

ACCOUNTABILITY DOCUMENT

This document has been aligned as much as possible with the accountability documents of other infrastructure companies, particularly with those of the network operators in the Netherlands. Therefore, the same structure has been maintained and some standardized texts have been included in this document.

Introduction

At Gasunie, high priority is given to safety, health, and the environment. Gasunie's activities have a significant social impact on the environment, namely on the economy, nature, and safety in society.

Gasunie makes these social effects transparent by quantifying and valuing them (expressed in a single unit: €). The goal is to increasingly highlight the social value of Gasunie's activities through transparent and (externally) verifiable reports.

Gasunie works, together with various infrastructure companies, on the development, expansion, and harmonization of impact measurement. For example, Gasunie, along with other energy network operators, has worked on the further development of the Handbook for Impact Measurement of Infrastructure Companies (the first version was published under the name Handbook for Impact Measurement of Network Organizations in September 2020 on the Impact Institute's website).

The most recent version (available on the Impact Institute's website) has been enriched with the impact of employee development and includes several methodological improvements. Through collaboration, Gasunie is committed to increasing the transparency of reports, so that in the long term, value creation and decision-making can be guided.

BUILDING ON EXISTING METHODS

Measuring impact aligns with integrated reporting and is the next step in this process. Gasunie reports these figures in accordance with the aforementioned Handbook for Impact Measurement of Infrastructure Companies. This handbook includes several harmonized elaborations and guidelines regarding basic concepts, process steps, and impact calculations, and lays the foundation for agreements on consistent impact measurement and reporting. The handbook builds on the Framework for Impact Statements (2019) and IP&L Assessment Methodology Core (2020) from the Impact Institute, which are based on principles of integrated annual reports.

Scope

To determine the positive and negative contributions Gasunie makes, the relevant impacts have been mapped out using the six capitals model of the IIRC. For a selection of these impacts, the impact has been quantified. The selection of impacts is based on an analysis of materiality, feasibility, and strategic focus on the standard list of defined impacts in the Handbook; see the table below. Gasunie's participations are included in the value of energy and in Gasunie's climate damage.

Capital	Impacts
Produced	Contribution of gas transport to consumer welfare
	Economic added value of energy transport for business customers
	Value of goods purchased for gas transport
Natural	Contribution to climate change
	Ecological damage from material purchases
	Ecological damage from waste
Human	Work-related absenteeism and accidents of employees
	Employee development

The following table shows the indicators used to determine the impacts.

Impacts	Indicators
Contribution of gas transport to consumer welfare	External component - gas - households
	Internal component - gas - households
	Internal component - gas - industry
	Internal component - gas - other final consumers (including energy sector)
	Welfare increase from the supply of green gas
Economic added value of energy transport for business customers	Economic added value of gas for Gasunie's business customers
Value of goods purchased for gas transport	Goods purchased for gas transport - industry
	Goods purchased for gas transport - other final consumers (including energy sector)
	Goods purchased for gas transport - households
	External component - gas - household suppliers
Contribution to climate change	Contribution to climate change from greenhouse gas emissions by the network operator (direct - own organization)
	Contribution to climate change from greenhouse gas emissions by the network operator (indirect - upstream)
	Contribution to climate change from greenhouse gas emissions in the gas chain (indirect - upstream)
	Mitigation of climate change (direct)
	Mitigation of climate change (indirect)

Ecological damage from material purchases	Ecological damage from material purchases
Ecological damage from waste	Ecological damage from waste
Work-related absenteeism and accidents of employees	Non-fatal accidents
	Fatal accidents
	Other work-related absenteeism
Employee development	Employee development

Method

To develop the impact measurement, impacts are first quantified. Then, it is determined which part of the quantified impact is attributed to Gasunie. This is called attribution.

QUANTIFYING IMPACT

In the following chapters, we elaborate on the impact indicators with impact calculations. Here, we explain how the impacts are constructed. For the calculated impacts, the following principles apply:

- *Indicator.* The definition of the impact indicator.
- *Impact.* The positive and negative impact is analyzed and quantified per indicator expressed in social costs and benefits) as these cannot be directly offset against each other.
- *Limitations.* When calculating impacts, criteria, principles, and assumptions are applied, which are explained separately if applicable.
- *Calculation.* The explanation of the calculation of the financial valuation of impact, expressed in social costs and benefits, and the sources used is as transparent as possible. In consultation with experts (Impact Institute) and network operators, the most appropriate valuation technique, the corresponding indicators, and the available information have been sought.
- *Sources.* The sources of the input for the calculation and an explanation of the choice of these sources, if relevant; recent sources are used.
- *Attribution.* The impact is divided among the stakeholders in the value chain.

