

GAS HUB CONSULTATIVE PLATFORM

Position paper and recommendations
on the role of gas in the energy mix,
the Northwest European Gas Hub and
the Dutch mining climate



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INTRODUCTION

RECOMMENDATIONS OF THE WORKING GROUPS OF THE GAS HUB CONSULTATIVE PLATFORM

The Dutch government pursues an active policy to position the Netherlands in the Northwest European Gas Hub and to promote gas-related investments¹. The Gas Hub Consultative Platform² provides a forum for the Dutch government and the gas industry to align and discuss new initiatives and strategic issues. Through the Gas Hub Consultative Platform the government can take the needs of the business community into consideration in the policy development processes and will also place these needs on the agenda in discussions with foreign governments.

The primary objective of the Consultative Platform is to facilitate the development of the Gas Hub through:

- Coordinating activities and discussing strategic issues;
- Exchanging information;
- Engaging business community in policy development;
- Initiating cooperation;
- Implementing a multi-year Gas Hub action plan;
- Promoting gas to relevant stakeholders in and outside the gas industry.

To further elaborate the Gas Hub policy, the first meeting of the Gas Hub Consultative Platform, held on February 11th 2010, resulted in the formation of four working groups focused on four important topics of the Gas Hub policy:

- The role of gas in the energy mix of Northwest Europe;
- The development of the Northwest European Gas Hub;
- The Dutch mining climate;
- A shared gas communication strategy.

From July until November 2010, each working group prepared and produced a working paper containing the actions and recommendations concerning the specific topics. Each working group consisted of representatives of the companies and organisations participating in the Gas Hub Consultative Platforms. Better insight in the future role of gas in the energy mix, the development of the Northwest European Gas Hub and the Dutch mining climate are important topics for the gas industry in order to formulate and position their own long-term investment strategies and ensure security of supply while having a certain level of predictability on security of demand. For the Dutch government

1 Government report 'The Netherlands as a Northwest European Gas Hub' (Ministry of Economic Affairs, November 2009).

2 The Gas Hub Consultative Platform was established by the Minister of Economic Affairs in February 2010. It consists of CEOs from the gas industry and directors from knowledge and research institutes. At the first meeting of the Consultative Platform in February 2010 the CEOs and directors from the following companies and organisations were present: APX-Endex, Clingendael, Delta, DONG Energy, EBN, ECN, EDI, Eneco, ExxonMobil, Fluxys, GasTerra, Gasunie/GTS, GDF SUEZ, NUON, RWE-Essent, Shell, TAQA Energy and TNO. The Minister of Economic Affairs, Agriculture and Innovation chairs the meetings of the Consultative Platform and the director of the NMA (Dutch competition authority) is present as an observer.

strengthening the economic dimensions and the earning potential of the energy sector are considered important goals (cf. the Coalition Agreement of 30 September 2010). The further development of the Gas Hub can contribute in a substantial way to this goal. This summary report presents the main actions and recommendations formulated in these papers, aiming to set a shared Gas Hub ambition for the Netherlands in Northwest Europe.

A GAS HUB POLICY FOR THE NETHERLANDS

The Netherlands is entering a new era in which it needs to reconsider its strategic options for its positioning within the Northwest European gas market. Although the Netherlands is still the main producer of gas in the European Union³, its production has matured and gas reserves of both the Groningen field and small fields are decreasing. Also, international climate policies and objectives focused on significantly reducing CO₂ emissions (by 80% or more) in 2050 and improving energy efficiency are changing the energy mix of the Netherlands and other European countries⁴. These developments and a perceived lack of visibility of gas in the debate on the future energy systems require a new strategy for gas and the position of the Netherlands in the gas market.

The Netherlands has a strong and innovative gas industry which currently provides 66 400 jobs (11 600 direct, 31 500 indirect and 23 300 induced jobs), contributes 3% to the GDP, and comprises circa 8% of the Dutch central government revenues in 2009⁵. In addition, large investments in the Netherlands are made in Exploration and Production (E&P) (estimated at € 7.6 billion in the period 2005-2009), transport infrastructure (estimated at € 8.4 billion in the period 2003-2015) and gas-fired power generation (estimated at € 4 billion in the period 2007-2012)⁶.

Through the Gas Hub policy the Netherlands aims to optimise the use of the existing geological advantages, the existing infrastructure, its geographical location next to the sea and connections to other European (gas) markets, and the accumulated knowledge. Such a Gas Hub policy needs to embrace a long-term vision on the role of gas as energy source, gas being a core element in the future energy mix due to its low carbon footprint, its flexibility and availability.

3 In 2008 Dutch gas production accounted for 36% of the EU gas production (Eurogas, January 2010, 'Statistics 2008').

4 The European Commission has recently presented its energy strategy for 2020 and is in the process of developing an energy roadmap towards 2050 (European Commission, November 2010, 'Energy 2020: A strategy for competitive, sustainable and secure energy').

5 The Brattle Group, December 2010, 'Economic impact of the Dutch Gas Hub strategy on the Netherlands'. The central government revenues from gas mainly include the income from exploration and production from gas in the Netherlands (including corporate income tax and VAT paid by consumers). The downstream government revenues (revenues from corporate income tax) are considered to be negligible relative to the revenues from gas exploration and production.

6 Based on investment analysis by Policy Research Corporation (2010).

The Netherlands can provide a major contribution to the realisation of an *affordable* (cost-effective), *secure* and *environmentally acceptable* energy system in the future through the Gas Hub policy. Such a policy should be elaborated in cooperation with surrounding countries in the Northwest European region and needs to strengthen the Gas Hub's socio-economic benefits for the Netherlands and the rest of the Northwest European region. The Netherlands has an opportunity now to position itself in a leading role in the development of the Northwest European Gas Hub.

Section 1 presents a long-term ambition for the role of gas in the energy mix in Northwest Europe. Section 2 outlines recommendations for the development and positioning of the Netherlands in the Northwest European Gas Hub. Section 3 discusses potential improvements of the Dutch mining climate. Finally, section 4 discusses the development of a shared gas communication strategy.



1 THE ROLE OF GAS IN THE ENERGY MIX IN NORTHWEST EUROPE

Natural gas currently has a substantial role and share in the energy mix in Northwest Europe and is considered an important transition fuel towards an efficient, financially affordable and low carbon economy in the future. In order to reach international climate policy goals such as reducing CO₂ levels by at least 80% or more in 2050 more cost-effectively, a substantial and lasting role of gas in the future energy mix should be aspired. Therefore, a long-term vision on the role of gas in the future regional energy mix, and ambitions that follow that vision, are important conditions for positioning the Netherlands in the Northwest European Gas Hub.

The vision and ambitions for gas should be set in close cooperation with surrounding countries and the gas industry. A regional approach towards defining the desired future energy mix allows countries in Northwest Europe to specialise in a certain type of energy supply. A regional approach towards the energy mix allows Northwest Europe to realise climate policy goals more effectively in contrast to a national approach, where energy systems are optimised per country. Furthermore, a regional perspective on the energy mix corresponds with the scope of operations and the energy portfolio of pan-European energy companies. The large and long-term investments made by the industry are based on- and support a significant share of gas in the future energy mix, both as a transition and a destination fuel.

