competent authorities and local communities. If obtaining a permit takes more time than anticipated, we investigate whether it is possible to reschedule the works such that certain activities will be carried out earlier and the remaining works completed once the permit has been granted.

Shortage of technical and other staff

GTS and Gasunie, the energy infrastructure company of which GTS is a part, have limited in-house staff available. To compound this situation, the Netherlands is still faced with persistent labour shortages, especially when it comes to technical staff. That is why a liquid workforce (or 'flex layer') comprising external employees and contractors is used in many investment projects.

Contracting projects

GTS recently transitioned from traditional contracting to increasingly working with construction teams. This construction team approach sees contract partners being involved at an early stage, which helps reduce risks, ensures more accurate cost estimates, limits additional costs while the works are being carried out, and promotes more efficient project implementation.

- The advantages of the construction team approach are:
- better use of the expertise of contract partners;
- optimisation during the preliminary phase;
- use of innovations;
- more realistic timelines;
- long-term engagement of contracting parties to ensure the availability of scarce expertise and capacity of market participants.

More effort is invested at the front end of projects to ensure better and more efficient project implementation. Although this may make the design phase more expensive, the construction team approach during the implementation phase ensures lower total costs.

Material delivery time

Certain materials, such as custom materials, are subject to long delivery times. To make sure projects can stay on schedule, GTS tries to use standardised materials as much as possible. Whenever customisation is inevitable, the non-standardised materials are ordered well ahead of the construction phase.

The delivery time for materials can be longer than planned due to unforeseen circumstances at suppliers. Where, despite our best efforts, delays occur, we take appropriate control measures, such as relocating standardised materials from one project to another, provided that the former project can then still be executed as planned, or by scaling up by switching from on-site manufacturing alone to both on-site and off-site manufacturing or prefabrication.

External circumstances

When working on the gas transmission network, unanticipated situations may be encountered, such as detection of soil contamination or the presence of harmful dust or aerosols containing chromium-6 originating from coated surfaces, a change to the planned production shutdown of a connected party, weather conditions, required soil surveys and/or other procedures, or an obligation to take additional measures to prevent nitrogen deposition. To account for delays should such circumstances arise and keep projects on schedule, GTS always tries to include some leeway in its project timelines.

GTS, too, faced circumstances beyond its control, particularly in its long-term programmes and projects. Supplies of critical materials from abroad have in several cases been delayed due to the restrictions and limitations production companies have encountered. The impact of this on the progress of projects has been limited as far as possible through the implementation of additional measures.

Appendix

Appendix I: Sources

European Network of Transmission System Operators for Gas: Ten-Year Network Development Plan 2024, 2025

European Union: Directive (EU) on common rules for the internal markets for renewable gas, natural gas and hydrogen, 2024

European Union: Regulation (EU) 2024/1789 on the internal markets for renewable gas, natural gas and hydrogen, 2024

Gasunie Transport Services: Security of supply overview, 2025

Gasunie Transport Services: GTS Quality Document, 2025

Hynetwork Services: Custom hydrogen transport and connection contracts, 2023

Ministry of Economic Affairs and Climate Policy: Letter to Parliament on the Dutch government's approach to climate policy, 2022

Ministry of Economic Affairs and Climate Policy: National Energy System Plan, 1 December 2023

Ministry of Climate Policy and Green Growth: Natural resources and geothermal energy in the Netherlands, 31 August 2024

National Energy System Operator: Future Energy Scenarios, 2025

Netbeheer Nederland: 2030-2050 Integrated Infrastructure Outlook scenario report, second edition – The Energy System of the Future, 2023

Netbeheer Nederland: Netbeheer Nederland Scenario's Editie 2025, May 2025

PBL Netherlands Environmental Assessment Agency: 2024 Climate & Energy Outlook

Appendix II: Glossary and initialisms/acronyms

ACM	Autoriteit Consument en Markt (Netherlands Authority for Consumers and Markets)
ALARA	As low as reasonably achievable
BCM	Billion cubic metres
CAPEX	Capital expenditur
CARS	Capacity registration systems
CCS	Carbon Capture and Storage
CES	Cluster Energy Strategy
CS	Compressor station
DSO	Distribution System Operator
Dunkelflaute	Periods with low electricity generation from wind and solar power
EET	EemsEnergyTerminal, terminal in the port of Eemshaven comprising floating storage regasification units (FSRUs)
ENTSO-E	European Network of Transmission System Operators for Electricity
ENTSOG	European Network of Transmission System Operators for Gas
ETM	Energy transition model
HGP	Home-Grown Power (Eigen Vermogen; 2026 IP scenario)
EVC	Electronic volume corrector
EZK	Dutch Ministry of Economic Affairs and Climate Policy
FES	Future Energy Scenarios
FID	Final investment decision
GATE	LNG terminal in the Maasvlakte industrial area
CB	Collaborative Balance (Gezamenlijke Balans in the 2026 IP scenario
GRS	Gas receiving station
GTS	Gasunie Transport Services, national TSO for gas
GW	Gigawatt (capacity)
HS	Horizon Supply (Horizon Aanvoer in the 2026 IP scenario)
H-gas	High-calorific gas
HPGG	High-pressure gas grid
HNS	Hynetwork Services, tasked with developing and operating the national hydrogen grid
IBN	Commissioning (Ingebruikname in Dutch)
II3050	2030-2050 Integrated Infrastructure Outlook
IP	Investment Plan
QAS	Quality assurance system
KEV	Climate & Energy Outlook (Klimaat- en Energieverkenning)
KGG	Ministry of Climate Policy and Green Growth (previously EZK)
Small fields	Natural gas production sites in the Netherlands
MR	Middle of the Road (Koersvaste Middenweg in the 2026 IP scenario)
L-gas	Low-calorific gas

LNG	Liquefied natural gas
MCA	Multi-Case Approach, GTS simulation software for network planning based on the pressure drop calculation for the gas grid.
M&R	Metering and regulating station
MR	Ministerial Regulation
National Grid	National TSO for gas and electricity in the UK
NC-CAM	Network code on capacity allocation mechanisms in gas transmission systems
NC TAR	Network code on harmonised transmission tariff structures for gas
NBNL	Netbeheer Nederland: industry organisation for all network and grid operators
NESP	National Energy System Plan
OPEX	Operational expenditure
P50	Indication of probability (see footnote 10 for explanation)
P90	Indication of probability (see footnote 10 for explanation)
P2H	Power-to-Heat
PBL	PBL Netherlands Environmental Assessment Agency
PE value	Aspect of gas quality in the LNG tanks
PESTEL	A methodology that identifies political, economic, social, technical, ecological and legal trends, risks, dilemmas and uncertainties
PV	Photovoltaic(s)
QC	Quality conversion
RBAM	Risk-based asset management
NCS	National Coordination Scheme
RES	Regional Energy Strategies
RFO	Ready for Operation
RNO	Regional network operator
RDN	Regional distribution network
SMR	Steam methane reforming
TenneT	Dutch national grid operator for electricity
TMX	Telemetry system
TSO	Transmission System Operator
TTF	Title Transfer Facility
TWh	Terawatt hour (volume)
TYNDP	Ten Year Network Development Plan
EI	Expansion investment
UGS	Underground gas storage (facility)
RI	Replacement investment
WBE	Wet Bestrijden Energiecrisis (proposed Dutch legislation on combating an energy crisis)
CHP	Combined Heat and Power (also called cogeneration)