ATTRIBUTION OF IMPACT

Attributing impact is an important part of measuring impact in the value chain to estimate the portion of the impact that can be attributed to Gasunie. Impact occurs outside Gasunie in collaboration with suppliers (goods and services). A portion of the value of Gasunie's work is attributed to suppliers. Without attributing part of this impact to Gasunie, the impact could be disproportionately large. The value chain is considered from gas extraction to gas usage. Downstream are Gasunie's business and household customers. Upstream are the gas suppliers, material suppliers to Gasunie, and of course, Gasunie itself. Impact is distributed through attribution; dividing the total impact based on responsibility in the value chain.

There is not yet a widely used or accepted method for attributing impact. Therefore, it is important to be transparent about the choices made in this process. The infrastructure

companies (including Gasunie) use the method described in the Integrated Profit & Loss Assessment Methodology (IAM) Supplement Impact Contribution (Handbook for Impact Measurement of Infrastructure Companies). The impact in the value chain is divided based on a) (chain) responsibility and b) economic added value.

Firstly, impacts are categorized according to the responsibility of the value chain players over the impact that arises. A distinction is made between full responsibility and shared responsibility. In the case of shared responsibility, a distinction is made between impacts primarily attributable to the own organization, impacts primarily attributable to other organizations in the value chain, and impacts without a clearly primarily responsible party. Then, the part of the value chain is approached based on the economic added value. For energy transport, the added value is calculated using the share of the network price in the total energy price and then the share of Gasunie within the network price. The final step is to attribute the impact with an attribution factor. This attribution factor is determined based on the identified responsibility of the own organization in the value chain and, if relevant, the economic added value. The calculation of the attribution factors is set up so that the impact of all organizations combined equals the total impact of the chain (no double counting or omissions). Furthermore, if an organization with primary responsibility can be identified, it is allocated the majority (> 50%) of the impact. This is done as follows:

Responsibility for activity that creates impact:	Gsunie's IP&L	(sum of) IP&Ls of value chain partners	Total impact
Only Gasunie	Attribution factor 1: 100%	No attribution: 0%	=100%
Primarily Gasunie	Attribution factor 2a: $50\% + 50\% * \text{added value share}$	Attribution factor 2b: $50\% * \text{added value share}$	=100%
Primarily value chain partners	Attribution factor 2b: $50\% * \text{added value share}$	Attribution factor 2a: $50\% + 50\% * \text{added value share}$	=100%

Value chain
responsability

Attribution
factor 3:

Added value
share

Attribution
factor 3:

Added value
share

=100%

Impact calculation per capital

FINANCIAL CAPITAL

Definition and description of impact

Under financial capital, the financial cash flows are included, divided into different categories. These impact indicators are calculated as direct absolute impact, where the reference does not involve alternative activities. The impacts included under financial capital can be directly traced from the consolidated financial statements of N.V. Nederlandse Gasunie.

Description	Financial cash flows between the organization and involved stakeholder groups.
Stakeholder group	Government, the organization and investors, employees, suppliers, customers.
Activity scope	Financial transactions.
Valence (valuation)	Combination of negative (for incoming cash flows) and positive (for outgoing cash flows).
Attribution	Direct (internal) impacts for which Gasunie is responsible; these impacts are attributed 100% to Gasunie.

Calculation and limitation

The impacts are calculated based on Gasunie's profit and loss account and cash flow statement. Valuation These impact indicators are already financial data (therefore no monetization).

Sources

Profit and loss account and cash flow statement of the annual report of N.V. Nederlandse Gasunie. The data aligns with the consolidated profit and loss account and cash flow statement. This includes the incoming and outgoing cash flows of Gasunie.

PRODUCED CAPITAL

As described, produced capital includes several impacts. These impacts contain the following indicators: Contribution of gas transport to consumer welfare; Value of energy transport for business customers; Value of goods purchased for gas transport. The indicators are then combined after attribution. In the rest of this section, the

impacts are elaborated, followed by an explanation of the applied attribution factors in the Attribution chapter.

In the 2023 annual report, Gasunie mistakenly reported different values than described in the accompanying accountability document. For the 'contribution of gas transport to consumer welfare' and 'the economic added value of energy transport for business customers,' net values were reported instead of gross values. For the value of goods purchased, the purchase of goods for gas transport was reported without attributing the external component gas households to suppliers.