LONG-TERM AMBITIONS FOR THE ROLE OF GAS IN THE ENERGY MIX

GAS IS AN IMPORTANT TRANSITION FUEL IN THE REGIONAL ENERGY MIX

Gas is environmentally acceptable, abundantly available and financially affordable. Gas is here to stay.

Gas is the cleanest fossil fuel

Gas wants to have an important role and share in a future sustainable energy system that aims at a significant reduction of carbon emissions in Europe. Besides lower carbon emissions, natural gas results in fewer emissions of other pollutants such as NO_x, SO_x and fine particles than other fossil fuels and also causes no (nuclear) waste after combustion. Natural gas is the cleanest fossil fuel, and the gas mix can be made even 'greener' through the use of green gas. More and better use of gas in the energy mix can thus further reduce emissions of existing energy systems in Europe.

Gas is an enabler of intermittent renewable energy sources due to its flexibility

In a sustainable energy system gas remains an important energy source for power generation due to its flexibility. Gas is an enabler of renewable energy sources as gas can be stored, transported and used to back up intermittent power generation from wind and solar plants ('natural partner of renewables' and 'reliable energy source'). Gas-fired

power generation is highly flexible; it is more efficient, more responsive and is often more cost-effective than other forms of power generation.

Security of supply of gas has improved for the short and medium term

The worldwide presence of gas resources (incl. unconventional gas), gas diversification strategies from governments, investments by the industry and market liberalisation have improved security of supply of gas in Northwest Europe for the short and medium term outlook. Worldwide conventional recoverable gas resources are still abundant. Northwest Europe and the Netherlands have an extensive gas infrastructure network for production and transmission (including LNG facilities). Market liberalisation is opening up European gas markets.

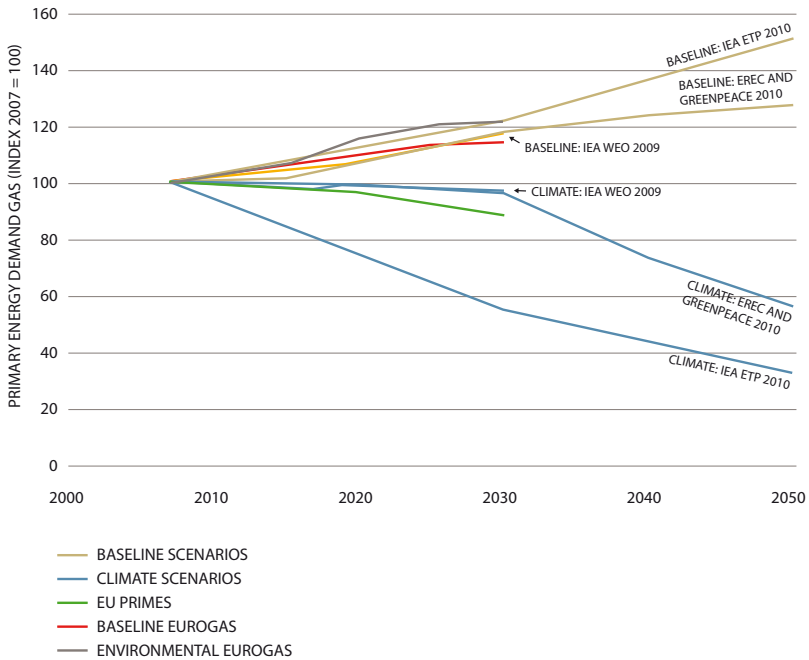
LONG-TERM AMBITION: GAS IS HERE TO STAY

Gas is and will be a core element ('a destination fuel') in the current and future energy mix in Northwest Europe due to its low carbon footprint, flexibility and availability. This ambition for gas not only holds *in the transition period* towards a low carbon economy, but also in a *low carbon economy* once it has been established, but only when combined with CCS and green gas, and as a natural partner for renewables.

Gas plays an important role in a flexible integrated gas and electricity power system. Gas grids support more efficient power production downstream; transporting energy in the form of gas over long distances is cheaper and more efficient than via the electricity network. In this respect, the extensive gas network in Northwest Europe should be considered complementary to the electricity grid. Gas does not only play an important role in the power generation sector, but also in other demand sectors. Especially in industry, gas will continue to play an important role as fuel and feedstock. Gas is a convenient fuel for heating in buildings and a more extensive use of gas in the transport sector could result in significantly lower emissions of pollutants compared to the current situation.

These ambitions for gas should be strongly considered by society in order to reach climate policy goals such as the European Union members' pledge of reducing CO₂ emissions to 80% or more below 1990 levels by 2050 in a cost-effective way. Existing scenarios for gas demand in Europe strongly diverge (see figure on the next page). Major uncertainties and differences for these diverging scenarios are determined by way in which climate policies are implemented (including the success of ETS, price of CO₂ and development of Carbon Capture and Storage (CCS) technology) and the development of the gas price (relative to the prices of other energy sources).

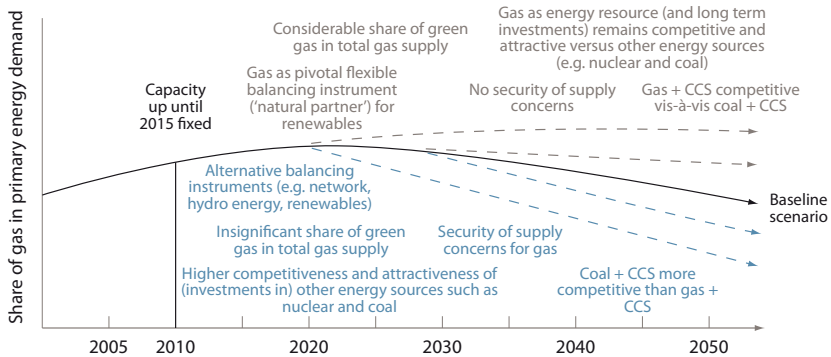
PRIMARY ENERGY DEMAND FOR GAS RANGES FROM AN EXPECTED INCREASE (BASELINE SCENARIOS) TO AN EXPECTED DECREASE (CLIMATE SCENARIOS) ESPECIALLY IN THE LONG TERM



SOURCE: BASED ON SCENARIOS FROM IEA WEO 2009, IEA ETP 2010, EUROGAS, EREC AND GREENPEACE 2010 AND PRIMES.

The long-term ambition for gas should be to strive to capture a growing share of primary energy demand for the next 10 to 20 years, enabling large, affordable CO₂ reductions while renewables, CCS and other low carbon technologies are developing further. This period should be followed by a period of stabilisation as energy efficiency and renewable energy start to play an important role, while gas-related CO₂ emissions are abated by CCS and the use of green gas. This role and the share of gas are illustrated by the grey lines in the figure shown on the next page.

LONG-TERM AMBITION FOR ROLE (AND SHARE) OF GAS⁷



SOURCE: ECN

KEY AREAS FOR THE REALISATION OF THE LONG-TERM AMBITIONS FOR THE ROLE OF GAS

The long-term ambitions for the role of gas are supported by policy recommendations for four key areas for the short and medium term for Northwest Europe and the Netherlands.

