Results in the fields of safety, the environment and supply chain responsibility

Safety: always a priority

An important enabling factor for carrying out our activities is the safety of our employees and the communities in which we work. A priority for us is therefore to create a safe and healthy workplace and to minimise risk to the natural environment. Since safety is an important indicator of the quality of our work, we want to be one of the best international gas infrastructure companies in terms of safety performance. European benchmarking of similar gas transport companies, carried out by Marcogaz (the representative body of the European natural gas industry on all technical issues), shows that we are already one of the best within our reference group, and we naturally strive to maintain this position.

Research into safety culture and behaviour

We pay a great deal of attention to the safety behaviour of our employees. To find out whether we can improve this even more, we started a study in 2013 into the internal safety culture and safety behaviour of our employees. The study is intended to serve as a thermometer, giving us insight into where we are now, what is going well, what can be improved and which trends we see. We aim to work towards a culture in which people automatically think of and choose safe options that are not subject to pressures of time or money. We intend to repeat this study regularly, so that we will gain insight into developments over time, and can determine how effective our projects and actions are.

Our results in the area of occupational safety

In November 2013, despite all our efforts in the field of safety, a fatal accident with a crane occurred involving one of our contractors – an accident we deeply regret. We will follow closely the investigations by the contractor and the Health & Safety Inspectorate into the cause of this tragic accident, and together we will determine what measures need to be taken in order to prevent such an accident occurring again.

Number of injuries resulting in absence per million hours worked	2013	2012
Gasunie employees in the Netherlands	**0.9**	0.4
Gasunie contractors in the Netherlands	**1.0**	1.7
Gasunie total	**0.9**	1.2

Number of injuries resulting in absence		
Gasunie employees in the Netherlands	**2**	0
Gasunie employees in Germany	**0**	1
Gasunie contractors in the Netherlands and Germany	**3**	7

Number of reportables per million hours worked		
Gasunie total (the Netherlands + Germany)	**3.6**	2.5

By reportables we mean all injuries resulting in fatalities, absence, replacement work or requiring medical treatment (other than first aid).

We also record the number of potentially dangerous incidents (incidents that did not result in injury but could have had serious consequences). In 2013, we registered 20 of these; in 2012, 17. We carefully analyse these dangerous incidents to prevent a recurrence.

Process safety: new KPIs

Besides occupational safety, we also work hard on 'process safety'. Process safety relates to large incidents whereby hazardous substances and/or large amounts of energy are released. Inspections which we carry out as a consequence of the EU Directive on Major Accident Hazards (DoMAH) showed that our performance could be better. In 2013, we therefore mapped out how we could improve our efforts in this field. Employees explored this topic together in brainstorm sessions. We also used benchmarks as input for our discussions. Based on the outcomes of these sessions, we drew up some twenty KPIs covering the most important aspects of process safety. As of 2014, we will apply these to measure, monitor and improve our performance in process safety.

Technical safety: safe management and maintenance of our pipelines and installations

All our installations, including our transport installations, comply with the legal requirements for external safety. To keep our underground pipelines in good condition, we take both preventative and corrective measures. In particular, we carry out ongoing inspections, which play a key role in helping us to ensure the integrity of our transport system.

We inspect our underground pipelines, both on the inside and on the outside. For inspecting inside the pipelines, we use intelligent 'pigs', robots that are carried through the pipelines by the gas flow. In 2013, in the Netherlands, we inspected some 267 kilometres of HTL pipelines (2012: 295) in this way and 196 kilometres of RTL pipelines (2012: 280). In Germany, we inspected 278 kilometres. We also checked another 76 kilometres of pipelines for which we could not use the robots, and instead used an above-ground inspection method, the External Corrosion Direct Assessment (ECDA). ECDA is a method we developed ourselves for inspecting pipeline segments that cannot (or only with difficulty) be examined by 'pigs'. In 2012, we inspected more than 80 kilometres using ECDA.

Besides providing information, placing marker poles above the pipelines and carrying out visual inspections, we also carry out aerial surveys of our pipeline routes by helicopter. In 2013, these aerial surveys revealed a variety of anomalies. Where necessary, we took immediate action to maintain a safe situation.

Corrosion assessment: new insights

In 2013, we gained new insights and made new calculations regarding corrosion. In practice, it turns out that corrosion does not take place as quickly as used to be thought. We have therefore modified our pipeline inspection policy accordingly. As a result, we can use our inspection tools more efficiently, without affecting the technical safety of our pipelines.