In 2024, the model for the impact on produced capital was updated in collaboration with other network operators within the Coalition Steering on Broad Prosperity. This was done for two reasons. Firstly, there has been an increase in social, political, and scientific interest in quantifying the value of (sustainable) energy in recent years. These new insights have been incorporated into the models. Secondly, the context has changed: after a long period of stable energy prices, there are now strong price fluctuations. The revised model shows that the value of gas transport for Gasunie has decreased because consumers adjust their energy consumption more based on price developments than previously assumed (which translates into greater price elasticity). A possible cause of this is that users are more conscious of their energy use. There are also more alternatives for heating homes with gas than before. Additionally, the most recent literature shows that the valuation of sustainable energy is higher than previously assumed in Northern Europe.

CONTRIBUTION OF ENERGY TRANSPORT TO CONSUMER WELFARE

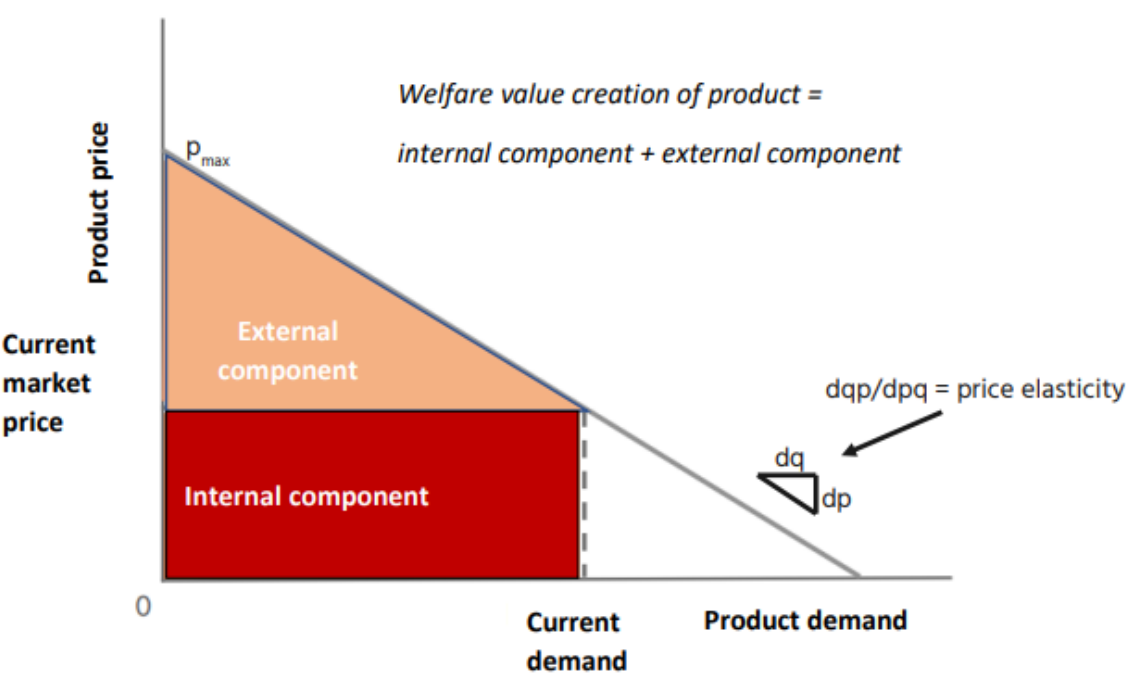
By supplying gas to consumers and business customers, Gasunie adds value to society. For households, this value is different from that for business customers. It is therefore essential to make a distinction here. Research on price elasticities shows that, in general, the welfare value of obtaining gas is greater than the price actually paid by our customers. This surplus is called consumer surplus. For household customers, this surplus is quantified and attributed to the energy chain. For business customers, the ultimate surplus is in the products they deliver to (end) consumers. This falls outside the scope of the impact measurement. To calculate the maximum willingness to pay for gas, the average transaction prices for Germany established by Destatis were used. Since the transaction price for the year 2024 is not yet available for the Netherlands at the time of publishing the annual report, data from 2023 was used as the most recent year. To be consistent, 2023 was also used as the most recent year for 2023.

Definition and description of impact

The welfare of consumers for consuming gas is higher than just the price paid for its consumption. The contribution of gas transport to consumer welfare is estimated based on consumer surplus. The welfare value of energy and gas can be divided into two parts: an internal and an external component. Part of the welfare value of gas transport is discounted in Gasunie's prices. This part is equal to the revenue from households and is called the internal component of the value of gas transport. The remaining welfare value is the money consumers would be willing to pay for gas minus what they actually pay. This net welfare gain is approximated by an estimate of the consumer surplus: the

difference between the value and the price of gas for households. This part is called the external component of the value of gas transport. The figure below clarifies this relationship.