Appendix III: List of investment projects

Table III.1: Regular investments Table III.1: Regular investments

								2026		2027		2028		2029		2030	
E/G	Type	Investment	Bottleneck ID	Voltage or pressure level	Type of bottleneck	Type of grid component	Type of statutory duty	Number	Costs	Number	Costs	Number	Costs	Number	Costs	Number	Costs
G	Regular	CRS repl. valves A-486 Rijndijk	R.010087	HPGG	QUA	RS	Gas transmission duty			1							
G	Regular	Repl. inactive ABB AC800 components	R.010132	HPGG	QUA	CS	Gas transmission duty	17		83		83		83		83	
G	Regular	3rd green gas booster at Ommen	E.001100	HPGG	CAP	CS	Connection duty			1							
G	Regular	Repl. SRP/NSP G-gas control unit at Ommen CS	R.001044	HPGG	QUA	CS	Gas transmission duty	1									
G	Regular	Repl. S-486 AS Heenvliet	R.010153	RDN	QUA	Valve	Gas transmission duty					1					
G	Regular	Repl. Beverwijk A-405-A and A-405-B	R.010051	HPGG	QUA	MS	Gas transmission duty			2							
G	Regular	Repl. valve set-up S-7801 Mierlo M&R	R.000496	RDN	QUA	Valve	Gas transmission duty			1							
G	Regular	Repl. GVs A405 Bev CS	R.000456	HPGG	QUA	CS	Gas transmission duty	1									
G	Regular	Repl. valve set-up S-6380 SP Diemen	R.000501	RDN	QUA	Valve	Gas transmission duty			1							
G	Regular	Repl. valve set-up S-5078 Lambertschaag M&R	R.000499	RDN	QUA	Valve	Gas transmission duty			1							
G	Regular	BERK Ravenst 02C starter gas loading emissions	R.000532	HPGG	QUA	CS	Gas transmission duty							1			
G	Regular	BERK Ravenst 01C starter gas loading emissions	R.000530	HPGG	QUA	CS	Gas transmission duty			1							
G	Regular	Repl. v. set-up S-2089 Mijdrecht GRS	R.000502	RDN	QUA	Valve	Gas transmission duty	1									
G	Regular	Energy-eff. measures OAZ CS installations	R.001030	HPGG	QUA	CS	Gas transmission duty			1							
G	Regular	Coupl. &dismt. Biddingh A-570-12 and A-570	R.001015	HPGG	QUA	Pipeline	Gas transmission duty	2									
G	Regular	Repl. v. set-up S-2454 GRS Honselersdijk	R.000503	RDN	QUA	Valve	Gas transmission duty			1							
G	Regular	Repl. Rotterdam S-2166 GRS Alexanderstad	R.000539	RDN	QUA	Valve	Gas transmission duty			1							
G	Regular	Repl. Wildervank S-4852 Vriezenstraat	R.000483	RDN	QUA	Valve	Gas transmission duty			1							
G	Regular	Repl. Enschede S-1415 Kotmanlaan	R.000484	RDN	QUA	Valve	Gas transmission duty	1									
G	Regular	Repl. ODO system Zebra stations	R.010136	RDN	QUA	GRS	Gas transmission duty			7							
G	Regular	Performing HDD A-672 Rilland	R.010139	HPGG	QUA	Pipeline	Gas transmission duty					1					
G	Regular	Reserve biomethane booster	E.001074	RDN	QUA	CS	Gas transmission duty	1									
G	Regular	BERK Beverwijk 2 starter gas loading emissions	R.000529	HPGG	QUA	CS	Gas transmission duty			1							
G	Regular	Repl. v. set-up S-1320 Nijland	R.010151	RDN	QUA	Valve	Gas transmission duty			1							
G	Regular	Repl. v. set-up S-4187 Tjaarddijk	R.010152	RDN	QUA	Valve	Gas transmission duty			1							
G	Regular	Repl. Leidschendam S-2460 Stompw. GRS	R.000504	RDN	QUA	Valve	Gas transmission duty					1					
G	Regular	Repl. Gilze S-3093 Gilze & Rijen	R.000495	RDN	QUA	Valve	Gas transmission duty	1									
G	Regular	Repl. Leeuwarden S-1176 GRS Esdoornstraat	R.000482	RDN	QUA	Valve	Gas transmission duty	1									
G	Regular	BERK Ommen 02C starter gas loading emissions	R.000509	HPGG	QUA	CS	Gas transmission duty			1							
G	Regular	Repl. guard adsorb + mol sieves N_2 A-401	R.010111	HPGG	QUA	N_2	Quality conversion			4							
G	Regular	Repl. S-5569 Botlekweg for Esso	R.010130	RDN	QUA	Valve	Gas transmission duty					1					
G	Regular	Repl. Botlek S-2310 ALCOA GRS	R.010131	RDN	QUA	Valve	Gas transmission duty			1							
G	Regular	Repl. Heerlen S-3095 Heerenweg	R.000490	RDN	QUA	Valve	Gas transmission duty			1							
G	Regular	Repl. v. set-up Warga S-1093 GRS	R.000377	RDN	QUA	Valve	Gas transmission duty	1									
G	Regular	Repl. Assen S-1129 Witterstraat	R.000481	RDN	QUA	Valve	Gas transmission duty	1									
G	Regular	Repl. OAO interface panels	R.010005	HPGG	QUA	CS	Gas transmission duty	7		1		8					
G	Regular	Repl. Vaassen S-1114	R.000485	RDN	QUA	Valve	Gas transmission duty			1							
G	Regular	Repl. OAZ interface panels	R.010006	HPGG	QUA	CS	Gas transmission duty	2		5		7					
G	Regular	Repl. Botlek S-5448 Botlekweg Theemsweg	R.000546	RDN	QUA	Valve	Gas transmission duty			1							
G	Regular	BERK Beverwijk 1 starter gas loading emissions	R.000527	HPGG	QUA	CS	Gas transmission duty			1							
G	Regular	Repl. Rheden S-1053 De Steeg	R.000487	RDN	QUA	Valve	Gas transmission duty	1									

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III.1: Regular investments continued previous page

								2026		2027		2028		2029		2030	
E/G	Type	Investment	Bottleneck ID	Voltage or pressure level	Type of bottleneck	Type of grid component	Type of statutory duty	Number	Costs	Number	Costs	Number	Costs	Number	Costs	Number	Costs
G	Regular	BERK Repl. S-160 HPGG branch Moerkapelle	R.000459	RDN	QUA	Valve	Gas transmission duty			1							
G	Regular	Div. Nijmegen N-578-04 Ooijse Graaf	R.010075	RDN	QUA	Pipeline	Gas transmission duty					1					
G	Regular	Repl. S-2009 GRS Numansdorp RED GRS	R.010115	RDN	QUA	Valve	Gas transmission duty			1							
G	Regular	Repl. S-1169 and dismt. S-1073	R.010143	RDN	QUA	Pipeline	Gas transmission duty			1							
G	Regular	Repl. S-2129 GRS Purmerend Cantekoogweg	R.010116	RDN	QUA	Valve	Gas transmission duty					1					
G	Regular	Repl. Kapelle S-3360 Kapelle branch	R.000519	RDN	QUA	Valve	Gas transmission duty			1							
G	Regular	Repl. Breda valve set-up S-7412 Lijndonk	R.000517	RDN	QUA	Valve	Gas transmission duty			1							
G	Regular	Repl. Fijnaart S-3200 Fijnaart branch	R.000518	RDN	QUA	Valve	Gas transmission duty			1							
G	Regular	Repl. v. set-up S-3399 Vlissingen	R.000520	RDN	QUA	Valve	Gas transmission duty			1							
G	Regular	Repl. Vlissingen S-3405 Oost Souburg	R.000521	RDN	QUA	Valve	Gas transmission duty			1							
G	Regular	Reloc. HVAC and E&I GRS Loosduinen W160	R.000553	RDN	QUA	GRS	Gas transmission duty	1									
G	Regular	BERK Ommen 01C starter gas loading emissions	R.000524	HPGG	QUA	CS	Gas transmission duty	1									
G	Regular	AC drainage fitted with 4G antenna	R.001045	RDN/HPGG	QUA	Pipeline	Gas transmission duty	624									
G	Regular	DLI - CS Alphen HPGG valve set-up	R.000338	HPGG	QUA	CS	Gas transmission duty			1							
G	Regular	Physical security front grounds Zuidbroek	R.010009	HPGG	QUA	N2	Quality conversion	1									
G	Regular	4G modem in rectifiers/DC drainage	R.010069	HPGG	QUA	Pipeline	Gas transmission duty	850									
G	Regular	Repl. 2x SNB 06N Ommen A-401	R.000475	HPGG	QUA	CS	Gas transmission duty	2									
G	Regular	Repl. Maasbracht Z-292 Clauscentrale E-r	R.000408	HPGG	QUA	GRS	Gas transmission duty			1							
G	Regular	Repl. OAM interface panels	R.010007	HPGG	QUA	CS	Gas transmission duty					4					
G	Regular	Repl. potable water system BW	R.001102	HPGG	QUA	Other	Gas transmission duty			1							
G	Regular	Feed-off controller GRSs: replacement HON505	R.010053	RDN	QUA	GRS	Gas transmission duty			1							
G	Regular	Repl. GVs W-288 Botlek	R.000560	RDN	QUA	GRS	Gas transmission duty	1									
G	Regular	Repl. GVs W-417 Botlek Nobian	R.000559	RDN	QUA	GRS	Gas transmission duty	1									
G	Regular	Repl. GVs W-269 Zwijndrecht	R.000558	RDN	QUA	GRS	Gas transmission duty	1									
G	Regular	Repl. GVs W-017 ECT Maasvlakte	R.000556	RDN	QUA	GRS	Gas transmission duty	1									
G	Regular	Repl. controller W-302 Amsterdam Noord	R.010127	RDN	QUA	GRS	Gas transmission duty	1									
G	Regular	Repl. GVs & PSV W-474 Pernis	R.000557	RDN	QUA	GRS	Gas transmission duty	1									
G	Regular	BERK Spijk 3 starter gas loading emissions	R.000525	HPGG	QUA	CS	Gas transmission duty			1							
G	Regular	Repl. actuators Oudelandert	R.010001	RDN	QUA	MS	Gas transmission duty			5							
G	Regular	BERK Spijk 1/2 starter gas loading emissions	R.000515	HPGG	QUA	CS	Gas transmission duty			1		1					
G	Regular	US flow meters at M&R stations	R.010140	RDN	QUA	M&R	Gas transmission duty			15		15		15			