External safety: bottlenecks resolved

In 2011, the Decree on the External Safety of Pipelines came into force in the Netherlands. The decree, which is designed to ensure that pipelines are situated in safe locations, requires that measures are taken within three years to resolve bottlenecks at locations that have vulnerable objects within the '10-6 contour'. To comply with this legislation, in 2010 and 2011, we mapped out existing and potential bottlenecks. We then asked all local authorities involved whether the situation we had mapped out indeed reflected the situation on the ground (e.g., with regard to the presence of people and buildings). On that basis, our route managers have since developed and applied appropriate measures in each case.

We made good progress in this regard in 2013. Most bottlenecks have now been cleared. The

few remaining locations where we have not yet been able to take appropriate measures will be dealt with at a later date. At a few other locations, we are still waiting to see whether the proposed measure has actually solved the issue.

From 2014 onwards, we will take additional measures in situations that pose a risk to groups of people. In such cases, the risk to each individual remains within the safety norm, but it concerns a larger number of people at any one time. Although in these cases there is no direct legal obligation to take measures, in consultation with the Ministry of Infrastructure and the Environment, we have decided to take measures anyway since, with relatively little effort, we can reduce risk for a larger group of people.

Pipeline incidents

To guarantee safe and reliable gas transport, our infrastructure should not be disturbed. We therefore strive to make sure that no natural gas is released as a result of damage to our pipelines. Excavation works are the main cause of damage to our underground pipeline network.

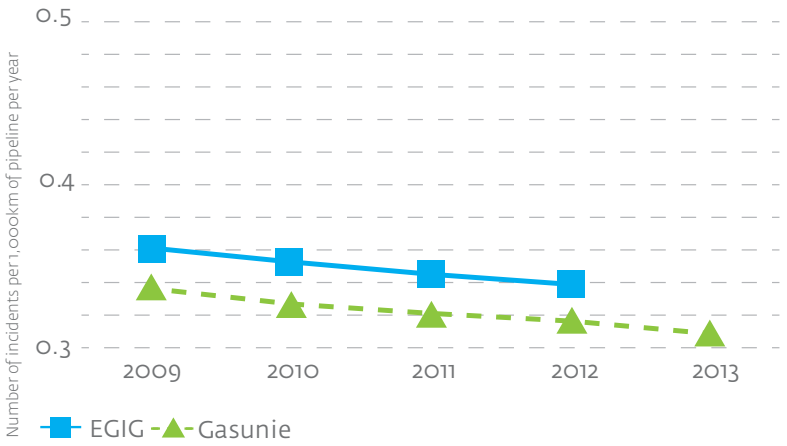
In 2013, we reported six incidents of pipeline damage caused by mechanical excavation. In none of these cases did any gas leak into the air (in 2012, there were five such incidents, one of which involved a gas leak). In addition, due to a structural defect, there was one incident of pipeline damage with a very minor gas leak. There were no incidents of pipeline damage due to excavation at Gasunie in Germany in 2013 (2012: 1).

Our results compared with others: European benchmark for pipeline incidents (EGIG)

As all European gas transport companies record their pipeline incidents in the same way, we can easily compare our performance in this part of the gas transport chain with that of other companies. With regard to pipeline incidents with gas leaks, we score better than the European average (source: database of the European Gas Pipeline Incident Data Group, EGIG).

Comparison of Gasunie versus EGIG

(moving average number of incidents with gas leaks)



* EGIG-average for 2013 not yet available

Safety: opportunities for improvement

We go to great lengths to make sure that our safety performance is excellent. However, in some respects, there is still room for improvement.

Investigation of pipeline incidents

In 2013, several incidents took place in which our pipelines were damaged during excavation works. A remarkably high number of these incidents occurred during activities which we had commissioned and even supervised ourselves. This was despite the fact that we have invested considerably in providing supervision and specifying procedures, precisely with the aim of reducing the chances of damage to our pipelines as much as possible.

We take such matters very seriously, and are keen to learn from these mistakes and take measures to prevent a recurrence. We therefore analysed the relevant incidents in detail, including interviewing those involved. The investigation showed that the fault did not lie with a lack of appropriate procedures or tools, but rather that, for various reasons, they were not always fully followed or used. We have therefore added two additional managers to our own team of supervisors. Extra attention will be paid to following a uniform way of working, in accordance with the agreed procedures. This will be monitored closely.