The sector-wide demand curve for the product



imitations

To calculate the consumer surplus, estimates regarding the demand curve for gas have been used. Additionally, estimates regarding average market prices for gas over 2023 have been applied.

For the demand curve, data is available on elasticity around common household consumption. Less is known about more extreme situations, such as price elasticities at very low supply. We use median price elasticity as calculated from the literature study by CE Delft in 2021 and extrapolate this to low and high quantities. This means a linear line under which we estimate the consumer surplus. To compare the consumer surplus between different network operators, it was decided to fix the maximum willingness to pay for gas for the entire sector at the year of the reference study for price elasticity. Only an inflation correction is applied to the reporting year. The demand curve is then determined as a linear function based on willingness to pay, the most recent sector price, and the transported volume over the time span.

Internal component gas transport households	Net revenue network operator gas households (EUR/year)
External component gas transport households	(Maximum willingness to pay for gas in the sector with an inflation correction to year t (EUR/m³) - Transaction price gas households sector year t-1 (EUR/m³)) *

Internal component gas transport households	Net revenue network operator gas households (EUR/year)
	Transported volume of gas by network operator to households (m ³ /year)/2

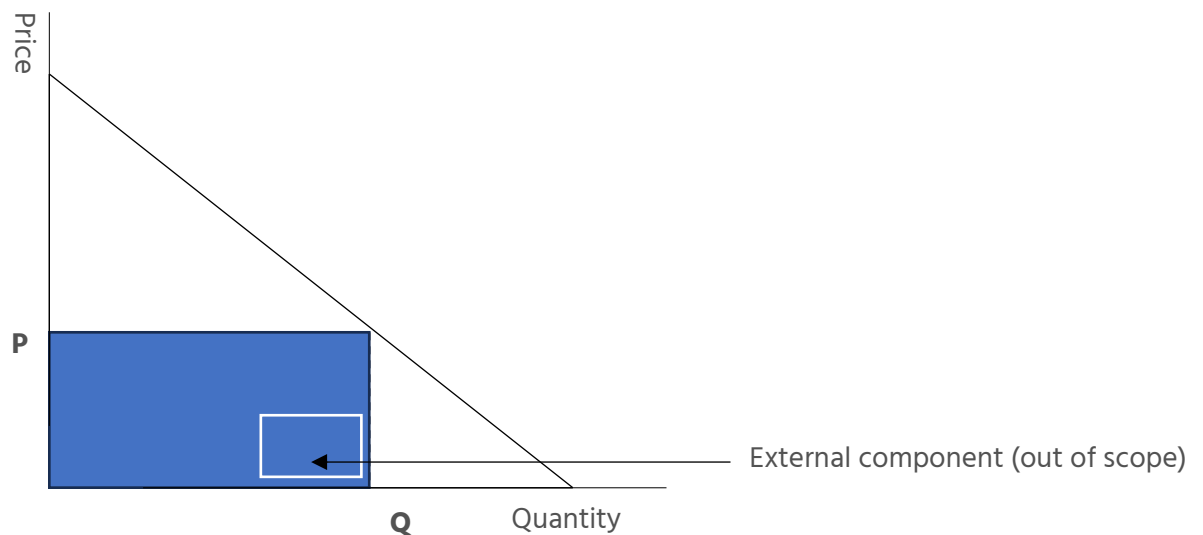
Sources

Transported volume energy	Annual report N.V. Nederlandse Gasunie
Price elasticity energy	CE Delft (2021) table 50 (median gas - 0.34) [% delta quantity]/[% delta price]
Sector price (incl. energy tax and VAT)	<p>CBS:</p> <ul style="list-style-type: none"> • Sector price including energy tax and VAT gas - households – 2023 EUR/m³ 1.764 • Sector price including energy tax and VAT gas – business customers – 2023 EUR/m³ 1.237 <p>Eurostat:</p> <ul style="list-style-type: none"> • Transaction price Germany including energy tax and VAT gas – households – 2023 EUR/kWh 0.11875 • Transaction price Germany including energy tax and VAT gas – business customers – 2023 EUR/kWh 0.08405
Net revenue network operator gas (EUR/year)	Annual report N.V. Nederlandse Gasunie
Transported quantities gas (m ³ /year)	Annual report N.V. Nederlandse Gasunie

VALUE OF ENERGY TRANSPORT FOR BUSINESS CUSTOMERS

Definition and description of impact

The method for this is still under development; therefore, only the internal part of the consumer surplus is included in this impact. This is based on revenue figures, adjusted for sales and energy tax (which is attributed to Gasunie). The figure below clarifies this relationship.