CO₂ PRICING

Most importantly, measures should be taken to ensure that the Emission Trading Scheme (ETS) attains its goals, namely reducing CO₂ emissions in the most cost-efficient way and allowing market forces to stimulate investments in technologies that will reduce CO₂ emissions. The latter is only feasible when the CO₂ cap and number of allowances are lowered and subsequently the CO₂ price will be increased. As an alternative a CO₂ and/or fuel tax or performance standard can be installed for industries that are not involved in ETS or receive allowances for free⁸; such standards and similar measures (e.g. CO₂ price floor), should be set on EU level to attain the desired effects.

The consequences of these policy interventions should be carefully assessed before they are resorted to. A robust method of CO₂ pricing (with long-term regulatory certainty on

⁷ This figure is for illustrative purposes. No quantification has been undertaken; mentioned factors or uncertainties may differ regarding their size of impact and timing.

⁸ Currently, the EU ETS includes some 12 000 energy-intensive installations across Europe including power generation, iron and steel, glass, cement, pottery and bricks, cardboard and paper. Aviation will be included from 2012 on. Several companies have obtained CO₂ allowances for free in the first two trading periods (Phase I: 2005-07; Phase II: 2008-12).

the CO₂ cap of ETS and subsequent CO₂ prices) will stimulate efficient use of gas (and other fossil fuels) and enhance investments in Carbon, Capture and Storage (CCS), green gas, (large scale) Combined Heat Power (CHP).

CCS

Currently, the deployment of CCS on an industrial scale is still many years away, because CCS is costly, the technology has not been fully developed yet, and it is energy-consuming. Large investments and clear demonstrations will be needed, driven by high (expected) carbon prices. From a sustainability perspective 'gas + CCS', once operational, will most likely be a better option than 'coal + CCS', because it leaves less residual CO₂ in the atmosphere and requires less CO₂ storage capacity. 'Gas + CCS' might also be more cost-effective per kWh, this however depends on uncertainties including the future gas-coal price ratio and the CO₂ price⁹.

In this phase of development and learning, it is vital to accomplish a level playing field for gas and coal, whereas CCS projects that are currently being set up mostly involve coal. On a European level awareness of the potential benefits of 'gas + CCS' in reducing carbon emissions should be raised. 'Gas + CCS' should be allowed to develop in the same way as 'coal + CCS'. Therefore, for every demonstration project that involves coal + CCS, it is recommended to stimulate a demonstration project involving gas + CCS as well.

GREEN GAS

In the long term, new types of green gas like biogas, bio-syngas and other forms of low carbon gas can further reduce the carbon emissions from gas, while maintaining the characteristics and advantages of natural gas. The development, production and use of green gas should be stimulated while taking into account an efficient use of the scarce availability of biomass. The availability of biomass is an area of concern leading to the need for a holistic and broad perspective on the optimal use of biomass for transport, power generation and as industrial feedstock. 'Cascading' should be applied, in which biomass is first used in ways that optimise value added and use remaining parts for mass use.

More investments and support for R&D are needed in order to determine which kind of green gas equivalent would be best to support (potential options include a green gas knowledge centre, stimulation of regional cooperation, etc.). An ambition of 1 – 3 billion cubic metres (bcm) green gas by 2020 in the Netherlands seems feasible.

FLEXIBLE GAS-BASED COGEN PROJECTS (E.G. CHP AND MICRO CHP)

Improvement of energy demand efficiency and optimal use of energy (incl. heat) should be strived for. Flexible gas-based co-generation projects and technology (e.g. Combined

⁹ The projected economic competitiveness of 'gas + CCS' versus 'coal + CCS' is unclear in existing studies. While some studies suggest that 'gas + CCS' can be less costly than 'coal + CCS' (e.g. studies for the US Department of Energy and UK's Department of Energy and Climate Change) other studies suggest the opposite effect where 'gas + CCS' is more costly than 'coal + CCS' (e.g. studies from IEA).

Heat and Power (CHP) or micro CHP) can play an important role in improving the efficiency in energy demand, the optimisation of energy use (incl. heat) in the medium term and better positioning of gas as a transition fuel. (Micro) CHP installations can provide higher fuel efficiency and lower CO₂ emissions than existing gas and coal power plants. The development and promotion of these types of projects and technologies should be a priority for government and industry in the short term and medium term. Further study of appropriate means for stimulating the development and implementation of micro CHP and large scale CHP is required in this respect.

RECOMMENDATIONS

The following recommendations are made to strengthen the role of gas and to realise the long-term ambitions for gas:

- Share the long-term ambitions for gas to be a major contributor in the energy mix and define the desired future regional energy mix in cooperation with the EU, surrounding countries in Northwest Europe and other stakeholders in the Netherlands:
 - The long-term ambition for gas should be to strive to capture a growing share of primary energy demand for the next 10 to 20 years, enabling large, affordable CO₂ reductions while renewables, CCS and other low carbon technologies are developing further;
 - This period should be followed by a period of stabilisation as energy efficiency and renewable energy start to play an important role, while gas-related CO₂ emissions are abated by CCS and the use of green gas;
- Measures should be taken to ensure that the ETS scheme and/or alternatives drive down CO₂ emissions in a cost-effective way and simultaneously allow market forces to stimulate investments in technologies that will reduce CO₂ emissions;
- Accomplish a level playing field for 'gas + CCS' vis-à-vis 'coal + CCS' by stimulating 'gas + CCS' demonstration projects in the same way as 'coal + CCS' to allow for similar learning effects;
- Invest in and support R&D stimulating the development and cost-effective use of green gas equivalents. An ambition of 1 – 3 billion cubic metres (bcm) green gas by 2020 in the Netherlands seems feasible;
- Study which means would be appropriate for stimulating the development and implementation of flexible gas-based cogen projects such as micro CHP and large scale CHP in the Netherlands.

2 THE DEVELOPMENT OF THE NORTHWEST EUROPEAN GAS HUB

The Netherlands is entering a new era in which it needs to reconsider its strategic options for its positioning within the Northwest European gas market. The Netherlands should optimise the use of the existing geological advantages, the existing infrastructure, its geographical location next to the sea and connections to other European (gas) markets, and the accumulated knowledge and cooperation models.

The Dutch government pursues an active policy to position the Netherlands in the Gas Hub of Northwest Europe and to promote gas-related investments, which is essential because of a) the important role of gas in the (regional) energy mix, b) the potential contribution of gas to the further reduction of CO₂ and the transition towards a sustainable and affordable energy system, c) the strong and strategic position of the Netherlands in the European gas market and d) the presence of a strong gas industry. The Gas Hub policy needs to further strengthen the economic basis of the Netherlands and to increase the security of supply.

GENERAL GUIDELINES FOR THE DEVELOPMENT OF THE NORTHWEST EUROPEAN GAS HUB

The development of the Gas Hub will be driven by liberalisation and improved interconnectivity of the gas transport systems and the gas markets in Northwest Europe. Further integration of the gas market areas will have to take place in the coming years, ensuring cross border transactions as seamless as possible. Gas market integration is, first and foremost, served by better and consistent transport regulation that enables the market to efficiently use existing network capacity and avoids excessive regulation. A level playing field and consistent regulatory framework for transport will have a positive effect on supply, storage and the development of liquid trading hubs, and thus on the security of supply and future role of gas.