Increasing safety regarding integrity of purchased materials

Over the past few years, as a result of incidents involving materials such as pipe tees, line pipes and reducing tees, we have conducted several investigations into the supply of materials that do not conform to the specifications in our orders. From our own internal research and external research by the sector, it appears that statements made by suppliers regarding the composition and requirements of the products delivered cannot always be relied upon to be accurate, even if the suppliers are being supervised by an independent inspectorate. This does not necessarily mean that the materials deviate from the order to such an extent that they pose a threat to process safety, but it is certainly true that they are more likely to do so if the properties of the materials are not as ordered. Moreover, if the discrepancy is discovered just before the materials are needed, the project may be delayed if the materials require further inspection and no other, demonstrably correct, materials are available.

We have therefore reviewed our materials purchasing policy. To increase the reliability of the delivered materials – and thus reducing process safety risks as well as project risks – we are modifying our purchasing strategy and the supervision of the delivered materials. Part of the new policy will be for us to buy materials under the supervision of an independent inspectorate. We will also check the qualifications of our suppliers by scrutinising their technical skills, their organisation and their quality management. These qualifications will need to be renewed periodically. In the meantime, we will check the reliability of our suppliers by carrying out spot checks. Since this process is very time-consuming, we will look for suppliers with whom we can build up long-term relationships.

The qualifications process will be carried out at the beginning of 2014. We will focus on suppliers who are important to our multi-year replacement programme.

Supply chain management

The world is facing some major challenges in the field of energy. Global demand is increasing, while the emission of greenhouse gases, such as CO_2, is giving rise to climate change. A transition towards a more sustainable energy supply is therefore necessary. As part of the gas value chain, we are keen to contribute to this transition. We currently do this in various ways; for example, by developing sustainable business activities, dealing responsibly with the environment, and reducing our own carbon footprint. In our policies, we also support the Dutch government's objectives: 20% less CO_2 in 2020 (compared to 1990), annual energy savings of 2%, and 14% sustainable energy generation in 2020.

Gas value chain

As a natural gas transport company, we play an important role in the gas value chain, which stretches from production to user applications. It is a chain that links together gas producers, suppliers, shippers, national and international network operators, gas transport companies, industries and power stations connected directly to the national grid, as well as end-users and domestic households.

Cooperation within the chain

In this continuously changing market and society, cooperation within the chain is crucial. We participate in both 'horizontal' and 'vertical' cooperation. We take part in a wide variety of relevant international, national, regional and local partnerships. They focus on many different aspects of the gas value chain, such as the exchange of knowledge and best practices, the development of clean and efficient energy applications, and the development of the green gas market in the Netherlands.

We also take part in a number of national and European working parties (including the CEN and ISO standardisation committees) aimed at establishing standards and norms for gas transport management systems. A good example of cooperation in this field is the Pipeline Integrity Management System (PIMS), which we developed in-house. This is a tool for determining and managing pipeline integrity. We have signed cooperation agreements with many other gas transport companies, which has resulted in various of these parties also implementing PIMS.

We also participate in several 'vertical' collaborations in the field of energy, such as Gas Infrastructure Europe (GIE), ENTSOG, Marcogaz, Energy Delta Institute (EDI) and Energy Valley.

Green gas

We are dedicated to promoting green gas as an efficient and sustainable energy option. It is the Dutch government's target to have five billion m^3 (48.8 billion kWh) of green gas being used in the country by 2030. Gasunie is eager to contribute to the development of the green gas market in the Netherlands; we are active in the feed-in of green gas and its certification. The Netherlands' strong infrastructure will provide a solid foundation for this, and enable us to take the next step towards a more sustainable energy supply.

Biogas from fermentation and gasification has a huge production potential for the future. As production increases, we shall see green gas hubs being built – centralised facilities to which biogas producers are connected. In these facilities, biogas will be upgraded to natural gas quality, and will then be transported through our gas transport network and regional networks and delivered to industrial and domestic users as green gas.

Investing in a market that is not yet well-developed naturally involves risks. However, we are keen to promote the development of a green-gas market, and have therefore been working with others to develop ways in which green gas can be safely fed into our network. The market has shown a great deal of interest in feeding gas into our national transport network, also via green gas hubs. Here, too, we play a facilitating role; for instance, by participating in the Green Gas Taskforce.