Calculation and limitation

The net revenue from gas for large consumers is equated to the internal component of energy transport for business customers. The willingness to pay of business customers is harder to determine. Therefore, it is conservatively assumed that the value of energy for business customers is equal to the amount paid, meaning the external component for business customers is set to zero.

Calculation

Internal component gas transport business customers	Net revenue network operator gas business customers (EUR/year)
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Sources

Net revenue network operator gas business customers (EUR/year)	Annual report N.V. Nederlandse Gasunie
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VALUE OF GOODS PURCHASED FOR ENERGY TRANSPORT

This impact is also part of the impact Contribution of energy transport to consumer welfare. The impact indicates which part of the value creation can be attributed to suppliers. It is therefore a corrective item for produced capital.

Calculation

Value of goods purchased for gas transport	External component gas households attributed to suppliers (EUR/year) + Goods purchased for gas transport (EUR/year)
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Sources

Costs of outsourced work, materials, and other external costs (EUR/year)	Annual report N.V. Nederlandse Gasunie
Net revenue network operator gas (EUR/year)	Annual report N.V. Nederlandse Gasunie

INCREASE IN WELFARE DUE TO THE SUPPLY OF GREEN GAS

This impact is part of the impact Contribution of energy transport to consumer welfare. The impact of Gasunie enabling the supply of green gas mainly consists of the increased welfare from using greener energy. The welfare of households with green gas increases due to the consumption of sustainable energy instead of natural gas and the associated contribution to environmental issues such as climate change. This increase in welfare is reflected by the higher willingness-to-pay (WTP) for sustainable energy compared to conventional energy.

Calculation

Increase in welfare due to the supply of green gas	WTP for renewables * Transported volume of green gas
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Sources

WTP for renewables	Cerdá, Emilio, et al. (2024)
Transported volume of green gas	Annual report N.V. Nederlandse Gasunie

NATURAL CAPITAL

As previously described, natural capital includes the following impacts:

- Contribution to climate change
- Mitigation of climate change
- Ecological damage from material purchases
- Ecological damage from waste

In the rest of this section, the impacts are elaborated, followed by an explanation of the applied attribution factors in the Attribution chapter.

CONTRIBUTION TO CLIMATE CHANGE

Contribution to climate change is defined as the emission of greenhouse gases by the own organization and in the value chain, which leads to climate change, having a negative impact on people and ecosystems. The impact contribution to climate change

is calculated based on greenhouse gases emitted by the own organization and in the value chain. This aligns with the scopes from the Greenhouse Gas GHG Protocol for the extraction and production phase (and limited use phase) of electricity and gas.

- Direct greenhouse gas emissions by the own operation – this corresponds to the scope 1 emissions reported by Gasunie.
- Indirect greenhouse gas emissions by direct suppliers – this corresponds to the scope 2 and 3 emissions reported by Gasunie.
- Chain emissions from gas and electricity production and extraction – this involves a broader interpretation of scope 3 emissions: the emissions from the chain partners to which Gasunie contributes in the production phase up to the use of energy. These total emissions from gas use are approximated by multiplying the distributed quantity with the associated emission factors.

In scope are the six greenhouse gases defined in the Kyoto Protocol: Carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

Contribution to climate change	Contribution to climate change from greenhouse gas emissions by the network operator (direct - own organization)	Emissions Scope 1 * Monetization coefficient (EUR/kg CO ₂ eq)
	Contribution to climate change from greenhouse gas emissions by the network operator (indirect – upstream - network losses)	Emissions Scope 2 * Monetization coefficient (EUR/kg CO ₂ eq)
	Contribution to climate change from greenhouse gas emissions by the network operator (indirect – upstream – excluding network losses)	(Emissions Scope 2 + Emissions Scope 3) * Monetization coefficient (EUR/kg CO ₂ eq)
	Contribution to climate change from chain emissions gas (indirect - upstream)	((Transported quantities gas (m ³ /year) * Emission factor NL natural gas (WTW)) -/- Chain emissions own gas use) * Monetization coefficient (EUR/kg CO ₂ eq)
Mitigation of climate change	Mitigation of climate change (direct)	Guarantees of origin * Monetization coefficient (EUR/kg CO ₂ eq)

Valuation

True Price Monetization factors 2023 0.163 EUR/kg CO₂ eq

Sources

The basis for the impact calculation is the CO₂ figures as reported in the CO₂ footprint in the annual report of N.V. Nederlandse Gasunie.