Interconnectivity of transport grids and alignment of transport rules are the most important instruments through which the development of the Gas Hub can be supported. Not only physical capacity and interconnections, but also the impact of regulation concerning the transport grid should be duly assessed. Investments in interconnectivity between transport systems should be done where the market is willing to pay for these investments; (regulatory) bottlenecks which have an impact on transport investment decisions should be removed.

Liquid, efficient and transparent gas trading in Northwest Europe is an important element of the Northwest European Gas Hub. The setting of (short and long term) gas prices is a market activity; governments should only provide a *stable regulatory framework to stimulate trading and trading hubs*. Instead of one large trading zone (with risk of congestion), the alternative would be the development of smaller and more zones and hubs with less congestion and with different prices per zones where prices can

reflect congestion ('hub-to-hub gas system'). Further consideration can be given to these alternatives for the Northwest European market.

Provision of sufficient gas flexibility (e.g. daily to seasonal) through different options (e.g. line pack, storage and spot market products) in Northwest Europe will be an important element of the Northwest European Gas Hub. Flexibility through storages and other means should primarily be considered and treated as a market activity. These (underground) storages can play, together with demand side management and LNG import, an important role in furthering flexibility and diversification of gas supply and addressing security of supply concerns. Similarly for gas trade, improvements in and alignment of the transport network will drive (investments in) flexibility and storage. *A level playing field regarding (fiscal) measures and other market-based measures for flexibility and storage should be established.*

SPECIFIC KEY AREAS FOR THE DEVELOPMENT OF THE NORTHWEST EUROPEAN

In this section, four main topics for the development of the Gas Hub are being addressed.

These key areas focus on achieving a more integrated regional gas market:

Key area 1 Use, tariffication and building of infrastructure;

Key area 2 Cooperation and coordination in the Northwest European gas market;

Key area 3 International diplomacy and the international promotion of the Gas Hub;

Key area 4 The valorisation of existing knowledge.

FOUNDATIONS OF THE FURTHER INTEGRATION OF THE NORTHWEST EUROPEAN GAS HUB: USE, TARIFFICATION AND BUILDING OF INFRASTRUCTURE

THE IMPORTANCE OF INFRASTRUCTURE

Gas hubs are important because of their contribution to security of supply, to efficient market functioning and to the maximisation of the total economic opportunities of all participants. Successful gas hubs are never established on a stand-alone basis, but rather exist in a regional international context in which there is wide availability of solid connections and storage, cross-border cooperation and critical mass in terms of volume. The success of gas hubs is thus not in the first place based on the existence of (virtual) market places, but rather on the existence of a strong infrastructural backbone. In this respect, interconnectivity of transport grids and alignment of transport regulation are crucial instruments through which the development of the Gas Hub can be supported. The Gas Hub in turn will stimulate trade, storage and the security of supply. Not only physical capacity and interconnections, but also the impact of regulation concerning the transport grid should be duly assessed.

To keep the Gas Hub affordable, first existing (transport and storage) infrastructure needs to be optimally used and rewarded before considering building additional infrastructure.

THE OPTIMAL USE OF TRANSPORT INFRASTRUCTURE

The main challenges for the optimal use of the existing transport infrastructure currently relate to physical and contractual congestion management and finding the right balance between under- and overcapacity.

Physical congestion management implies the need for additional physical capacity; important elements in this respect are the investment climate (including timeliness of investments and effectiveness of the tariff discussions with the regulator) and the application of the Open Season model¹⁰. For contractual congestion management, it is important for government to closely interact with EU policy making and related initiatives that are currently being elaborated¹¹ and to maintain close communication lines with industry.

According to ERGEG¹², in the current world of more diverse supply, with new LNG and pipeline streams, the risk of over-investment is asymmetric versus the risk of under-investment. Temporary over-capacity may be preferable to permanent scarcity because of more efficient gas price setting, while permanent over-capacity (capacity that is never booked or used) should be avoided. In this respect, further actions are required to set up a policy framework that relates over- and under-capacity issues to the ongoing initiatives with regard to congestion management.

TARIFICATION OF TRANSPORT INFRASTRUCTURE AND MARKET COUPLING / INTEGRATION

Transport infrastructure tariffs are an issue that requires particular attention within a regional context such as the Northwest European Gas Hub's. Countries involved currently apply different tariff models which hamper the establishment of a unified market.

When addressing tariffs in a regional Gas Hub context, it is recommended that the regulators of the neighbouring countries cooperate – e.g. by means of the existing platforms – in order to remove trade barriers caused by differences in tariff structures. This can be achieved by keeping in line with the EU Tariff Framework Guidelines process that will be started up shortly, and also, for example, by elaborating a single methodology for developing tariffs as a means to achieve a common basis for the optimal use of the existing transport infrastructure and further market integration. In this respect, it would also be interesting to look more closely at the way transmission system operators (TSOs) in the power market allocate and charge for their costs and how lessons can be learned for the gas market.

¹⁰ To prepare building additional add-on transportation capacity for the future, the Open Season model is currently being used. By asking the market players about their needs for capacity, this model is being organised by the TSO to determine the level of investments.

¹¹ In particular the framework guideline on gas balancing, CAM and CMP Comitology.

¹² ERGEG, www.energy-regulators.eu. The European Regulators' Group for Electricity and Gas is an organisation established for the cooperation of the independent energy regulators of Europe. Its overall aim is to facilitate the creation of a single, competitive, efficient and sustainable internal market for gas and electricity in Europe.

The added value of market coupling (and/or market integration) concerns security of supply, increasing market efficiency and maximising consumer surplus. In order to further consider the potential merits of gas market coupling and gas market integration, the Pentalateral Forum¹³ could be asked to explore the possibilities and elaborate a framework for market coupling and/or market integration from the point of view of the Northwest European Gas Hub¹⁴. Depending on the outcome, a pilot project could be set up. Nevertheless, market coupling by itself will not solve physical capacity constraints – since gas has to be physically transported across borders¹⁵ – and should therefore not be put in place of improvements to the transport grid.

BUILDING INFRASTRUCTURE

Although a lot of infrastructure is currently already in place, additional efforts are required to build add-on capacity for the near future that could be of great importance for the further international positioning of the Gas Hub in the Northwest European gas market. Next to its contribution to the security of supply, a leading principle when considering building additional infrastructure should be its 'earning potential', i.e. what are the benefits for the Netherlands and the Northwest European region from a socio-economic perspective? Strengthening the economic dimensions and the earning potential of the energy sector are important goals of the new government of the Netherlands (cf. the Coalition Agreement of 30 September 2010). The further infrastructural development of the Gas Hub can contribute in a substantial way to this goal.

To prepare building additional add-on transportation capacity for the future, the Open Season model is currently in use. By asking the market players about their needs for capacity, this model is organised by the TSO to determine the level of investments. Since this model contains some weaknesses, further research is required to explore other models, e.g. to determine whether a TSO model as used in power markets could be an alternative or whether it would be possible to come to a type of hybrid model that combines the best of both worlds.