Vertogas

Vertogas, one of our subsidiaries, is an autonomous and independent company that facilitates the trade in green gas through its certification system. Vertogas certificates state the origin of the green gas and the types of biomass used in its production. This provides green-gas traders and customers with a guarantee that they are dealing with genuine green gas. A recognised green gas certification system is essential for the further development of the green-gas market. The Dutch Gas Act (2013) recognises Vertogas as a certification authority for green gas. This legal status will take effect in 2014.

Green-gas cars

Cars that run on green gas release less CO_2 and fine particles than cars that run on other fuels. In 2012, as a part of our footprint reduction policy, we started to 'greenify' our fleet of vehicles. We initiated a pilot project with 21 company vehicles used by staff to maintain our gas transport network. In due course, we aim to have our whole fleet of 284 vehicles running on green gas. Reports so far are positive. We also give employees who are eligible for a lease car the opportunity to choose a lease car that runs on green gas. In 2013, several employees already availed themselves of this opportunity.

Environmental performance

Minimising our impact on the environment

Some of our business activities – activities characteristic of the gas industry – have an impact on the environment. These include the laying of pipelines, the construction of gas installations, the pressurising, transporting and blending of natural gas, metering and regulating gas flows, reducing gas pressure and maintaining installations. Such activities require energy, and that brings with it the occurrence of emissions. In addition, substances we use to ensure the safe functioning of gas transport installations, such as glycol and lubricating oil, also affect the environment, as do the activities in our offices, albeit a limited one.

We do everything in our power to keep harmful emissions to soil, water and air to a minimum, and we have a drawn up a policy with concrete environmental objectives that is designed to help us achieve this.

Certified environmental care

To guarantee that we take the environment well into account in relevant business processes, we have an environmental management system (EMS) that is certified to the ISO 14001 standard. To ensure compliance with this standard, our management system is checked annually by an external auditing agency.

CO_2 emissions

It is our ambition to take a leading role in reducing CO_2 emissions. In cooperation with a number of other companies, we aim to have in place CO_2 neutral energy provision by 2050. In order to fulfil this ambition, we have set out a strategy with an interim milestone. This milestone is a 40% reduction of CO_2 equivalents[3] by 2030. This is in line with related developments in Europe. We can achieve this reduction across the whole scope of the Green House Gas Protocol (GHG Protocol), as explained below. We will continue to observe the reduction target that we had already set for 2020.

In an absolute sense, our target entails a reduction of 124 kilotonnes of CO_2 equivalents. Last year, we adjusted this target upwards, compared to previous years, from 93 to 124 kilotonnes. This is due to new insights into the calculation of the base year. A number of emission sources were not included in the original calculation, because they were not yet known at the time. But over the past few years, we have gained more, and also better, information about emissions. This is why we decided to adjust the total amount of CO_2 equivalents for the base year 1990 from 478 kilotonnes of CO_2 to 618 kilotonnes.

In the future, emissions of greenhouse gases (CO_2 equivalents) could play a fundamental role in governments' decision-making in the field of energy. That is why we need to develop an unambiguous and transparent way of reporting within our sector, so that the right choices can be made. In anticipation of this development, we report about our CO_2 emissions as transparently as possible.
Ronald Kenter, Quality & Environment Coordinator at Gasunie

The emissions that we now understand better are 'fugitive emissions', such as small leaks of natural gas at connections or appendages. They are found at gas receiving stations, metering and regulating stations, and valve stations.
As of 2013, we have been reporting in accordance with the standard of the Greenhouse Gas Protocol (GHG Protocol). This protocol for greenhouse gases distinguishes three 'scopes', ranked according to the origin of the greenhouse gas. These scopes are:

Scope 1

Scope 1 includes all emissions that are a direct result of our own activities (e.g., the CO_2 emissions of gas-fired compressors and engines used for compression; our own gas consumption for heating buildings and for the boilers at gas receiving stations). Scope 1 also includes the CO_2 equivalents from methane emissions, and the emission of hydrofluorocarbons (HFCs), which are used in cooling processes.

Scope 2

Scope 2 includes the indirect emissions of energy that has been procured (e.g., from an electricity company). In our case, the CO_2 equivalents in Scope 2 come mainly from the use of electricity for electrical compressors and for the production of nitrogen. Scope 2 also includes the electricity consumed in our offices and our installation buildings.