CO ₂ emissions	CO ₂ emissions: Annual report N.V. Nederlandse Gasunie
Emission factor NL Natural Gas (WTW)	CO ₂ emission factors 2022 (emission factor natural gas (WTW) kg CO ₂ eq/m ³ 2.134)
Transported quantities gas (m ³ /year)	Annual report N.V. Nederlandse Gasunie

The secondary data consists of the emission factors for gas use and the monetization coefficient. The Handbook for Impact Measurement of Infrastructure Companies states that the network operators apply a 3-year update term for this data. Gasunie has deviated from this and applied an update for only the year 2023. For the transported volumes of LNG, the sum of the exit of Dutch consumption and abroad is used.

ECOLOGICAL DAMAGE FROM MATERIAL PURCHASES

Definition and description of impact

Gasunie purchases many materials for its activities. The largest quantities of materials are in the main categories: pipes, valves, compressors, and measuring equipment. The production of these materials impacts natural capital. By linking ecological costs to these purchases, we make this impact transparent. Eco-costs is a method to quantify the environmental burden of a product, based on the costs needed to prevent this burden.

Calculation

The starting point is the quantity of purchased materials, expressed in tonnages. For each major material stream, the quantity is multiplied by the associated eco-costs, using secondary data from the Idemat database. A distinction is made between virgin (new) and non-virgin (recycled) materials, each having different eco-costs. In 2025, only steel will be reported. This is the largest material stream of Gasunie and likely the largest part of the impact. In the future, more material streams will be added. The eco-costs of all materials are summed to calculate the total eco-costs of the purchases (€). Gasunie is allocated a portion of the impact based on its position in the value chain. This is calculated using the following formula, where *i* stands for a specific material type:

Ecological damage from material purchases	$\sum_{i=1}^n (\text{quantity of purchased material } i) * \text{eco - costs material } i)$
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Sources

Eco-costs per material (€ / kg)	Idemat database
Quantity of purchased materials	Purchase data Gasunie

ECOLOGICAL DAMAGE FROM WASTE

Definition and description of impact

Gasunie uses various materials for its activities. The scope of waste includes all registered waste streams of Gasunie. When materials such as compressors, pipes, or office supplies are decommissioned, they are disposed of. This causes ecological damage to natural capital. This damage is approximated using the so-called eco-costs of waste processing. Eco-costs is a method to quantify the environmental burden of a product, based on the costs needed to prevent this burden.

Calculation

The starting point for the calculation is the tonnages of waste streams, as reported in Gasunie's circularity model. These waste streams are categorized based on type of waste and processing method. For each waste stream, the tonnages are multiplied by the associated eco-costs, using secondary data from the Idemat database. The eco-costs of all waste streams are summed to calculate the total ecological damage from waste (€). This is calculated using the formula below:

Ecological damage from waste	$(\text{tonnage of landfilled material} * \text{eco-costs of landfilling}) + (\text{tonnage of incinerated material} * \text{eco-costs of incineration}) + (\text{tonnage of hazardous waste} * \text{eco-costs of hazardous waste}) + (\text{tonnage of recycled material} * \text{eco-costs of recycling}) + (\text{tonnage of digested material} * \text{eco-costs of digestion}) + (\text{tonnage of composted material} * \text{eco-costs of composting})$
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The eco-costs for recycling are zero. In a circular economy, waste is no longer referred to as waste but as raw materials. The processing of waste into raw materials impacts natural capital.

Sources

Eco-costs per material (€ / kg)	Idemat database
Quantity of waste split by processing method (kg/year)	Waste data Gasunie

HUMAN CAPITAL

Gasunie takes care of about 2,500 employees. Since work constitutes a large part of life, it has a significant impact, both positive and sometimes negative. Employees develop through training and experience gained on the job. This is beneficial for the employees, (future) employers, and society as a whole. The impact of this can continue to yield benefits for many years. Although Gasunie has extensive safety regulations, accidents can occur during work, such as bruises or falls. Therefore, the potential negative impact of work is also considered. Work at Gasunie can also contribute to work-related absenteeism such as back problems or stress. The goal is to determine the impact of

these accidents and work-related absenteeism on the well-being of our employees. In the rest of this section, the impacts are elaborated, followed by an explanation of the applied attribution factors in the Attribution chapter.