The presence of an overall sound investment climate in the Northwest European countries is a necessity for TSOs to be able to build infrastructure for any project the market asks for and wants to commit to, under economically viable conditions.

Although a substantial amount of infrastructure is currently already in place, there are some additional physical links that could be of great importance for the further

¹³ With regard to the power market, the Pentalateral Forum had a steering role in this respect.

¹⁴ One of the issues the Pentalateral Forum could look into are the consequences of different gas qualities in Northwest Europe, in particular for the Dutch gas market, and the necessary steps required to eliminate gas quality issues for the European gas markets.

¹⁵ This and other important differences (e.g. gas quality) between the gas and electricity market need to be taken into account when studying the concept of market coupling for gas.

international positioning of the Gas Hub into the Northwest European gas market. These additional links are related to pipeline infrastructure, gas storage and LNG. With regard to pipeline infrastructure, there are four large initiatives that are currently being looked at, two of which are rather concrete and short-term and two of which require further looking into:

- Concrete initiatives:
 - The connection of the Gas Hub with Norway; in this respect, a feasibility study is currently being carried out by GDF SUEZ in consultation with the Norwegian stakeholders;
 - The connection of Nord Stream with the Gas Hub using the Nordwest Europäische Erdgasleitung (NEL);
- Other initiatives:
 - An expansion of the BBL through an additional compressor in case additional transport capacity is required towards the UK;
 - Additional links with the Belgian and German markets; in this respect, regulatory bottlenecks in relation to interconnectivity investment decisions require further attention.

With regard to gas storage, sufficient capacity needs to be in place and available to the market to guarantee supply reliability and ensure a sufficient degree of supply flexibility for a properly functioning market. Key in this respect is the improved – and timely – availability of (nearly) depleted gas fields for new investors. These depleted fields represent a significant socio-economic value, both in terms of (seasonal) security of supply in the region, but also in terms of creating economic activities and maintaining the existing strategic position. Additional research needs to be done regarding the viable availability and accessibility of such depleted fields for underground gas storage in the Netherlands (taking into account planned and almost installed capacity in the UK and Germany) and Northwest Europe. Also, the depreciation of cushion gas¹⁶ is widely being proclaimed as a policy measure that could strongly stimulate gas storage in the Netherlands. Since such a measure is subject to a long-standing discussion between government and industry players, more facts and analyses are required in order to support such a measure.

LNG import is an important factor towards the further diversification of gas supply. LNG import can play an important role in further strengthening the flexibility and diversification of gas supply and thus address security of supply concerns. The Dutch government is still very much in favour of the establishment of additional LNG capacity.

¹⁶ Cushion gas is the term given to the volume of gas which needs to be retained at all times in a gas-storage facility in order to enable sufficient pressure to be maintained within the facility for gas to be pumped in and out.

RECOMMENDATIONS

The following recommendations are made with regard to the use, the tariffication and the building of Gas Hub infrastructure:

- Using:
 - Government – in close consultation with industry – should closely follow up EU initiatives that aim to solve outstanding issues of contractual congestion
 - Set up a policy framework that relates over- and under-capacity issues to the ongoing initiatives with regard to physical congestion management;
- Tariffication:
 - Cooperation between regulators of neighbouring countries in order to remove trade barriers caused by differences in transport tariff structures;
 - Market coupling and integration: encourage the Pentalateral Forum to explore and elaborate on the possibilities of market coupling and integration in Northwest Europe and possibly decide on setting up a pilot project;
- Building:
 - Set up a framework for analysing the 'earning potential' of building additional transport infrastructure;
 - Until further notice: keep using the Open Season model to determine the level of additionally required investments in transport; conduct an in-depth analysis of the advantages and disadvantages of alternative models to prepare additional investments;
 - Further analyse the gas storage market: evaluate the socio-economic and commercial potential of making (more) depleted fields available for new investors, draw up a list of suitable locations and make it available to the market, and further analyse the need for the depreciation of cushion gas;
 - Analyse the possibilities to encourage additional LNG initiatives and additional pipeline links.

INCREASING THE EFFECTIVENESS AND EFFICIENCY OF POLICY COOPERATION AND COORDINATION IN THE NORTHWEST EUROPEAN GAS MARKET

THE EU AND THE EC AS DRIVING AND OVERARCHING FORCES

The European Union (EU) and the European Commission (EC) are driving and overarching forces on a number of Gas Hub related topics, both with regard to regulation as to cooperation. Driving forces regarding regulation are the Third Energy Package, the Infrastructure Package and the Security of Gas Supply Regulation. Close monitoring of these and other relevant EU policy actions is required, as well as close interaction with the EC in order to tune policies into each other and make sure that the Gas Hub becomes an integrated part of European policy making.

TOWARDS EFFECTIVE AND EFFICIENT COOPERATION IN NORTHWEST EUROPE

A lot of cooperation and coordination platforms across stakeholders such as ACER, ENTSOG, the Gas Coordination Group, GIE, IEA, and the Pentalateral Gas Platform are relevant to the international functioning of the Gas Hub. These platforms work on topics

such as cooperation between TSOs and regulators, the integration of the gas markets, and security of supply. Fragmentation and a potential battle of competences between the platforms should be avoided: cooperation and coordination should take place in an effective and efficient way especially since a lot of steps need to be taken for the further integration of the Northwest European market.

RECOMMENDATIONS

In conclusion, the following recommendations are made with regard to cooperation and coordination in the Northwest European gas market:

- Liaise with surrounding countries in Northwest Europe on the desired future regional energy mix and the role of gas therein (see also section 1);
- Increase regulator's focus on EU affairs;
- Look into the possibilities, advantages and disadvantages of elaborating a cooperation model that builds further upon the existing platforms.

INTERNATIONAL DIPLOMACY AND THE INTERNATIONAL PROMOTION OF THE GAS HUB REMAINS IMPORTANT, BUT REQUIRES SOME SHIFTS IN PRIORITIES

INTERNATIONAL DIPLOMACY

In the past, international diplomacy has been used to build close relationships with individual countries, some of which have been identified as priority countries. In the future, it needs to be determined to which extent this approach should be continued and whether changes or shifts are desirable, e.g. by organising the current relationship model on a regional or European level, by focusing on regions instead of countries, by relying on members of the industry to take the first initiative instead of government or by focusing on different segments of the market (e.g. increased focus on the up- and midstream industries, on the supplying industry and on knowledge institutes). In order to keep the Gas Hub in the international picture, it needs to be stressed that it is important that the Dutch government stays actively involved in the international gas scene.

SECURITY OF DEMAND AND INTERNATIONAL PROMOTION

Gas will continue to play an important role in the energy mix in Northwest Europe. By expressing this strong and consistent policy signal, the Gas Hub aims to remain attractive to foreign producers and investors. In this matter, it is important that the Netherlands liaises and cooperates with its surrounding countries, to ensure that market forces continue to be relied upon both in terms of defining the future regional energy mix as well as in determining the role of gas therein.