Scope 3

Scope 3 includes all other indirect emissions resulting from our business operations (e.g., road, air and rail travel and energy required for producing the nitrogen we procure).
In 2013, a number of network operators in the Netherlands developed a new model for

3 Using Global Warming Potential (GWP), CO_2 and CH_4 emissions can be converted into a measure of the enhanced greenhouse effect, the 'CO_2 equivalent' emissions. The GWP for CO_2 is set to 1 and the GWP for CH_4 to 25.

reporting CO_2 emissions on the basis of the Green House Gas Protocol. We are applying this model as of the year under review. Since the model is not entirely the same as the model of previous years, our current report only includes the totals of Scopes 1, 2 and 3 when referring to years prior to 2013.

		CO_2 equivalents [in kilotonnes]														
		2009			2010			2011			2012			2013		
Scope	Emission source	GUN[1]	GUD[2]	GU tot.[3]	GUN	GUD	GU tot.	GUN	GUD	GU tot.	GUN	GUD	GU tot.	GUN	GUD	GU tot.
1	Lease cars													2.8	-	2.8
	Company cars													1.2	-	1.2
	Gas usage in buildings													1.6	-	1.6
	Network losses													238	17	255
	SF6													-	-	-
	Gas usage in installations													200	113	313
	Emergency generators													0.04	-	0.04
	Refrigerants													0.2	-	0.2
	Total of Scope 1	361	87	448	404	106	510	316	106	422	332	121	453	444	131	575
2	Heating in buildings													-	-	-
	Electricity usage in buildings													3.3	-	3.3
	Electricity usage in installations													164	-	164
	Total of Scope 2	141	4	145	135	4	139	160	4	164	138	5	143	167	5	172
3	Train travel													0.01	-	0.01
	Business travel													0.3	-	0.3
	Commuting													1.3	-	1.3
	Air travel													0.3	-	0.3
	Procurement of N2													2.0	-	2.0
	Total of Scope 3	46		46	16		16	7		7	2		2	4	-	4
	Total of Scopes 1 + 2 + 3	**548**	**91**	**639**	**555**	**110**	**665**	**483**	**110**	**593**	**472**	**126**	**598**	**615**	**136**	**751**

Table: CO_2-equivalent emissions according to the Greenhouse Gas Protocol

1 GUN = Gasunie in the Netherlands

2 GUD = Gasunie in Germany

3 tot. = total

The total CO_2-equivalent emissions in 2013 were higher than in 2012. This increase is mainly due to the fact that, since last year, we have come to understand our CO_2 emissions better (as explained above). As of 2013, we have therefore adjusted our CO_2 emissions upwards by approximately 90 kilotonnes. This adjustment does not apply to the years prior to 2013.

CO_2 equivalents due to natural gas consumption rose by approximately 36 kilotonnes. Of this quantity, about half was due to the deployment of a flare on the LNG terminal at the Maasvlakte location. CO_2 equivalents due to electricity consumption rose by 29 kilotonnes, due to the deployment of additional electric compressors.

Methane emissions

	Unit	2009	2010	2011	2012	2013
Methane emissions GUN	Tonnes	6,111	6,480	6,740	6,705	**9,514**
Methane emissions GUD	Tonnes	741	741	436	363	**690**
GU total	Tonnes	6,852	7,221	7,176	7,068	**10,204**

Methane emissions in 2013 were higher than in previous years. This increase is also due to the fact that we are now able to measure fugitive emissions of natural gas more accurately. Fugitive emissions at gas receiving stations, metering and regulating stations and valve stations are measured on the basis of limited random checks at all stations. We measure all gas receiving stations separately. So far, we have mapped the emissions of 40 out of the 1,150 stations. In 2013, we also recalculated the emissions of the compressor stations.

In Germany, methane emissions rose compared to 2012. This is because, at two installations (Heidenau and Folmhusen), a number of tests had to be carried out for the purposes of commissioning activities. During these tests, the pressure had to be reduced.

Methane emissions not only occur in the form of fugitive emissions, but are also due to gas venting during maintenance work. Venting is needed to enable work to be carried out safely. Of course, we try to prevent these emissions as much as possible. (See below: *Recompression for work on pipelines*). Methane is also released when the compressors are started and stopped, and during the use of measuring equipment.