Table III.2: Connections and diversions

E/G	Type	Investment	Bottleneck ID	Station/connection location	Voltage or pressure level	Type of bottleneck	Type of grid component	Bottleneck description	FID (year)	IBN (year)	Costs 2026	Costs 2027	Costs 2028	Costs 2029	Costs 2030
G	Connection	New connection Equinor Eemshaven	E.000176	TBD	HPGG	CAP	Pipeline	Connection request	2026	2028					
G	Connection	Connect. Harlingen SFP biomethane	E.000177	N-725	RDN	CAP	Pipeline	Connection request	2025	2026					
G	Connection	Connect. Heeten N-557-30 Biogas B biomethane	E.000191	N-557-30	RDN	CAP	Pipeline	Connection request	2025	2026					
G	Connection	New biomethane connect. Axel (Van Alphen)	E.000193	A-530	RDN	CAP	Pipeline	Connection request	2025	2026					
G	Connection	Connect. Zevenellen Z-513-01 VTTI biomethane	E.000195	Z-513-01	RDN	CAP	Pipeline	Connection request	2025	2028					
G	Connection	Connection Binding Solutions Maasvlakte	E.000197	TBD		CAP	Pipeline	Connection request	2026	2028					
G	Connection	Biomethane connection D4 Amsterdam	E.000513	TBD	RDN	CAP	Pipeline	Connection request	2027	2030					
G	Connection	New connect. Nature energy Den Helder	E.000515	N-540-64		CAP	Pipeline	Connection request	2025	2028					
G	Connection	Connect. Ennatuurlijk at Z-300 Geertuidenb	E.001000	Z-300	RDN	CAP	Pipeline	Connection request	2026	2027					
G	Connection	New biomethane connect. Moerdijk Attero	E.001001	Z-529-27	RDN	CAP	Pipeline	Connection request	2026	2028					
G	Connection	New biomethane connect. Moerdijk BMC	E.001012	Z-529-27	RDN	CAP	Pipeline	Connection request	2026	2028					
G	Connection	Capacity expansion Tata Steel	E.001019	TBD	HPGG	CAP	Pipeline	Connection request	2026	2028					
G	Connection	New connect. IDP TinTin BV (Advario)	E.001020	W-481	RDN	CAP	Pipeline	Connection request	2027	2029					
G	Connection	New connect. Air Products Vlissingen	E.001025	TBD	RDN	CAP	Pipeline	Connection request	2026	2028					
G	Connection	New connect. Air Products Europoort	E.001026	TBD	RDN	CAP	Pipeline	Connection request	2026	2027					
G	Connection	New connection Delfzijl Eemsgas B.V.	E.001031	TBD	RDN	CAP	Pipeline	Connection request	2026	2028					
G	Connection	New connection ETT Europoort Moezelweg	E.001073	TBD	RDN	CAP	Pipeline	Connection request	2026	2028					
G	Connection	Rendo connect. GGVL-GZI A-584	E.001099	A-584	HPGG	CAP	Pipeline	Connection request	2026	2027					
G	Diversion	Div. W-570-15 Sportstraat Koog a d Zaan	N.001000	W-570-15	RDN	QUA	Pipeline	Diversion request	2026	2028					
G	Diversion	Div. Well Z-541-11 Maaspark Kampergeul	R.000551	Z-541-11	RDN	QUA	Pipeline	Diversion request	2025	2027					
G	Diversion	Rerouting GRS Trekvliet W097	R.000552	W-097	RDN	QUA	GRS	Diversion request	2026	2029					
G	Diversion	Diversion Z-523-01 Heijvar Berlicum	R.001031	Z-523-01	RDN	QUA	Pipeline	Diversion request	2026	2028					
G	Diversion	Div. Oeffelt Z-518-01 'Ruimte voor Maas'	R.001094	Z-518-01	RDN	QUA	Pipeline	Diversion request	2025	2027					
G	Diversion	Div. Rossum N-531-12 Natura 2000 AVAV	R.001103	N-531-12	RDN	QUA	Pipeline	Diversion request	2026	2028					
G	Diversion	Div. Tusveld N-528-70	R.001105	N-528-70	HPGG	QUA	Pipeline	Diversion request	2026	2027					
G	Diversion	Div. Druten N-575-52 town hall drainage	R.010021	N575-52	RDN	QUA	Pipeline	Diversion request	2026	2028					
G	Diversion	Div. Koog ad Zaan conn. pipeline W373 Tate	R.010068	W-373	RDN	QUA	Pipeline	Diversion request	2026	2027					
G	Diversion	Div. Enschede N-528-50 Oostweg	R.010147	N-528-50	RDN	QUA	Pipeline	Diversion request	2026	2027					

Appendix IV: Overview of bottlenecks

For the assessment of GTS' draft 2024 IP, ACM has drawn up the document Kader Informatiebehoefte Investeringsplannen 2026 [2026 Information Requirement Framework for Investment Plans] which states that GTS must show the bottlenecks resolved with OPEX and bottlenecks which are accepted. Below GTS shows the required overview of bottlenecks.

- Bottlenecks resolved with OPEX
- Accepted bottlenecks

Table IV.1: Overview of OPEX bottlenecks

E/G	Type	Investment	Bottleneck ID	Voltage or pressure level	Type of bottleneck	Type of grid component	Type of statutory duty
G	OPEX	Incr. height mol sieves exhaust pipes N2Ommen	M.000122	HPGG	QUA	N2	Quality conversion
G	OPEX	Assist BERK emission team with pos. leaks	M.000156	RDN	QUA	GRS	Gas transmission duty
G	OPEX	Resolve sheet pile contact W-534-01 Osdorp	M.000158	RDN	QUA	Pipeline	Gas transmission duty
G	OPEX	BERK excavations ext. leaks	M.000159	RDN	QUA	Pipeline	Gas transmission duty
G	OPEX	Resolve CP issues A-168 M&R Leusden	M.000160	HPGG	QUA	Pipeline	Gas transmission duty
G	OPEX	Resolve CP issues A-159 M&R Hilversum	M.000161	HPGG	QUA	Pipeline	Gas transmission duty
G	OPEX	BERK resolve leak BeverW S-149 HV24&EV11	M.000162	HPGG	QUA	Pipeline	Gas transmission duty
G	OPEX	Minor soil cover issues 2026	M.000217	RDN	QUA	Pipeline	Gas transmission duty
G	OPEX	Resolve intg. issue N-551 Zwolle	M.000223	RDN	QUA	Pipeline	Gas transmission duty
G	OPEX	Inspect bridge pipeline N-502-39-KR-005 Finkum	M.000224	RDN	QUA	Pipeline	Gas transmission duty
G	OPEX	Inspect pipeline N-501-01 Bolsward	M.000225	RDN	QUA	Pipeline	Gas transmission duty
G	OPEX	Removal Denekamp N-531-12-KR-007 bridge pipeline	M.000226	RDN	QUA	Pipeline	Gas transmission duty
G	OPEX	Inspect W-533-01-KR-018 Bussum	M.000227	RDN	QUA	Pipeline	Gas transmission duty
G	OPEX	Repair bridge pipeline coating Shell Pernis	M.000228	RDN	QUA	Pipeline	Gas transmission duty
G	OPEX	Ass. intg. pipel. N-505-90-R-004 Damwoude	M.000229	RDN	QUA	Pipeline	Gas transmission duty
G	OPEX	Ass. intg. pipel. N-502-38-KR-002 Arum	M.000230	RDN	QUA	Pipeline	Gas transmission duty
G	OPEX	Assess integrity bridge pipeline W 52	M.000231	RDN	QUA	Pipeline	Gas transmission duty
G	OPEX	Ass. intg. pipel. W522-05-KR-002 s-GZ	M.000232	RDN	QUA	Pipeline	Gas transmission duty
G	OPEX	Ass. intg. pipeline W-521-01 B'hoek	M.000233	RDN	QUA	Pipeline	Gas transmission duty
G	OPEX	Raise S-2330 ASV-GRS Oudewater	M.000234	RDN	QUA	Valve	Gas transmission duty
G	OPEX	Ass. intg. pipel. N-528-70-KR-025 Almelo	M.000237	RDN	QUA	Pipeline	Gas transmission duty
G	OPEX	Adj. jacketed piping A550 Heerhugowrd	M.000245	HPGG	QUA	Pipeline	Gas transmission duty
G	OPEX	Resolve pipeline issues GRS W-147 IJmuiden	M.001005	RDN	QUA	GRS	Gas transmission duty
G	OPEX	Make compressor enclosure airtight	M.001006	HPGG	QUA	CS	Gas transmission duty
G	OPEX	Cancel closure A-123 MR Driehuis	M.001010	HPGG	QUA	MR	Gas transmission duty
G	OPEX	Dismt. compressor unit 105 Ravenstein	M.001012	HPGG	CAP	CS	Gas transmission duty
G	OPEX	Adj. OAZ A-520 GL S-060 S-062	M.001015	HPGG	QUA	Pipeline	Gas transmission duty
G	OPEX	Repair exhaust insulation Solar A-405 WM	M.001019	HPGG	QUA	CS	Gas transmission duty
G	OPEX	PIG-26 OAO area	M.001030	HPGG	QUA	Pipeline	Gas transmission duty
G	OPEX	PIG-26 OAW area	M.001031	HPGG	QUA	Pipeline	Gas transmission duty
G	OPEX	PIG-26 OAM area	M.001032	HPGG	QUA	Pipeline	Gas transmission duty
G	OPEX	PIG-26 OAN area	M.001033	HPGG	QUA	Pipeline	Gas transmission duty
G	OPEX	PIG-26 OAZ area	M.001034	HPGG	QUA	Pipeline	Gas transmission duty