RECOMMENDATIONS:

The following recommendations are made with regard to international diplomacy concerning the Gas Hub:

- Express strong and consistent policy signals that the Northwest European Gas Hub aims to remain attractive to foreign producers and investors (security of demand);
- Government needs to stay (more) actively involved in the international gas scene;

- Discuss organising joint international diplomacy with other Northwest European countries;
- Further look into which additional gas market segments could benefit from gas diplomacy;
- Analyse the production capacity and agendas of non-EU supply regions;
- Communicate on the further development of the Gas Hub using well-known and frequented conferences such as Gastech and Flame (see also section 4).

THE VALORISATION OF EXISTING KNOWLEDGE: FULLY (INTERNATIONALLY) EXPLOIT THE EXTENSIVE KNOWLEDGE THAT HAS BEEN BUILT UP OVER THE PAST 50 YEARS

The combination of research initiatives in programmes such as EDGaR, in which some of the members of the Gas Hub Consultative Platform are already committed, is an area where the Netherlands can distinguish itself internationally. Some of the main players in the industry and knowledge institutes are currently exploring the creation of R&D alliances. For the moment, the focus is being put on domestic cooperation; in a later stage, cooperation on a more international level remains an option. To that avail, cooperation with the surrounding countries can become a good starting point.

The Netherlands has a number of leader firms – also on a global level – regarding knowledge and innovation on gas infrastructure (pipelines, compressors, turbines) and technologies (e.g. separation technology of CO₂, H₂S, Sour Gas). The Netherlands has a strong position and markets worldwide are opening up for these technologies, as well as for technology transfer projects. Support from government (trade missions, bilateral contacts between governments) could prove to be very beneficial in further supporting these initiatives.

In particular the knowledge and innovation present within the upstream industry needs to be exploited internationally. A lot of technologies are being developed in the Netherlands aiming to reduce the costs of exploration and production activities and to find innovative methods to exploit conventional and unconventional reserves more effectively and efficiently. The governmental innovation policy should promote the economic valorisation of innovative gas technologies in an international context.

RECOMMENDATIONS

The following recommendations are made with regard to the valorisation of the existing Gas Hub knowledge:

- Further strengthen international cooperation, starting with adjacent countries;
- Government support to leading firms by means of trade missions and bilateral contacts;
- Stimulate the economic valorisation of innovative gas technologies.

3 THE DUTCH MINING CLIMATE

With the discovery of the Groningen field half a century ago, the Netherlands entered a new era in its energy supply. The successful cooperation between government and industry led to a swift deployment of a nationwide gas infrastructure. The implementation of the small fields policy in the mid 70's formed the next milestone. This policy proved very successful in stimulating the industry to explore and develop new gas fields both on- and offshore.

By becoming a mature area for gas production, the Netherlands has now reached a new milestone with specific characteristics. More than three quarters of the gas fields have produced at least half of their initial reserves. In addition, infrastructure is ageing in conjunction with increasing operating expenditures (opex), not only in absolute terms but also on a per unit basis as fields are being depleted. As a result, technically recoverable volumes run the risk of never being produced. Furthermore, exploration prospects are decreasing in size and international competition for exploration funds is increasing.

Currently, the annual production from small fields in the Netherlands amounts to some 30 billion cubic metres (bcm), but is expected to decline year-on-year to a level of (less than) 10 bcm in 2030. The government has expressed the ambition to extend the 30 bcm plateau until at least 2030. In order to realise this ambition, a concerted effort by government and industry is required to realise the already existing investment plans, extend production from existing fields, unlock "difficult" resources, further explore and develop the currently identified conventional exploration potential and identify and test the potential for unconventional gas resources in the Netherlands.

DUTCH GAS RESOURCES

The different gas resource classes and their associated remaining recoverable volumes in Dutch small fields add up to a total of about 750 bcm. The following table summarises current status, commercial viability and gas resource class.

Current status	Commercial viability	Gas resource class (recoverable volume)
Discovered	Commercial	Reserves (250 bcm)
	Sub-commercial	Contingent resources (200 bcm)
Undiscovered		Conventional exploration potential (200 bcm)
		Unconventional gas (100 bcm)

RESERVES

As of the 1st of January 2010, only 250 bcm of expected reserves is left in the small conventional gas fields. This volume meets economic criteria, can likely be produced with current technology and is included in firm industry investment plans. This volume is the basis for the yearly production level of (less than) 10 bcm in 2030 as mentioned before.

CONTINGENT RESOURCES

About 200 bcm of contingent resources are currently deemed undevelopable for any of the following reasons: tail end production, small size, difficult reservoir, relatively large distance to infrastructure, low gas quality or location in an environmentally sensitive area. The following resource sub-classes can be promoted from the contingent resources class to the reserves class.

Increased ultimate recovery and field life extension

In the portfolio of currently producing Dutch gas fields, most fields show ultimate recovery factors between 75% and 95%. However, a considerable number of fields currently have lower recovery factors, mostly due to compartmentalisation and reservoir quality. In addition, all fields reaching their end-of-field-life experience low pressure, water production, well instability and increasing opex. As initial development investments can be treated as sunk costs, forward-looking economics provide a strong incentive to extend field life and, that way, increase ultimate recovery. Scenario analysis by TNO points a recoverable volume of up to 100 bcm in case the ultimate recovery can be increased.

Stranded fields

Stranded fields are gas discoveries for which the economics are marginal, i.e. which are currently uneconomic to develop. Recently the government has adopted a screening method for marginal gas, coupled to a fiscal measure for offshore stranded fields. Potential developments are deemed marginal when meeting a criterion which includes factors like limited size, low productivity and remoteness from infrastructure. Analysis by EBN and TNO indicates that an additional on- and offshore gas volume of up to 50 bcm of gas may be produced economically from such sources, provided that the tax measure also applies onshore.

Tight gas and shallow gas

Tight gas and shallow gas are treated here as conventional gas resources¹⁷. Tight gas is defined as gas occurring in low permeability reservoirs of conventional traps. Shallow gas occurs in unconsolidated reservoirs at shallow depth and at low pressure, providing less energy for production. Tight gas and shallow gas have an estimated producible potential in the Netherlands of about 50 bcm.

¹⁷ Tight gas and shallow gas are situated on the boundary between 'conventional' and 'unconventional' gas. Both resource classes concern conventionally trapped gas in reservoirs with unconventional (sub-commercial) low flow rates per well. Contrary to 'truly' unconventional gas like shale gas, it is expected that the application of state-of-the-art technology will mature these resources into conventional gas resources.

CONVENTIONAL EXPLORATION POTENTIAL

The current conventional exploration potential of 200 bcm can be divided into relatively attractive prospects that can be drilled in the next decade, and lower quality prospects, which run the risk of never being drilled. Potential barriers are geological risk and sub-economic recoverable volume.