Footprint reduction

In 2013, we continued to investigate ways of reducing our footprint, and carried out various projects for this purpose, including an elaborate 'leak detection and repair' (LDAR) programme, which we carried out at our large compressor stations and the LNG Maasvlakte location. For this, we measured 22 locations and assessed a total of 421,000 potential sources of leaks. Gasunie Deutschland also carried out many inspections in the context of our LDAR programme. On the basis of these details, we will be able to take appropriate measures to reduce the number of identified leaks.

Measuring methods

There are several common ways of estimating fugitive emissions of natural gas, such as bagging, EPA21 and the Marcogaz method. However, these different methods yield different results. We measured our fugitive emissions by using the EPA21 method. In 2014, we will compare the different measuring methods to obtain more certainty about the accuracy of this method. In 2014, we will also carry out more emission measurements at stations and take further measures to reduce natural gas emissions.

Recompression for work on pipelines

We try to avoid venting gas during pipeline activities as much as possible. However, it is sometimes necessary to vent the gas so that work on the natural gas pipelines can be carried out safely. For some years, we have been using a recompression unit with which we recompress as much as possible of the gas that would otherwise have had to be vented, and transfer it to another pipeline. This reduces the amount of gas vented. In 2013, we recompressed almost 2.3 million m^3 (n) of natural gas, which is equal to 33 kilotonnes of CO_2 equivalents.

Use of the mobile recompressor is rather costly: a minimum of some € 20,000 each time. The more gas that is recompressed during operations, the more cost-efficient this recompression becomes. In 2013, we estimate to have saved nearly half a million euros on natural gas costs by deploying the mobile recompressor.

We apply various techniques to empty our pipelines of gas. The table below gives an overview of the volumes of natural gas that have been released using these techniques.

Technique	2013 m^3 x 1,000 gas
Decreasing line pack	**1,826**[4]
Recompression	**2,268**
Flaring	**0**
Venting	**1,152**

In 2013, more gas was vented than in 2012. The main cause for this was that, during the dismantling of an unexploded bomb dropped during WWII, we had to vent natural gas in one of the pipeline segments for safety reasons. This released approximately 245,000 m^3 of natural gas. In addition, we had to vent a pipeline segment when we were installing new equipment at the compressor station in Ommen (the Netherlands). This released approximately 240,000 m^3 of natural gas.

Waste

The very diverse activities we carry out result in waste. In the light of safety considerations, environmental regulations, the need for good environmental care and maintaining good cost control, we naturally want to dispose of this waste responsibly. We comply with the regulations laid down in the Environmental Management Act and the various environmental permits that we obtain for our activities.

As part of our legal and social responsibility with regard to waste, we apply 'Lansink's Ladder'. Lansink's Ladder states the priority with which waste should be managed: Prevention, Re-use, Recycling, Incineration and Landfill.

4 This is an estimate we based on switch programmes that we use during pipeline operations. These enable us to safely make pipelines gas-free and continue gas transport without interruption by means of re-routing.

Waste	2009 (tonnes)	2010 (tonnes)	2011 (tonnes)	2012 (tonnes)	2013 (tonnes)
Hazardous waste					
Gasunie in the Netherlands	1,804	1,494	3,135	2,632	**4,233**[1)]
Gasunie in Germany	na[*]	22	59	50	**41**
Non-hazardous waste					
Gasunie in the Netherlands	14,072	14,316	15,678	22,495[2)]	**16,029**
Gasunie in Germany	na	219	290	585	**127**
Disposal of hazardous and non-hazardous waste					
Re-use					
Gasunie in the Netherlands	88.2%	90.5%	85.1%	89.2%	**89.1%**
Gasunie in Germany	70.0%	83.8%	83.2%	92.0%	**75.8%**
Incineration					
Gasunie in the Netherlands	7.5%	6.3%	6.5%	4.4%	**1.7%**
Gasunie in Germany	na	9.5%	16.8%	7.9%	**24.2%**[3]
Landfill					
Gasunie in the Netherlands	4.3%	3.2%	8.4%	6.4%	**9.2%**
Gasunie in Germany	na	7.7%	0.0%	0.0%	**0.0%**

[*] na = Not available/not registered

1) There are various reasons for the rise in the volume of hazardous waste in the Netherlands in 2013. Some condensation tanks underwent periodical cleaning, during which polluted water was released. In addition, pipeline segments were cleaned using blasting grit, which is processed as a hazardous substance. In projects and other operations, soil and rubble was released that was contaminated with asbestos.