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IV.1: Overview of OPEX bottlenecks continued previous page

E/G	Type	Investment	Bottleneck ID	Voltage or pressure level	Type of bottleneck	Type of grid component	Type of statutory duty
G	OPEX	Dismantle W-537-46/47/91 and W-544-03	M.001039	RDN	QUA	Pipeline	Gas transmission duty
G	OPEX	Subsidence S-131 de Eeker	M.001040	HPGG	QUA	Valve	Gas transmission duty
G	OPEX	Construction costs Pigging 2026	M.001042	HPGG	QUA	Pipeline	Gas transmission duty
G	OPEX	PIG-27 Pipeline Inspection Programme 2027	M.001052	HPGG	QUA	Pipeline	Gas transmission duty
G	OPEX	PIG-28 Pipeline Inspection Programme 2028	M.001053	HPGG	QUA	Pipeline	Gas transmission duty
G	OPEX	Dismt. Rijnmond S-5556 Cargill Entrance	M.001060	RDN	QUA	Valve	Gas transmission duty
G	OPEX	Leak Detection and Repair Programme	M.001061	HPGG	QUA	Valve	Gas transmission duty
G	OPEX	Rerouting GC A-130 Vondelingenplaat	M.001068	HPGG	QUA	GRS	Gas transmission duty
G	OPEX	Adjust Velsen jacketed piping A-538	M.001069	HPGG	QUA	Pipeline	Gas transmission duty
G	OPEX	Dismt. ICs and pipeline section Hansweert	M.001076	HPGG	QUA	Pipeline	Gas transmission duty
G	OPEX	Decommissioning CS Zweekhorst	M.001089	HPGG	CAP	CS	Gas transmission duty
G	OPEX	Retaining walls blending station C-Ommen	M.001090	HPGG	QUA	MS	Gas transmission duty
G	OPEX	Dismt. valve set-up Tjuchem S-479, S-865, A-514	E.000365	HPGG	CAP	Valve	Gas transmission duty
G	OPEX	Dismt. valve set-up Suameer S-4420 Solcamastr.	R.000595	RDN	QUA	Valve	Gas transmission duty
G	OPEX	Dismt. v. set-up S-5580 Theemsweg	R.000600	RDN	QUA	Valve	Gas transmission duty
G	OPEX	Dismt. S-5930 Rietveldsepad Alphen a/dR	R.000601	RDN	QUA	Valve	Gas transmission duty
G	OPEX	Dismt. valve set-up S-5553 Botlekweg/Welplaatweg	R.000606	RDN	QUA	Valve	Gas transmission duty
G	OPEX	Dismt. mult. V. set-ups N-355, N-501-42 Joure ring road	R.000661	RDN	QUA	Valve	Gas transmission duty
G	OPEX	Dismantle S-6365 Hilversum	R.000676	RDN	QUA	Valve	Gas transmission duty
G	OPEX	DLI - CS Ommen G-gas dismt. 1st step	R.000683	HPGG	CAP	CS	Gas transmission duty
G	OPEX	Dismt. S-6363 and S-6358 Noorderwaaldijk	R.000735	RDN	QUA	Valve	Gas transmission duty
G	OPEX	Dismantle S-6079	R.000754	RDN	QUA	Valve	Gas transmission duty
G	OPEX	Dismantling costs S-5561 CABOT	R.000758	RDN	CAP	Valve	Gas transmission duty
G	OPEX	Dismt. costs S-6428 Tiel	R.000761	RDN	CAP	Valve	Gas transmission duty
G	OPEX	Dismt. costs S-6276 Nieuwegein	R.000763	RDN	CAP	Valve	Gas transmission duty
G	OPEX	Dismt. costs S-3072 Bergeijk	R.000776	RDN	CAP	Valve	Gas transmission duty
G	OPEX	Disconnect bypass Eemskanaal	R.000977	HPGG	CAP	Valve	Gas transmission duty
G	OPEX	Dismantle Putten S-9855 and S-9857	R.000981	RDN	QUA	Valve	Gas transmission duty
G	OPEX	DLI - dismantle Alphen CS	R.000990	HPGG	CAP	CS	Gas transmission duty
G	OPEX	DLI - dismantle Oldeboorn CS	R.000991	HPGG	CAP	CS	Gas transmission duty
G	OPEX	DLI - dismantle MS-A Ommen	R.000997	HPGG	CAP	MS	Gas transmission duty
G	OPEX	Dismt. Vondelingenplt S-5635 Petroleumweg	R.001007	RDN	QUA	Valve	Gas transmission duty
G	OPEX	Dismt. S7763 S7425 and resolve CP issue Z-519-01	R.001008	RDN	QUA	Valve	Gas transmission duty
G	OPEX	Dismantle A-577 Elim-Schoonebeek	R.001010	HPGG	CAP	Pipeline	Gas transmission duty
G	OPEX	Dismt. Rhoon S-5606 and Hoogvliet S-5631	R.001012	RDN	QUA	Valve	Gas transmission duty
G	OPEX	Dismantle A-510-09/S-649 Harculo	R.001013	HPGG	CAP	Pipeline	Gas transmission duty
G	OPEX	Dismt. Botlek S-5564 DSM Chem Rosilco	R.001014	RDN	QUA	Valve	Gas transmission duty
G	OPEX	Dismt. Biddingh A-570-12 and A-570	R.001067	HPGG	CAP	Pipeline	Gas transmission duty
G	OPEX	Dismt. BBGA A-672 Nieuwdorp S-950 and S-949	R.001070	HPGG	CAP	Pipeline	Gas transmission duty
G	OPEX	Dismt. biometh. RDN conn. Axel–Ossendrecht	R.001078	RDN	CAP	Pipeline	Gas transmission duty
G	OPEX	Dismt. Sint Oedenrode S-7707	R.001080	RDN	QUA	Valve	Gas transmission duty
G	OPEX	Dismt. Bergschenh. W-433 and S-5956/S-2433	R.001082	RDN	CAP	GRS	Gas transmission duty
G	OPEX	Dismt. M&R cabinet Zoeterwoude	R.001084	HPGG	QUA	MR	Gas transmission duty
G	OPEX	Dismt. Doetinchem S-9669 S-9671	R.001088	RDN	CAP	Valve	Gas transmission duty
G	OPEX	Dismt. v set-up S-5117 AMS Melkweg sportpark	R.001110	RDN	QUA	Valve	Gas transmission duty

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IV.1: Overview of OPEX bottlenecks continued previous page

E/G	Type	Investment	Bottleneck ID	Voltage or pressure level	Type of bottleneck	Type of grid component	Type of statutory duty
G	OPEX	Dismt. valve set-up S-6308 Veenendaal	R.001111	RDN	QUA	Valve	Gas transmission duty
G	OPEX	Dismt. valve set-up S-5031 Zaandijk	R.001112	RDN	QUA	Valve	Gas transmission duty
G	OPEX	Dismt. valve set-up S-5094 Breezand	R.001113	RDN	QUA	Valve	Gas transmission duty
G	OPEX	Repair coating and remove pig loc. S-467	R.010114	HPGG	QUA	Valve	Gas transmission duty
G	OPEX	Issue control Wadleidingen 2026	M.001121	RDN	QUA	Pipeline	Gas transmission duty