UNCONVENTIONAL GAS

Unconventional gas occurs in low permeability 'reservoirs' that produce at low rates and therefore require large numbers of wells to develop, thus creating a large ecological footprint. Currently, offshore unconventional gas is considered uneconomic, mainly because of the high well density. The main gas types relevant for the Netherlands are onshore coalbed-methane and shale gas. Yet, significant additional work is required to confirm the actual existence and potential of these resources in the Netherlands and to prove their recovery potential. Based on current knowledge, some 100 bcm is expected to end up being commercially developable, taking into account issues such as drilling cost, the state of drilling and production technology and its further development, and accessibility to surface locations (due to onshore permitting and local resistance).

IN SUM

Without considering the Dutch unconventional gas potential¹⁸, a potential of 400 bcm of conventional contingent and prospective resources (1.6 times the present remaining small fields reserves) is currently identified as a potential, as yet mainly sub-commercial, recoverable volume¹⁹.

IMPROVEMENT OF THE DUTCH MINING CLIMATE

If the Dutch annual production level from small fields is to be maintained at 30 bcm by 2030, economically viable improvements to the Dutch mining climate are required. To that end, the Working Group 'Mining climate' has identified several technical and financial enablers, as well as social enablers, and proposed measures to facilitate their implementation. The main ones – identified as the key means to move forward – are set out below.

TECHNOLOGICAL ENABLERS

Typical technological enablers for increased ultimate recovery include hydraulic fracturing (also suitable for tight gas), well deliquification (i.e. injecting foam) and 'enhanced gas recovery' (i.e. injection of N₂ or CO₂). In addition, improved seismic technology (especially time-lapse and unconventional sweetspot detection) will be essential. Economic development of unconventional gas and small volumes of stranded gas, both characterised by low flow rates, will require direct on-location conversion of gas into electricity for local use ('gas-to-wire').

¹⁸ Currently, the Dutch unconventional gas potential is considered rather limited (about 100 bcm) and only producible in the long term after successful pilot projects (and therefore ultimately after 2030).

¹⁹ This volume is only indicative, as further research is necessary to determine the actual commercially viable gas volumes.

Facilitating measures

In order to create sufficient critical mass, technological enablers are to be facilitated by novel ways of coordinated industry cooperation. This cooperation includes shared use of knowledge and equipment, shared pilot-testing and shared deployment of novel technologies in the Netherlands. In order to stimulate this cooperation, several stakeholders should play a coordinating role (e.g. NOGEPa, EBN and the Ministry of Economic Affairs, Agriculture and Innovation). Specifically concerning joint knowledge development and deployment, also a national 'Upstream Technology Research Development and Deployment (RD&D) programme might be founded. This programme would be industry-initiated, partly government-funded (e.g. from the gas benefits) and executed by the operators, the service and supply industry and public/private research institutes.

FINANCIAL ENABLERS

1 Industry-driven

The capital expenditure (capex) for extending end-of-field-life, developing stranded fields and bringing unconventional resources to reserves is estimated to amount to tens of billions of euros for the coming 20 years. In addition, reducing the opex by half would result in additional reserves of around 5%. Conversely, doubling the opex would result in a loss of some 10%.

Facilitating measures

The Dutch E&P industry has a good track record in applying new technology to reduce costs. Small, unmanned platforms and light drilling rigs are just some examples. To continue this trend, industry cooperation is essential, not only between operators but also with contractor companies in construction, services and supply. In that respect, sector organisations such as NOGEPa and IRO should take the lead. On the opex side, operators should be stimulated to pool and share personnel, equipment and logistics, for which cooperation between NOGEPa and EBN is essential. For shallow gas, effort should be put in a relaxation of upstream transport specifications (e.g. a lower entry pressure to avoid back-out) or injection in low pressure gas networks. For high risk unconventional resources, coordination in exploring these prospects is recommended. Already in the exploration phase, large scale land use is an impediment for permitting, resulting in time-delays, local resistance and large overhead costs. Therefore, it is proposed that EBN performs a nation-wide ranking of unconventional opportunities, secures the relevant acreage and then searches actively for an industry partner to test the top ranking play.

2 Government-driven

By means of a tax system change, the Dutch government can ensure that E&P investments in the Netherlands can compete with opportunities elsewhere in the world. Currently, the Dutch tax rate for oil and gas companies is set at a maximum of 50%, whereas for all other companies a rate of 25.5% applies (for taxable profit exceeding 200 000 euro). Therefore, it could be considered to apply the 25.5% rate under certain conditions in E&P as well. Alternatively, the government could design a fiscal regime

depending on the field life-cycle. For example, some additional tax incentives can aim at reducing the development cost of exploration success, whereas other fiscal stimuli such as a government take reduction to compensate for higher unit opex, aim at prolonging end-of-field gas production. As nation-by-nation specifications are driving up costs (and sometimes lead to implementation delay of new technology), it is also recommended to review possibilities for relaxing import specifications for oil industry equipment, especially when originating from North America (but also within the EU). Furthermore, it is suggested to consider possibilities making the participation percentage of EBN more flexible (currently set at a maximum of 40%) in the E&P of small fields.

Facilitating measures

It is recommended to review the impact of tax changes on both the resulting incremental gas production and state income. However, such review can only be carried out effectively in a joint effort between industry and the ministries of Economic Affairs, Agriculture and Innovation and Finance, in order to ensure appropriate parameter setting. A similar exercise can be carried out to determine the effect of changes in equipment import specifications or the participation percentage of EBN. In that respect, possible improvements should also be evaluated in an EU context in consultation with the service and supply industry.

SOCIAL ENABLERS

Currently, the State's gas income flows to the National Treasury; citizens are not being provided with clear insights into how and/or to what extent these gas benefits flow back to their regions or communities. More and more often, this lack of visibility negatively affects the permitting process for onshore E&P activities by lowering public acceptance for such activities without visible benefits (cf. "what's in it for me?"). Therefore, it is recommended to investigate ways to create a transparent flow of financial benefits to local/regional communities. Similar to Australia, Canada and the USA, where such systems work effectively, the provinces might be suited best for distributing (some of) the gas benefits, among others because the provinces are responsible for the regional plans ("streekplannen") and associated permitting. One of the ways to achieve transparency could be to create a provincial fund, fed by national gas benefits.

A PACKAGE APPROACH

As not all enablers suit all gas resource classes, they are differentiated per gas resource class. Therefore, it is recommended that government implements a package approach by linking a certain enabler to a certain gas resource class.

RECOMMENDATIONS

It is concluded that economically viable improvements to the Dutch mining climate are required (and possible) to adequately support the next phase – one of maturity – in the Dutch gas history. The following recommendations are made:

- Coordinated industry cooperation to share deployment of novel technologies to develop "difficult" gas. NOGEPa and/or EBN could play this coordinating role;

- Foundation of a national “Upstream Technology Research Development & Deployment Programme”;
- Operating companies to pool & share personnel, equipment and logistics in order to reduce operational costs;
- In order to develop technology for cost reduction, cooperation between operators and contractor companies in construction, services and supply is key and should be championed by NOGEPA and IRO;
- EBN is to perform a nation-wide ranking of opportunities for unconventional gas, secure the relevant acreage and test the top ranking play with an industry partner;
- Consider a change in tax system, to ensure that E&P investments in the Netherlands can compete globally. Tax incentives can be created differentially following the field life cycle or linking it to a certain gas resource class;
- Industry and ministries of Economic Affairs, Agriculture & Innovation and Finance to jointly review the effect of above tax changes on resulting incremental gas production and state income;
- Investigate ways to create a transparent flow of national financial gas benefits to local/ regional communities, for instance by installing a provincial fund. Aim is to improve public acceptance of onshore E&P activities, thus avoiding unnecessary delays in permitting.