ACCIDENTS AND ABSENTEEISM OF EMPLOYEES

Definition and description of impact

The health effects of work-related absenteeism and accidents of employees. The extent to which work-related incidents and absenteeism negatively affect the overall health, well-being, and safety of employees. This includes fatal and non-fatal work-related accidents in the workplace and the occurrence of chronic stress. This applies to incidents within the organization (direct impact) as well as in the value chain (indirect impact).

Calculation and limitation

The loss in employee well-being is measured using the indicator Disability-Adjusted Life Year (DALY). This represents both the perceived loss of well-being and the loss of future income of an employee. DALYs for a disease or health condition are calculated as the sum of the years of life lost due to premature death (Years of Life Lost, YLL) and the years of healthy life lost due to disease and/or disability (Years Lost due to Disability, YLD) (definition from WHO, 2020). Work-related absenteeism and accidents of employees consist of three components: non-fatal accidents; fatal accidents; and other work-related absenteeism. The three components are modeled separately, as shown below:

non-fatal accidents	The incidents within Gasunie are categorized into: pinching/hitting/cutting, falling/tripping, traffic, toxic substances etc., animals, aggression (people) mental/physical, fire, and other, combined with the DALY data related to these types of health effects.
fatal accidents	Determined based on the number of fatalities due to work-related incidents within Gasunie, where the number of fatalities is multiplied by the valuation coefficient for fatal incidents.
other work-related absenteeism	Includes health loss not covered by the first two categories. Work-related absenteeism is divided into mental and physical & ergonomic and other. The three forms of absenteeism are estimated based on the number of absentee days and a disability weighting factor. The weighting factor due to physical problems is estimated as a weighted average for complaints of upper limbs,

	back, and lower limbs. The total absenteeism in the three categories (mental, physical, and other) is then multiplied by a corresponding factor for the reduced value of a life year (disability weight) (definition from GBD, 2017). The sum of the categories thus provides an estimate of the number of Disability-Adjusted Life Years (DALY) caused by other work-related absenteeism. Finally, the number of DALYs is multiplied by the valuation coefficient of a DALY.
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The calculation of the impacts of work-related absenteeism and accidents of employees (safety) is limited to direct effects; focused on the organization itself. An accident or illness can lead to other accidents or illnesses, which are not measured.

Accidents and absenteeism of employees	Loss of well-being due to non-fatal accidents within the organization (EUR/year) + Loss of well-being due to fatal accidents within the organization (EUR/year) + Loss of well-being due to work-related absenteeism within the organization (EUR/year)
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Valuation

The valuation coefficients for DALYs and fatal accidents are related. The monetization of a fatal accident is estimated based on the Value of Statistical Life (VSL) from a meta-study by the Organisation for Economic Co-operation and Development (OECD) (2012). The monetization of a DALY is then derived from this based on average life expectancy. The coefficient is updated based on inflation (World Bank, 2023).

Sources

Work-related absenteeism	HR reporting Sickness absenteeism; TNO, the NEA benchmark tool (Share of occupational disease mental 33% Share of occupational disease bones, muscles, and joints 41% Share of occupational disease unknown and other 26% Share of work-related absenteeism 46%)
Number of accidents	Internal data
Disability Weights	GBD (2017), 'Global Burden of Disease Collaborative Network. Global Burden of Disease Study 2017'; Haagsma et al. (2016) (Disability weight Mental Lost years/year 0.13 Disability weight Physical & ergonomic Lost years/year 0.09)

EMPLOYEE DEVELOPMENT

Definition and description of impact

Human capital, which includes the well-being and productivity of individuals, is formed through development via training and experience. To measure this development, we look at key factors such as total future salary increases, Human Capital Return on Investment (HC ROI), and the share of future work years. Employee development is evaluated based on internal promotions and associated salary increases. These data are translated into the growth of human capital within society. The impact is accurately divided between Gasunie and future employers, taking into account factors such as age, retention rates, and retirement age.

Total future salary increases: To calculate the total future salary increases at Gasunie, an estimate is made based on age groups and salary scales. Promotions are derived from increases in salary scales, while salary increases without promotion can also result from other factors, such as inflation adjustments. When an employee moves to a higher salary scale, the salary increase is calculated as the difference between the average salary of the higher scale and that of the lower scale. If an employee remains in the same salary scale, the salary increase is set to 0.

The underlying assumption is that salary increases are linearly related to skill growth, as salaries are partly dependent on skills. Increases within the same salary scale are not directly linked to employee development, as scale improvements are more indicative of promotion opportunities. The average salary level within a scale is considered representative of the actual salary, while scale improvements are used as a measure of promotions.