Table IV.2: Overview of accepted bottlenecks

E/G	Type	Investment	Bottleneck ID	Voltage or pressure level	Type of bottleneck	Type of grid component
G	Accpt. bottleneck	R.000157 - Repl. leak v set-up S-281 Hummelo	R.000157	HPGG	QUA	Valve
G	Accpt. bottleneck	R.000217 - Repl. S-3211 Nedschroef and dismtl. Z-211	R.000217	RDN	QUA	Valve
G	Accpt. bottleneck	R.000327 - Repl. Born S-3271, issues Z-271 Nedcar	R.000327	RDN	QUA	Valve
G	Accpt. bottleneck	R.000401 repl. v. set-up S-3461 RED Helmond	R.000401	RDN	QUA	Valve
G	Accpt. bottleneck	R.000480 - Repl. GRS v set-up Tollebeek S-1362	R.000480	RDN	QUA	Valve
G	Accpt. bottleneck	R.000486 - Repl. Doetinchem S-9670 Lobberik	R.000486	RDN	QUA	Valve
G	Accpt. bottleneck	R.000488 - Repl. Rheden S-9408 Lentsesteeg	R.000488	RDN	QUA	Valve
G	Accpt. bottleneck	R.000489 - Repl. Wolfheze S-9742 De Slenk	R.000489	RDN	QUA	Valve
G	Accpt. bottleneck	R.000492 BERK repl. GV-01 Berlicum S-064 Rode Sok	R.000492	HPGG	QUA	Valve
G	Accpt. bottleneck	R.000494 - Repl. Boxtel S-7618 Witvensedijk Esch	R.000494	RDN	QUA	Valve
G	Accpt. bottleneck	R.000504 - Repl. Leidschendam S-2460 Stompwijk GRS	R.000504	RDN	QUA	Valve
G	Accpt. bottleneck	R.000518 - Repl. Fijnaart S-3200 Fijnaart Aft	R.000518	RDN	QUA	Valve
G	Accpt. bottleneck	R.000520 - Repl. v. set-up S-3399 Vlissingen	R.000520	RDN	QUA	Valve
G	Accpt. bottleneck	R.000521 - Repl. Vlissingen S-3405 Oost Souburg	R.000521	RDN	QUA	Valve
G	Accpt. bottleneck	R.000536 - Repl. Purmerend S-5002 vanIJzendijkstraat	R.000536	RDN	QUA	Valve
G	Accpt. bottleneck	I.014816.01 - Repl. compressed air system ZB 1	I.014816.01	HPGG	QUA	MS
G	Accpt. bottleneck	A-593 Make (local) scraper trap mobile	bn A-593	HPGG	QUA	Pipeline
G	Accpt. bottleneck	Repl. S-6261 AS Ruigenweidseweg	bn S-6261	RDN	QUA	Valve
G	Accpt. bottleneck	Dismantle S-5007 Rijksweg no. 6	bn S-5007	RDN	QUA	Valve
G	Accpt. bottleneck	Replace S-5033 Museumplein	bn S-5033	RDN	QUA	Valve
G	Accpt. bottleneck	Repl. S-5112 AS Oudeweg	bn S-5112	RDN	QUA	Valve
G	Accpt. bottleneck	Replace S-8210 Asten branch	bn S-8210	RDN	QUA	Valve
G	Accpt. bottleneck	Replace S-4544 Oosterhornkanaal	bn S-4544	RDN	QUA	Valve
G	Accpt. bottleneck	Replace S-4130 Ruttenseweg	bn S-4130	RDN	QUA	Valve
G	Accpt. bottleneck	Replace S-1476 GRS Lemmer	bn S-1476	RDN	QUA	Valve
G	Accpt. bottleneck	Replace S-9396 Rijssen Noord	bn S-9396	RDN	QUA	Valve
G	Accpt. bottleneck	Replace S-9799 Koekenveld	bn S-9799	RDN	QUA	Valve
G	Accpt. bottleneck	Replace S-9322 Molendijk	bn S-9322	RDN	QUA	Valve

Appendix V: Investment projects completed in 2023 and 2024

Table V.1: List of completed investment projects – Regular investment

E/G	Investment ID	Bottleneck ID	Investment classification	Type of bottleneck	Voltage or pressure level	Type of grid component	Estimated number	Completed number	Estimated total costs	Actual total costs	Delta	Explanation
G	I-014815-01 Repl. Enschede A122 IK A646 M&R	N/A-new	Regular	Quality	RDN	MR	N/A	1	N/A	220.609	100%	Unanticipated bottleneck
G	I-014864-01 Repl. bend Z-503-01 Nagelbeek S-8705	N/A-new	Regular	Quality	RDN	Pipeline	N/A	1	N/A	2.983	100%	Unanticipated bottleneck
G	Contgcy. sit. Z-529-16 Shell Moerdijk	N/A-new	Regular	Quality	RDN	GRS	N/A	1	N/A	1.795.602	100%	Unanticipated bottleneck
G	I-014847-01 Repl. cap beam Vlaardingervaart A-517	N/A-new	Regular	Quality	HPGG	Pipeline	N/A	1	N/A	75.604	100%	Unanticipated bottleneck
G	Repl. heating system GRS Spijk N-733	N/A-new	Regular	Quality	RDN	GRS	N/A	1	N/A	137.919	100%	Unanticipated bottleneck
G	I.013761 - Systematic structural maintenance OIO 2022	N/A-IP20	Regular	Quality	not reported in IP	CS	1	1	1.050.000	5.797.115	452%	Construction costs higher than estimated: wider scope of works
G	I.013788 - LNG PS Renovation of security syst.	N/A-IP20	Regular	Quality	not reported in IP	LNG	1	1	1.050.000	2.441.466	133%	Construction costs higher than estimated: long permit times and wider scope of works
G	I.013808 - Replacement of analogue security cameras OI	N/A-IP20	Regular	Quality	not reported in IP	CS	multiple	multiple	1.350.000	1.906.940	41%	Construction costs higher than estimated: wider scope of works and price effects
G	I.013886 - Replacement electric Rotork actuators	N/A-IP20	Regular	Quality	not reported in IP	CS	1	1	1.900.000	1.231.895	-35%	Construction costs lower than anticipated: smaller scope of works
G	I.013887 - Systematic maint. HVAC OIO 2021	N/A-IP20	Regular	Quality	not reported in IP	CS	1	1	1.400.000	2.076.655	48%	Construction costs higher than estimated: wider scope of works and price effects
G	I.013905 - Install instr. air syst. for contr. v. MS BW	N/A-IP20	Regular	Quality	not reported in IP	MS	1	1	340.000	533.125	57%	Construction costs higher than estimated
G	I.013208 - Modifications for pigging of A-601	N/A-IP20	Regular	Quality	not reported in IP	Pipeline	1	1	1.200.000	2.575.563	115%	Construction costs higher than estimated: wider scope of works
G	I.013660 - Partial renovation of Voorschoten GRS W-003	N/A-IP20	Regular	Quality	not reported in IP	GRS	1	1	575.000	770.581	34%	Construction costs higher than estimated: wider scope of works
G	I.013700 - Replacement S-5458 Voslaan OLWR	N/A-IP20	Regular	Quality	not reported in IP	Valve	1	1	700.000	1.107.419	58%	Construction costs higher than estimated: drainage measures
G	I.013704 - Systematic civil engineering maintenance OLWR 2021	N/A-IP20	Regular	Quality	not reported in IP	Valve	1	1	758.400	1.360.594	79%	Construction costs higher than estimated: price effects
G	I.013735 - GNIPA-S-4365 Westerdijk	N/A-IP20	Regular	Quality	not reported in IP	Valve	1	1	476.000	616.203	29%	Construction costs higher than estimated: adverse weather
G	I.013868 - Repl. valve set-up Graaf Floris V S-6214	N/A-IP20	Regular	Quality	not reported in IP	Valve	1	1	775.000	787.618	2%	
G	I.013913 - Repl. v. set-up Winschoten S-4857 Veenhoeve	N/A-IP20	Regular	Quality	not reported in IP	Valve	1	1	525.000	864.317	65%	Construction costs higher than estimated: loss of economies of scope
G	I.013928 - Repl. v. set-up S-2151 GRS Rhenen	N/A-IP20	Regular	Quality	not reported in IP	Valve	1	1	620.000	616.887	-1%	
G	I.013929 - Repl. Moxa switches for Cisco OI	N/A-IP20	Regular	Quality	not reported in IP	CS	multiple	multiple	890.000	1.080.653	21%	
G	I.013961 - Aftercare MAG2 Redrainage - Crop damage	N/A-IP20	Regular	Quality	not reported in IP	Pipeline	1	1	750.000	323.047	-57%	Construction costs lower than anticipated: smaller scope of works
G	I.013662 - Systematic civil engineering maintenance OLWW 2021	N/A-IP20	Regular	Quality	not reported in IP	Valve	1	1	646.700	1.053.632	63%	Construction costs higher than estimated: price effects
G	I.013794 - Repl. Schinnen S-8703/4 Oudekerk OLZB	N/A-IP20	Regular	Quality	not reported in IP	Valve	1	1	650.000	904.094	39%	Construction costs higher than estimated: wider scope of works and price effects
G	I.013909 - Repl. Roermond S-3109 paper mill	N/A-IP20	Regular	Quality	not reported in IP	Valve	1	1	750.000	893.999	19%	
G	I.013930 - Repl. Renkum S-9762 De Buunder	N/A-IP20	Regular	Quality	not reported in IP	Valve	1	1	750.000	567.882	-24%	
G	I.013977 - Repl. v. set-up Rottevalle S-4399	N/A-IP20	Regular	Quality	not reported in IP	Valve	1	1	400.000	474.056	19%	
G	I.012571 - GNIPA-1701 Wanneperveen - Tollebeek	N/A-IP20	Regular	Quality	not reported in IP	Valve	multiple	multiple	2.859.800	3.213.275	12%	
G	I.013218 - EVHI Replacement 2018 and 2019	N/A-IP20	Regular	Quality	not reported in IP	GRS	multiple	multiple	3.566.539	4.085.722	15%	
G	I.013248 - Upgrading alarm panels BW and WM OIW	N/A-IP20	Regular	Quality	not reported in IP	CS	2	2	198.800	350.797	76%	Construction costs higher than estimated: wider scope of works
G	I.013602 - TO-OP Small flow odorisation OL	N/A-IP20	Regular	Quality	not reported in IP	GRS	multiple	multiple	1.491.700	383.948	-74%	Construction costs lower than anticipated: smaller scope of works
G	I.013661 - EVHI replacement 2020	N/A-IP20	Regular	Quality	not reported in IP	GRS	multiple	multiple	1.964.500	2.653.570	35%	Construction costs higher than estimated: price increases and asbestos survey
G	I.013932 - Repl. Veghel Z-542-10 N279 NCB-laan	N/A-IP20	Diversion	Third-party diversion request	RDN	Pipeline	N/A	1	792.000	1.770.727	124%	Construction costs higher than estimated: wider scope of works and price effects
G	I.013876 - GUD connect. Rysum H-gas	N/A-IP20	Connections	Capacity	HPGG	Valve	N/A	N/A	550.000	347.586	-37%	Construction costs lower than anticipated: economies of scope
G	I.013983 - New connect. Argent Energy Adam	N/A-IP20	Connections	Capacity	RDN	multiple	1	1	3.000.000	4.092.188	36%	Construction costs higher than estimated: wider scope of works