However, this will take time, as an evaluation process needs to be worked out and decision making processes need to be started. Therefore, it is recommended to continue the activities of the Working Group ‘Mining Climate’ after the second meeting of the Gas Hub Consultative Platform:

- In order to further study (a selection of) the identified gas exploration & production enablers in more detail, based on a clear mandate provided by the Minister of Economic Affairs, Agriculture and Innovation;
- To that end, consider the extension of the Working Group with additional members from the industry, contractors, knowledge institutes and the government;
- Appeal to both the industry and the government to commit them (in a memorandum of understanding) to the continuation of the Working Group and to invest a certain amount of means (either human or financial) in support of this continuation.

Together, the Working Group members should be able to elaborate instruments to stimulate production from different kinds of conventional gas sources and support further study on resource assessment of unconventional gas in the Netherlands.

4 THE GAS HUB COMMUNICATION STRATEGY

The Gas Hub communication strategy is a long-term strategy to improve the perception of the role of gas in the future energy mix. The communication action plan consists of a coherent set of actions per target group that are planned to be executed starting in the coming year. This action plan starts from the existing tools, resources and actions of all the Gas Hub Consultative Platform's participating companies and associations.

THE NEED FOR A GAS HUB COMMUNICATION STRATEGY

For gas to play an important role in the future energy mix in Northwest Europe and the development of the Gas Hub, the perceptions regarding gas need to change in a positive manner. Although a more positive image of gas and the Dutch Gas Hub has been growing recently, there still appears to be a mismatch between the current incorrect image and the desired, realistic image of gas and the Gas Hub. The current image of gas contains negative preconceived opinions (e.g. gas is polluting, gas is finite...) and is, among some target groups, even non-existent.

In order to cope with this mismatch, a clearly defined and consistent communication strategy is required. Such a strategy has the ambition to lead to the desired, more positive yet realistic image of gas: gas is the cleanest fossil fuel; gas is abundantly available, reliable, and affordable and is, due its unique flexibility, a natural partner for renewable energy sources.

THE GAS HUB COMMUNICATION STRATEGY

GOAL

The goal of the Gas Hub communication strategy is to improve the image of gas among the relevant target groups. A positive yet realistic image of gas will contribute to improving the perception of the Gas Hub's socio-economic benefits (e.g. jobs, investments...). Any communication on the Gas Hub should be preceded by explaining and enhancing the role of gas in a sustainable society.

TARGET GROUPS AND COMMUNICATION MIX

The following nine target groups are relevant for this communication strategy:

- **Gas Policy Makers:**
 1. Dutch ministries;
 2. Dutch House of Representatives;
 3. European Commission;
 4. European Parliament;
- **Gas Policy Influencers:**
 5. Energy industry;
 6. Large business customers;
 7. NGOs;

8. Research/Knowledge institutions & energy opinion leaders
- (9) General Public

Analysis revealed that some of these target groups have an incorrect or sometimes non-existing image of gas and the Gas Hub. Though, each of them has its own characteristics and specific perception of gas as an energy source. The gas communication strategy takes into account the differences between the target groups and includes a tailor-made communication mix for each target group.

MAIN MESSAGE & KEY MESSAGES

The Gas Hub communication strategy is built around one conveying **main message**, consisting of the 3 powerful A's "Acceptable", "Affordable" and "Available":

GAS HAS A VITAL ROLE TO PLAY IN THE LONG-TERM ENERGY FUTURE FOR THE NETHERLANDS AND EUROPE, BECAUSE IT IS ENVIRONMENTALLY ACCEPTABLE, FINANCIALLY AFFORDABLE AND ABUNDANTLY AVAILABLE FOR AT LEAST THIS CENTURY

Under the umbrella of the main message, five distinct powerful **key messages** can be identified:

- Gas is the cleanest fossil fuel;
- Gas is a natural partner for renewables;
- Gas is abundantly available;
- Gas is a reliable energy source;
- Gas is affordable & cost competitive.

Each of these messages counters a possible negative aspect of the current image of gas and can be supported by research-based facts and figures.

The main message needs to be communicated as a whole and as consistent as possible during all possible communication initiatives, providing evidence of the strong engagement of both government and industry to cooperate in order to further strengthen the Gas Hub and its socio-economic benefits (e.g. jobs, investments...).

BI-ANNUAL EVALUATION AND DEVELOPMENT OF NEW COMMUNICATION INITIATIVES

The impact of this communication strategy will be evaluated on a bi-annual basis. New communication initiatives can then be defined to further improve the perception of gas.

RECOMMENDATIONS

The following recommendations are made with regard to a shared gas communication strategy:

- Execute the Gas Hub communication strategy in a coherent and consistent way to improve the perception of the role of gas in the future energy mix in and outside the industry and to provide evidence of the strong engagement of both government and industry to cooperate in order to further strengthen the Gas Hub and its socio-economic benefits;
- Evaluate this strategy and the perception of gas on a bi-annual basis;
- Define and launch new communication initiatives, supported by the industry, in the time leading up to key decision moments in order to further improve the perception of gas.



PARTICIPANTS IN THE GAS HUB CONSULTATIVE PLATFORM AND THE WORKING GROUPS

The working groups of the Gas Hub Consultative Platform contained experts and senior representatives, in a private capacity, from the following companies and organisations.

WORKING GROUP "THE ROADMAP OF GAS AND THE GAS HUB"

Clingendael



Delta



DONG Energy



ECN



Eneco



ExxonMobil



Fluxys



GasTerra



Gasunie



GDF SUEZ



GTS

gas-transport-services

NMa*



NUON



RWE/Essent



Shell



TAQA



TNO



* The NMa (Dutch Competition Authority) is present at the meetings of the Gas Hub Consultative Platform as an observer.

WORKING GROUP "THE POSITION OF GAS: A COMMUNICATION STRATEGY"

Delta



ExxonMobil



GasTerra



Gasunie



GDF SUEZ



NOGEPa



RWE/Essent



Shell



TNO



WORKING GROUP “THE INTERNATIONAL POSITIONING OF THE GAS HUB”

APX-Endex



Dong Energy



ExxonMobil



Fluxys



GasTerra



Gasunie



GDF SUEZ



NMa*



Nuon



RWE/Essent



TNO



Wintershall



* The NMa (Dutch Competition Authority) is present at the meetings of the Gas Hub Consultative Platform as an observer.

WORKING GROUP “THE DUTCH MINING CLIMATE”

EBN



Fugro



GasTerra



Gasunie



GDF SUEZ



NAM



RUG



TNO



TU Delft



Wintershall



OTHER MEMBERS OF THE GAS HUB CONSULTATIVE PLATFORM

EDI



Ministry of Economic Affairs, Agriculture
and Innovation



Ministry of Economic Affairs,
Agriculture and Innovation