HC ROI: The return on investment in human capital (HC ROI) is calculated as the ratio between salaries and gross profit. The HC ROI is at least 100%, meaning it always has a positive value. This ensures that the impact on society, Gasunie, and future employees is never negative.

It is assumed that a higher HC ROI correlates with an increase in organizational productivity. Investments in human capital are considered to contribute linearly to productivity. An increase in HC ROI is seen as an indicator of positive productivity growth. Furthermore, it is assumed that the acquisition of skills always leads to positive value creation, with a minimum return of 0.

Share of future work years: The share of future work years is estimated based on the retention rate (RP). Each year, a percentage of employees ($1-RP$) leaves the organization. After one year, $RP\%$ of the employees remain, after two years RP^2 , and so on.

In this calculation, we take into account the current unemployment rate in the Netherlands to estimate the total number of future work years. An assumption is that survival chances and early retirement are not considered in the estimation of future work years, with the retention rate as the starting point.

Sources

Salary data	Personnel and salary administration
Retention rate	HR department Gasunie
Retirement age	Government of the Netherlands (2023)
Unemployment rate	OECD (2024)
Discount rate	CPB (2017)
Company revenues, personnel costs, and operating costs	Annual report N.V. Nederlandse Gasunie
Employee data	Personnel and salary administration

Attribution

Attribution Impacts are, as described above, divided among stakeholders based on (a) responsibility and (b) share in the chain. The attribution calculation then proceeds in three steps.

STEP 1: CLASSIFICATION BASED ON RESPONSIBILITY

Attribution type	Description	Impact indicator
1	Predominantly internal effects	Impact within financial capital
		Internal component energy transport households
		Internal component gas transport business customers
		Procurement of goods for gas transport
2a	Attribution factor for external impacts with primary responsibility at the network operator (direct) regarding the entire energy chain	Contribution to climate change by greenhouse gas emissions network operator (direct - own organization)
		Contribution to climate change by greenhouse gas emissions network operator (indirect – upstream – network losses)
		Mitigation of climate change (direct)
		Non-fatal accidents
		Fatal accidents
		Other work-related absenteeism

Attribution type	Description	Impact indicator
2b	Attribution factor for external impacts with primary responsibility not at the network operator (indirect) regarding the entire energy chain	Contribution to climate change by greenhouse gas emissions network operator (indirect – upstream – excl. network losses)
		Contribution to climate change by greenhouse gas emissions chain emissions (indirect - upstream)
		Mitigation of climate change (indirect)
3	Attribution factor for external impacts without primary responsible party in the entire energy chain	External component energy transport households (attributed to network operator and suppliers)
		External component gas transport (attributed to suppliers)

STEP 2: CALCULATION OF ECONOMIC ADDED VALUE

For the calculation of added value, we distinguish between the value chains that differ per type of customer - business customers and households.

This is done in three steps:

1. The first step determines the share of the transaction price of gas attributable to Gasunie based on Gasunie's revenue and transported volume. The transaction price for the Netherlands and Germany is determined based on CBS and Destatis, respectively.
2. The second step calculates Gasunie's added value. This is done by adjusting the revenue for purchase costs and investments. This adjusted revenue is used to determine Gasunie's final share of the transaction price.
3. The final step involves a correction for energy tax.

For each value chain, the multiplication of these two shares approximates the economic Added Value (AV) factor. Finally, an average AV factor is calculated.

STEP 3: CALCULATION OF ATTRIBUTION FACTORS

The attribution factors are determined as a combination of attribution type and (for types 2 and 3) the AV factor in the value chain to which the impact relates (average AV factor, if not chain-specific). The combination of steps 1 and 2 according to the methodology described in IAM Supplement Impact Contribution (Handbook for Impact

Measurement of Infrastructure Companies) leads to the attribution factors per impact indicator. A difference from the handbook is that attribution is done based on the figures of the most recent year, instead of an average of 3 years. The ambition is to harmonize this with other network operators in the coming year.

For the 2024 annual report, we see a sharp decline in attribution factors 2B and 3, almost by a factor of 3. In other words, Gasunie's share in the chain has decreased. This is because Gasunie applied lower rates in 2024 than in 2023. As a network operator with an essential social function, Gasunie does not aim for long-term profit. Previous profits flow back to society through lower prices. At the same time, the gas price (according to CBS data from 2023) has increased, resulting in Gasunie having a smaller share in a larger total market. This mainly affects the chain impact on produced capital and climate change.