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V.1: List of completed investment projects – Regular investments continued previous page

E/G	Investment ID	Bottleneck ID	Investment classification	Type of bottleneck	Voltage or pressure level	Type of grid component	Estimated number	Completed number	Estimated total costs	Actual total costs	Delta	Explanation
G	I.013667 - Euroloop connection	N/A-IP20	Connections	Capacity	HPGG	multiple	1	1	1.892.000	2.004.025	6%	
G	I.014456 - V unspecifiable CAPEX for O 2023	AGREGATIE014456G	Regular	Quality	N/A	multiple	N/A	N/A	650.000	1.170.353	80%	More hours in V dept. than anticipated
G	I.014455 - FP unspecifiable CAPEX-active 2023	AGREGATIE014455	Regular	Quality	N/A	multiple	N/A	N/A	588.000	435.886	-26%	More hours in FP dept. than anticipated
G	I.014447 - Repl. v. set-up Hoofddorp S-5996 S-5997	AGREGATIE014447	Regular	Quality	RDN	Valve	multiple	multiple	750.000	1.104.443	47%	Construction costs higher than estimated: wider scope of works
G	I.014441 - Repl. turbine gas meters > 30 years in 2023	AGREGATIE014441	Regular	Quality	RDN	GRS	multiple	multiple	1.071.000	1.088.881	2%	
G	I.014440 - Repl. turbine gas meters > 30 years in 2022	AGREGATIE014440	Regular	Quality	RDN	GRS	multiple	multiple	500.900	345.441	-31%	Construction costs lower than anticipated: smaller scope of works
G	I.014434 - Repl. upgr. WIROX Wobbe Index meas. device	AGREGATIE014434	Regular	Quality	HPGG	GRS	multiple	multiple	710.800	1.069.325	50%	Construction costs higher than estimated: wider scope of works
G	I.014421 - Install. AC drains National 2022	AGREGATIE014421	Regular	Quality	RDN	Pipeline	multiple	multiple	1.546.100	2.182.563	41%	Construction costs higher than estimated: wider scope of works and long permit times
G	I.014363 - Systematic civil engineering maintenance OLO 2022	AGREGATIE014363	Regular	Quality	RDN	Valve	multiple	multiple	905.300	1.330.342	47%	Construction costs higher than estimated: price effects
G	I.013956 - Repl. Kessel S-3263 and S-8314	AGREGATIE013956	Regular	Quality	RDN	Valve	multiple	multiple	1.500.000	1.673.630	12%	
G	Repl. components N-170 Beetgumermolen	014810	Regular	Quality	Other	GRS	1	1	241.639	236.678	-2%	
G	Repl. downstr. valves Z-159 Den Bosch	014743	Regular	Quality	Other	GRS	1	1	75.000	69.845	-7%	
G	Repl. Angerlo S-032 HV 26 scraper trap valve	014731	Regular	Quality	HPGG	Valve	1	1	1.051.550	943.173	-10%	
G	CSR, prevent gas emissions Rhoon and Tusschenkl	014724	Regular	Quality	Other	RS	2	2	780.000	491.410	-37%	Construction costs lower than anticipated: smaller scope of works
G	Repl. monitoring W-139 Uithoorn	014714	Regular	Quality	Other	GRS	1	1	144.073	112.991	-22%	
G	Refurb. AP security system (GTS' part!)	014653	Regular	Quality	Other	MS	1	1	217.940	245.965	13%	
G	Repl. heating system GRS W-299	014651	Regular	Quality	Other	GRS	1	1	183.600	278.761	52%	Higher costs than anticipated: longer project lead time
G	Repl. S-5477 Ouderkerk a/d IJssel	014626	Regular	Quality	RDN	Valve	1	1	984.236	795.935	-19%	
G	Repl. S-5481 Reeweg/Dordrecht	014625	Regular	Quality	RDN	Valve	1	1	788.806	672.435	-15%	
G	Repl. S-2369 and S-5479 Lekkerkerk	014623	Regular	Quality	RDN	Valve	2	2	1.706.327	1.572.107	-8%	
G	Repl. regulators GRS Zeist W-333	014617	Regular	Quality	Other	GRS	1	1	119.283	232.582	95%	Construction costs higher than estimated
G	CSR measure Hofdijk S-756 stop gas emissions	014615	Regular	Quality	HPGG	RS	1	1	315.400	403.078	28%	Construction costs higher than estimated: wider scope of works
G	Repl. Zwolle S-9830 Kamperweg	014610	Regular	Quality	RDN	Valve	1	1	739.000	765.525	4%	
G	Repl. GVs line 1 and 2 W-244 Cabot	014609	Regular	Quality	Other	GRS	1	1	163.000	163.411	0%	
G	Repl. Zevenaar S-9709 Babberich	014603	Regular	Quality	RDN	Valve	1	1	675.340	1.026.788	52%	Construction costs higher than estimated: price effects
G	Replacement S-3217 St. Oedenrode	014596	Regular	Quality	RDN	Valve	1	1	838.000	838.098	0%	
G	Repl. S-3184 Waalwijk	014595	Regular	Quality	RDN	Valve	1	1	648.500	648.500	0%	
G	Repl. S-3192 Veghel 1 Evertsen	014594	Regular	Quality	RDN	Valve	1	1	817.700	805.247	-2%	
G	Repl. v. set-up S-3180 Vlijmen	014593	Regular	Quality	RDN	Valve	1	1	1.135.798	1.157.774	2%	
G	Repl. heating system Spijk	014592	Regular	Quality	Other	CS	1	1	217.600	322.051	48%	Construction costs higher than estimated
G	Repl. valve 024/025 s-263 Noordbroek	014590	Regular	Quality	HPGG	Valve	1	1	489.800	493.385	1%	
G	Repl. Schaesberg S-8715 branch	014587	Regular	Quality	RDN	Valve	1	1	842.300	957.708	14%	
G	Repl. Workum S-4128 De Goede Verwachting	014545	Regular	Quality	RDN	Valve	1	1	528.500	703.053	33%	Construction costs higher than estimated: drainage measures
G	Repl. 't Harde S-1212 GRS 't Harde	014542	Regular	Quality	RDN	Valve	1	1	835.559	824.758	-1%	
G	CDM Veeningen N-526-10-KR-015/016	014537	Regular	Quality	Other	Pipeline	1	1	1.053.730	1.064.413	1%	
G	I.014532 - Repl. GVs line 1 and 2 W-045 Enci	014532	Regular	Quality	RDN	GRS	1	1	140.000	116.974	-16%	
G	I.014531 - Repl. components N-027 Haulerwijk	014531	Regular	Quality	RDN	GRS	1	1	150.000	189.448	26%	Construction costs higher than estimated: price effects
G	I.014526 - Repl. components GRS N-278 Duiven	014526	Regular	Quality	RDN	GRS	1	1	85.000	77.039	-9%	
G	Adjust ventilation cap. in office and field	014499	Regular	Quality	Other	multiple	1	1	422.905	545.329	29%	Construction costs higher than estimated: wider scope of works
G	Repl. bridge pipeline Helmond Z-540-01	014497	Diversion	Quality	Other	Pipeline	1	1	466.376	588.615	26%	Construction costs higher than estimated
G	I.014496 - Repl. Gronsveld S-3053 GRS Gronsveld	014496	Regular	Quality	RDN	Valve	1	1	550.000	819.671	49%	Construction costs higher than estimated: price effects
G	I.014494 - Repl. S-5581 M&R station Abbenbroek	014494	Regular	Quality	RDN	Valve	1	2	750.000	2.483.186	231%	Construction costs higher than estimated: wider scope of works due to combining projects and price effects
G	I.014491 - Repl. valves N-476 Lemmer	014491	Regular	Quality	RDN	GRS	multiple	multiple	112.000	114.927	3%	

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V.1: List of completed investment projects – Regular investments continued previous page