2) An extra quantity of non-hazardous waste was released in 2012 due to the large number of projects carried out in that year.

3) Due to the sharp drop in non-hazardous waste at Gasunie Deutschland, the percentage of hazardous waste in the total amount of waste rose, although the quantity of hazardous waste itself did not. Non-hazardous waste (75.8%) was re-used in Germany as much as possible. Hazardous waste (24.2%) was burned completely.

In 2013, we disposed of a total of 20.3 kilotonnes of waste, which was less than in 2012. This reduction was due to fewer large projects being conducted in 2013.

The ever-diminishing availability of raw materials makes it increasingly attractive to use waste as semi-finished products. This makes waste valuable – although it also means that requirements regarding the separation of waste at source will be stricter than before. At our locations, waste such as chemicals, oils, fats and detergents are collected separately and then taken by accredited waste collection agencies to approved waste processing plants.

Approximately 9% of the waste collected comprises metal. Almost 95% of this metal waste was re-used in 2013. Metal waste is generated mainly during large projects and operations at our installations.
We try to keep waste incineration to a minimum. Waste separation methods that enable re-use are continually improving. As a result of this, a downward trend is noticeable in the quantity of waste incinerated in the Netherlands. In Germany, non-hazardous waste is re-used as far as possible while hazardous waste is incinerated.

We prefer to have the waste resulting from our operations in the Netherlands processed in the country itself, to prevent unnecessary transport. If it has to be processed elsewhere, we make it clear that the use of child labour in processing the waste is totally unacceptable.

Our own energy usage

Natural gas

For the transport of natural gas, we make use of gas turbines and gas motors. Many of these run on natural gas. We also use natural gas to heat gas at gas receiving stations (because gas cools off when pressure is reduced). Finally, we use natural gas for heating our offices and utility buildings.

The amount of natural gas we transport and the fuel we use for compression depends, among other things, on the weather and the demand for natural gas. In 2013, as a result of the prolonged winter, we used 168.7 million m³ of natural gas, a small increase compared to the previous year.

Gas consumption	2009	2010	2011	2012	2013
Consumption in GUN (million m³)	115.4	132.0	82.7	89.4	**104.4**
Consumption in GUD (million m³)	34.2	44.6*	59.0	64.7	**64.3**
Total consumption (million m³)	149.4	176.6	141.7	154.1	**168.7**

** Energy consumption in GUD was higher in 2010 (compared to 2009) because gas consumption at head office was included in the total for the first time.*

Electricity

We use electricity for the production of nitrogen (at the installations in Ommen and Kootstertille), for the compression of natural gas (in Grijpskerk, Anna Paulowna, Scheemda and Wijngaarden), for liquefying natural gas (at the LNG installation on the Maasvlakte), for the compression that is required for storing natural gas in salt caverns (Zuidwending), and for our offices and utility buildings.

Our electricity consumption in 2013 was as follows:

Electricity consumption	2009	2010	2011	2012	2013
Consumption in GUN (million kWh)	299.0	284.5	338.9	382.5	**441.2**
Consumption in GUD (million kWh)	5.8	6.5	6.7	7.3	**7.4**
Total consumption (million kWh)	304.8	291	345.6	389.8	**448.6**

In 2013, less electricity was needed for the production of nitrogen at Ommen and Kootstertille. Nevertheless, electricity consumption in 2013 increased compared to the previous year. There are several reasons for this. Since 2006, as a result of putting the new electric compressors into operation at the locations in Grijpskerk, Anna Paulowna, Scheemda, Wijngaarden and Zuidwending, electricity consumption for the purpose of compression has increased. In 2013, the compressors in Wijngaarden and Anna Paulowna in particular were deployed more often because of the long winter. Together, the installations at Scheemda, Zuidwending, Anna Paulowna and Wijngaarden used approximately 85% of the total volume of electricity. In addition, the LNG tank at the Maasvlakte site was refilled.

Water consumption

We mainly use water for the cooling process in our LNG installation at the Maasvlakte site, for cleaning purposes and sanitary facilities. In 2013, we used approximately 8.7 million m³ of surface water and 46,541 m³ of mains water. The consumption of surface water for cooling in the production of LNG in 2013 was significantly higher than in 2012, because the LNG installation was deployed more often for liquefying natural gas. In 2013, the mains water consumption at Gasunie Deutschland was 1,791 m³.