E/G	Investment ID	Bottleneck ID	Investment classification	Type of bottleneck	Voltage or pressure level	Type of grid component	Estimated number	Completed number	Estimated total costs	Actual total costs	Delta	Explanation
G	I.014490 - Repl. misc. components N-180 Ameland	014490	Regular	Quality	RDN	GRS	multiple	multiple	139.000	176.867	27%	Construction costs higher than estimated: price effects
G	I.014476 - Repl. Lobith S-1259 bf Sereco	014476	Regular	Quality	RDN	Valve	1	1	550.000	537.138	-2%	
G	I.014474 - Modifications for pigging A-620	014474	Regular	Quality	HPGG	Pipeline	1	1	1.000.000	1.491.550	49%	Construction costs higher than estimated: wider scope of works
G	I.014473 - Repl. heating install. W-441 Exxon	014473	Regular	Quality	RDN	GRS	1	1	350.000	1.259.730	260%	Construction costs higher than estimated: wider scope of works
G	I.014471 - Repl. Aalsmeer v. set-up S-5994 Pumping st.	014471	Regular	Quality	RDN	Valve	1	1	800.000	-	-100%	Changed to a decommissioning project. Costs transferred to OPEX
G	I.014470 - Repl. v. set-up S-7517 PLM Dongen	014470	Regular	Quality	RDN	Valve	1	multiple	625.000	1.852.187	196%	Construction costs higher than estimated: wider scope of works and price effects
G	I.014467 - Repl. Pannerden S-1331 GRS Pannerden	014467	Regular	Quality	RDN	Valve	1	1	550.000	728.284	32%	Construction costs higher than estimated: price effects
G	I.014465 - Repl. Stadskanaal S-4802 Vleddermond	014465	Regular	Quality	RDN	Valve	1	1	550.000	578.876	5%	
G	I.014464 - Repl. Hoogeveen S-1474 Vos v S	014464	Regular	Quality	RDN	Valve	1	1	550.000	942.346	71%	Construction costs higher than estimated: soil remediation measures
G	I.014461 - Repl. Tegelen S-3051 valve 21	014461	Regular	Quality	RDN	Valve	1	1	300.000	767.233	156%	Construction costs higher than estimated: drainage measures
G	I.014452 - Repl. Eerbeek S-1098 Mayr Melnhof	014452	Regular	Quality	RDN	Valve	1	1	550.000	614.486	12%	
G	I.014451 - Repl. Nunspeet S-1100 Nestle	014451	Regular	Quality	RDN	Valve	1	1	650.000	791.363	22%	
G	I.014445 - Repl. v. set-up Woudenberg S-6298	014445	Regular	Quality	RDN	Valve	1	1	800.000	877.703	10%	
G	I.014431 - Repl. GV 3-1 Santpoort W-270	014431	Regular	Quality	RDN	GRS	1	1	112.246	49.820	-56%	Construction costs lower than anticipated
G	I.014419 - Repl. v. set-up The Hague S-5841 Trambaan	014419	Regular	Quality	RDN	Valve	1	1	737.000	1.198.480	63%	Construction costs higher than estimated: price effects
G	I.014418 - Repl. v. set-up S-5030 Nauernasevaart	014418	Regular	Quality	RDN	Valve	1	1	993.000	1.126.926	13%	
G	I.014391 - Repl. valve GRS Z101 Mars	014391	Regular	Quality	RDN	GRS	1	1	67.000	29.516	-56%	Construction costs lower than anticipated
G	I.014379 - Inst. above-ground diesel stor. 05C Ommen	014379	Regular	Quality	HPGG	CS	1	1	172.400	230.168	34%	Construction costs higher than estimated: price effects
G	I.014360 - Repl. v. set-up S-5545 Moezelweg - Merw	014360	Regular	Quality	RDN	Valve	1	1	1.000.000	1.566.773	57%	Construction costs higher than estimated: price effect and long permit times
G	I.014357 - Repl. v. set-up S-5111 Spaarnwoude	014357	Regular	Quality	RDN	Valve	1	1	566.000	930.142	64%	Construction costs higher than estimated: price effects
G	I.014352 - Repl. air compressors MS Beekse Bergen	014352	Regular	Quality	HPGG	CS	1	1	305.549	509.525	67%	Construction costs higher than estimated: wider scope of works
G	I.013976 - Repl. v. set-up S-5568 Theemsw by Humber	013976	Regular	Quality	RDN	Valve	1	multiple	950.000	2.663.291	180%	Construction costs higher than estimated: wider scope of works and price effects
G	I.013967 - Repl. v. set-up S-7366 Ettensebaan	013967	Regular	Quality	RDN	Valve	1	1	607.213	843.547	39%	Higher costs than anticipated: longer project lead time
G	I.013963 - Repl. v. set-up S-3174 Vught	013963	Regular	Quality	RDN	Valve	1	1	682.783	765.481	12%	
G	I.013959 - Repl. Deventer S-9211 Zutphenseweg	013959	Regular	Quality	RDN	Valve	1	1	520.000	566.924	9%	
G	I.013958 - Repl. Weert S-3085 Vrakker	013958	Regular	Quality	RDN	Valve	1	1	750.000	1.320.218	76%	Construction costs higher than estimated: price effects
G	I.013926 - Repl. Bergharen S-9929 Oude Wetering	013926	Regular	Quality	RDN	Valve	1	1	749.027	693.300	-7%	
G	I.013924 - Repl. v. set-up Jubbega S-1190	013924	Regular	Quality	RDN	Valve	1	1	486.000	618.517	27%	Construction costs higher than estimated: asbestos removal measures
G	I.013921 - Repl. Oss S-3351 Unilever	013921	Regular	Quality	RDN	Valve	1	1	749.081	584.242	-22%	
G	I.013884 - Repl. v. set-up S-2120 GRS Boskoop	013884	Regular	Quality	RDN	Valve	1	1	794.333	959.145	21%	
G	I.013870 - Repl. v. set-up S.P. Wormer S-5035	013870	Regular	Quality	RDN	Valve	1	1	1.102.574	1.388.711	26%	Construction costs higher than estimated: wider scope of works
G	I.013584 - GNIPA-S-5588 Oude Trambaan Nabij	013584	Regular	Quality	RDN	Valve	1	1	750.000	1.257.217	68%	Construction costs higher than estimated: price effects
G	I.014529 - Diversion of Emmeloord N-501-25 de Munt B company	14529	Diversion	Third-party diversion request	RDN	Pipeline	1	1	810.000	463.197	-43%	Construction costs lower than anticipated: smaller scope of works
G	I.014520 - Diversion of W-533-10 Bloemendalerpolder Weesp	14520	Diversion	Third-party diversion request	RDN	Pipeline	1	1	459.000	346.373	-25%	
G	I.014512 - Diversion of Reuver Z-509-15	14512	Diversion	Third-party diversion request	RDN	Pipeline	1	1	580.000	434.276	-25%	Construction costs lower than anticipated: economies of scope/scale
G	I.014493 - Diversion Kooijweg W-514-01 Rijswijk	14493	Diversion	Third-party diversion request	RDN	Pipeline	1	1	863.000	1.518.228	76%	Construction costs higher than estimated: price effects
G	I.014492 - Diversion Spoorlaan W-536-06 Pr Clausplein	14492	Diversion	Third-party diversion request	RDN	Pipeline	1	1	465.000	641.187	38%	Construction costs higher than estimated due to: price effects and drainage measures

Continued on next page

V.1: List of completed investment projects – Regular investments continued previous page

E/G	Investment ID	Bottleneck ID	Investment classification	Type of bottleneck	Voltage or pressure level	Type of grid component	Estimated number	Completed number	Estimated total costs	Actual total costs	Delta	Explanation
G	I.014426 - Diversion of W-572-01 and 03 Klaprozenbuurt Amst	14426	Diversion	Third-party diversion request	RDN	Pipeline	1	1	1.599.000	2.569.562	61%	Construction costs higher than estimated: wider scope of works and price effects
G	I.014403 - Diversion of N-568-10 for ProRail Renkum	14403	Diversion	Third-party diversion request	RDN	Pipeline	1	1	635.000	942.809	48%	Construction costs higher than estimated: price effects and NOx measures
G	I.014386 - New HPGG connection Shell Pernis	14386	Connections	Capacity	HPGG	Valve	1	1	1.042.200	1.226.714	18%	
G	I.014366 - Diversion of Haaften W-527-19 dike reinforcement GOWA	14366	Diversion	Third-party diversion request	RDN	Pipeline	1	1	867.500	989.673	14%	

Table V.2: List of completed investment projects – Major investments

E/G	Investment ID	Bottleneck ID	Station or connection location	Type of bottleneck	Voltage or pressure level	Type of grid component	Estimated total costs	Actual total costs	Delta	Estimated comm. date	Actual comm. date	Explanation
G	I.013676 - N2 chiller in relation to phase-out of R507 Ommen	13676	Ommen	Quality	HPGG	Nitrogen plant	12.298.999,90	22.583.944,51	84%	2022	2024	Construction costs higher than estimated: price effects and wider scope of works. Longer lead time due to changed shutdown schedule at the nitrogen plant.
G	I.013709 - G-H conversion Nuon Power Diemen	13709	Diemen	Quality	RDN	Multiple asset categories	14.700.000,00	22.643.908,81	54%	2023	2024	Construction costs higher than estimated: price effects and wider scope of works due to local circumstances and drainage measures. Longer lead times due to wider scope of works.
G	I.013710 - G-H conversion Uniper ROCA Rotterdam	13710	Rotterdam	Quality	HPGG	Multiple asset categories	12.400.000,00	18.322.916,09	48%	2023	2024	Construction costs higher than anticipated: price effects and wider scope of works due to local circumstances. Longer lead time due to permit procedures.
G	I.013716 - G-H conversion Akzo Hengelo	13716	Hengelo	Quality	HPGG	Multiple asset categories	8.600.000,00	6.479.832,19	-25%	2023	2023	A portion of the estimated costs concerned decommissioning costs. These costs were transferred to OPEX
G	I.012900 - Zuidbroek nitrogen plant expansion	12900	Zuidbroek	Capacity	HPGG	Nitrogen plant	500.000.000,00	591.200.339,60	18%	2022	2023	Construction costs higher and lead times longer than estimated: wider scope and higher complexity of the works
G	I.014820 - Repl. defect. valve S-234 Meteren	N/A	Meteren	Capacity	HPGG	Valve		5.897.991,69	100%	N/A	2023	Unanticipated bottleneck

Appendix VI: Report on the security of supply

Article 52a of the Dutch Gas Act stipulates that the Minister must submit an annual report to the European Commission on the security of supply. Pursuant to the Decree on the

performance of duties under Article 52a of the Dutch Gas Act dated 1 July 2011, the Minister has assigned this responsibility to GTS. Most of the topics are included in this IP. The two remaining topics, peak supply and supply in the event of a licence holder's insolvency, are addressed below.

To guarantee the supply of gas to small-scale consumers, GTS has been assigned two statutory duties: firstly, it must ensure the supply to small-scale consumers during peak periods; and secondly, it must take certain actions in the event that a licence holder can no longer meet its financial obligations and the supply to small-scale consumers is endangered as a result. These two statutory duties are described in the Security of Supply (Gas Act) Decree.

Peak supply

Pursuant to the Security of Supply (Gas Act) Decree, GTS has a statutory obligation to take measures to allow licence holders to continue to supply small-scale consumers (consumer category G1A and G2A) with natural gas during 'peak supply periods'. A peak supply period is deemed to be a period during which the mean effective 24-hour temperature is minus 9°C or lower. GTS provides all necessary facilities to enable licence holders to continue to supply all small-scale consumers in the Netherlands during such periods, including gas purchasing, flexibility services and gas transmission over the national gas grid. The measures taken and facilities provided must be such that peak supply can be provided on a day with a mean effective 24-hour temperature of minus 17°C, as measured at the Royal Netherlands Meteorological Institute in De Bilt.

Each year, GTS determines the capacity and volume required for peak supply for this service. The required volume and capacity is determined on the basis of historical temperature data series and consumption information for the previous winters at the relevant exit points. GTS arranges gas procurement and the procurement of flexibility services by tender; the required transmission capacity is reserved by GTS.

The peak supply obligation for the 2024/25 peak period consisted of a capacity of approximately 17.6 GW and a volume of around 530 GWh. The winter of 2017-2018 was the last winter in which a mean effective 24-hour temperature of minus 9°C or lower occurred.

Supply in the event of a licence holder's insolvency

When a licence holder is no longer able or deemed to be able to meet its financial obligations, ACM can make a decision to revoke that holder's licence. The decision will take effect no later than twenty working days after the decision is made. GTS can be asked to guarantee the payment of the procurement of gas for supply to small-scale consumers during this period.

If, on no later than the tenth working day after the decision has been made, not all small-scale consumers of the licence holder have been transferred to another licence holder, GTS will assign the remaining small-scale consumers to another licence holder. GTS will provide the receiving licence holder with the relevant data of the allocated small-scale consumers. The licensed suppliers who are assigned small-scale consumers as a result of this transfer can, if necessary, also ask GTS to guarantee the payment for the procurement of gas for these new customers for a period of up to two months.

The Dutch Energy Data Exchange Association (NEDU; currently called MFF-BAS) has drawn up a description of the processes relating to the administrative handling of a case of insolvency of a licence holder and the distribution of small-scale consumers among the other licence holders.

A protocol has been drawn up by ACM, TenneT and GTS for mutual cooperation and for cooperation with EDSN (Energie Data Services Nederland) in the event that the supply by a licence holder is endangered.

The situation in which a licence holder has become insolvent and ACM has withdrawn their licence has arisen several times in the past. Pursuant to the Security of Supply (Gas Act) Decree, in a few cases GTS guaranteed payment for the procurement of gas for supply to small-scale consumers.

Based on these experiences, GTS has drawn up sample texts that can be used for the guarantees. In several cases, GTS allocated the small-scale consumers of a licence holder to other licence holders. This was done in collaboration with ACM, TenneT and EDSN. This method was successful and can be used again for the next distribution of remaining small-scale consumers should such a situation arise again in the future, with the difference that, on 1 January 2026, the Energy Decree will replace the Security of Supply (Gas Act) Decree and from then on ACM will officially become responsible for distributing the remain small-scale consumers, with GTS, TenneT, EDSN and others supporting this process.

Appendix VII: Detailed calculation of the discount rate

The value of 1 risk point for a business value in the risk matrix corresponds to:

$$\frac{1}{10 \cdot \sqrt{10}} \text{year}^{-1} \cdot 1\text{M€} \approx 31.6\text{k€} \cdot \text{year}^{-1}$$

Select the economically relevant period N years (generally N=25 years). With a WACC equal to W and inflation equal to I, the discount rate r equals: $\mathrm{r} = \frac{1+\mathrm{I}}{1+\mathrm{W}}$

So for the present value CW of a risk R over a period of 1...N years:

$$\mathrm{CW} = \mathrm{R} \cdot \sum_{j=1}^{N} \mathrm{r}^{j-1} = \mathrm{R} \cdot \frac{1-\mathrm{r}^{N}}{1-\mathrm{r}}$$

For example: let's say the risk has been set at C3 (1 point, $\text{k€}\frac{31.6}{\text{year}}$), the WACC is 5.39% per year (before tax) and inflation is 2.0% per year. In that case:

$$\mathrm{r} = \frac{1+0{,}02}{1+0{,}0539} = 0{,}9678$$

This means that the present value over a period of 25 years equals:

$$\mathrm{CW} = \text{k€}\frac{31.6}{\text{year}} \cdot \frac{1-0.9678^{25}}{1-0.9678} \text{year} = \text{k€ } 31.6 \cdot 17.36 = \text{k€ } 549$$

Appendix VIII: Border station capacity

NAME VIP/IP	NWP	DIRECTION	Oct-25	Oct-26	Oct-27	Oct-28	Oct-29	Oct-30	Oct-31	Oct-32	Oct-33	Oct-34	Oct-35	Oct-36	Oct-37	Oct-38	Oct-39	Oct-40	Oct-41	Oct-42	Oct-43	Oct-44
VIP TTF-THE-L	301568	entry	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
		exit	19,4	14,6	9,8	5,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
underlying IPs:																						
Winterswijk (OGE)	300133																					
Zevenaar (OGE)	300132																					
Haanrade (Thyssengas)	300141																					
Dinxperlo (BEW)	300140																					
Oude Statenzijl (GTG Nord-G)	300136																					
Oude Statenzijl (GUD-G)[OBEBG]	300144																					
Oude Statenzijl (GTG NORD-H)	301550																					
VIP-TTF-THE-H	301569	entry	21,3	21,3	21,3	21,3	21,3	21,3	21,3	21,3	21,3	21,3	21,3	21,3	21,3	21,3	21,3	21,3	21,3	21,3	21,3	21,3
		exit	34,0	34,0	34,0	34,0	34,0	34,0	34,0	34,0	34,0	34,0	34,0	34,0	34,0	34,0	34,0	34,0	34,0	34,0	34,0	34,0
underlying IPs:																						
Bocholtz TENP (OGE - Flx TENP)	300139																					
Bocholtz Vetschau (Thyssengas)	301368																					
Oude Statenzijl (OGE]	300145																					
Oude Statenzijl (GUD-H)[OBEBH]	300146																					
Oude Statenzijl (Gascade-H)	300147																					
VIP-BENE	301546	entry	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
		exit	33,0	30,3	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0
underlying IPs:																						
's Gravenvoeren (Fluxys)	300143																					
Zandvliet (Fluxys-H)	301184																					
Zelzate (Fluxys)	301111																					
VIP BENE-L	301576	entry	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
		exit	15,2	10,0	7,0	4,2	1,5	1,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
underlying IPs:																						
HILVARENBEEK (FLUXYS)	300131																					
VLIEGHUIS (RWE)	300142	entry	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
		exit	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
EMDEN EPT (GASSCO)	301113	entry	40,2	40,2	40,2	40,2	40,2	40,2	40,2	40,2	40,2	40,2	40,2	40,2	40,2	40,2	40,2	40,2	40,2	40,2	40,2	40,2
		exit	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
ROTTERDAM (GATE)	301345	entry	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0	24,0
		exit	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
EEMSHAVEN (Eems Energy Terminal)	301574	entry	15,0	15,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
		exit	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

Colophon

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