

# Linde plc CDP Water Security Questionnaire 2020

# W0. Introduction

### W<sub>0</sub>.1

## (W0.1) Give a general description of and introduction to your organization.

Linde plc is a public limited company formed under the laws of Ireland with its principal offices in the United Kingdom. Linde plc was formed in 2017 in accordance with the requirements of the business combination agreement, dated June 1, 2017, as amended, between Linde plc, Praxair, Inc. ("Praxair") and Linde Aktiengesellschaft ("Linde AG"). Effective October 31, 2018, the business combination was completed, and Linde plc is comprised of the businesses of Praxair and Linde AG (hereinafter, the combined group will be referred to as "the company" or "Linde" and the legacy companies will be referred to as "Linde AG" and "Praxair").

Linde is a leading global industrial gases and engineering company with 2019 sales of USD 28 billion. The company employs approximately 80,000 people globally and serves customers in 95 countries worldwide.

Linde is a major technological innovator in the industrial gases industry. Approximately 83 percent of Linde's 2019 sales were generated from industrial gases operations in three geographic segments – Americas; Europe, Middle East and Africa [EMEA]; and Asia Pacific [APAC]. The remaining 17 percent is related primarily to the Engineering segment, and to a lesser extent, other operating segments (including the business of Praxair Surface Technologies, Inc. a wholly owned subsidiary). Linde's primary products in its industrial gases business are atmospheric gases (oxygen, nitrogen, argon, and rare gases) and process gases (carbon dioxide, helium, hydrogen, electronic gases, specialty gases, and acetylene). The company also designs, engineers, and builds equipment that produces industrial gases for internal use as well as for 3rd party customers, and offers a wide range of gas production and processing services such as olefin plants, natural gas plants, air separation plants, hydrogen and synthesis gas plants and other types of process plants. The surface technologies segment supplies wear-resistant and high-temperature corrosion-resistant metallic and ceramic coatings and powders.

Linde serves a diverse group of industries including healthcare, petroleum refining, manufacturing, food, beverage carbonation, fiber-optics, steel making, aerospace, chemicals and water treatment.

2019 marks the first year of combined full-year reporting of financial and non-financial information for the new merged enterprise. The merger and consolidation of information from the two legacy companies meant that there are several changes in reporting standards and reporting boundaries. During 2019, after the lifting of the "hold separate order" in March, Linde started to work on the definition of its new non-financial reporting standards, boundaries, policies, strategies and ultimately its new 10-year sustainable development targets. The latter were completed end 2019 and approved



by the Linde Board of Directors in early 2020. This new information is presented in Linde's 2019 Sustainable Development Report (SDR) (published in July 2020) and forms also the basis for Linde's 2020 CDP response.

In last year's CDP response, Linde provided mostly Praxair-only information, as Praxair operations accounted for 80 percent of Linde's reported revenues for 2018. This also included methodologies, standards, policies and targets valid solely for the legacy company.

The difference in scope and boundaries for Linde between 2018 and 2019 reporting makes it difficult to compare performance between 2018 and 2019 and does not allow for trends to be determined. Linde has therefore decided to restate the reported 2018 non-financial KPIs, especially in the area of environment and climate change, in order to provide a meaningful basis of comparison between the two years. The restatement means that Linde has calculated a pro forma 2018 number, which is based on a full year of operation of the combined company reflecting the same organizational structure, reporting boundaries and methodologies as defined in 2019 for the current company.

Whenever Linde is now in this CDP report referring to 2018 or comparing 2019 against 2018 data, it refers to the re-stated 2018 full year pro forma value. This will be described in each question/section where this is relevant.

## W-CH0.1a

### (W-CH0.1a) Which activities in the chemical sector does your organization engage in?

Bulk inorganic chemicals
Specialty inorganic chemicals

### W0.2

#### (W0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date
Reporting year	January 1, 2019	December 31, 2019

## W0.3

#### (W0.3) Select the countries/areas for which you will be supplying data.

Algeria	Canada	France
Argentina	Chile	Germany
Australia	China	Greece
Austria	Colombia	Hungary
Bahrain	Costa Rica	Iceland
Bangladesh	Czechia	India
Belgium	Denmark	Ireland
Bolivia (Plurinational	Dominican Republic	Italy
State of)	Ecuador	Japan
Brazil	Finland	Luxembourg



Mexico	Republic of Korea	Turkey
Netherlands	Romania	Ukraine
New Zealand	Russian Federation	United Arab Emirates
Nigeria	Serbia	United Kingdom of Great
Norway	Singapore	Britain and Northern
Panama	South Africa	Ireland
Paraguay	Spain	United States of America
Peru	Sweden	Uruguay
Philippines	Switzerland	Zambia
Poland	Taiwan, Greater China	Zimbabwe
Portugal	Thailand	
Puerto Rico	Tunisia	

## W<sub>0.4</sub>

(W0.4) Select the currency used for all financial information disclosed throughout your response.

USD

#### W<sub>0.5</sub>

(W0.5) Select the option that best describes the reporting boundary for companies, entities, or groups for which water impacts on your business are being reported.

Companies, entities or groups over which financial control is exercised

# W0.6

(W0.6) Within this boundary, are there any geographies, facilities, water aspects, or other exclusions from your disclosure?

Yes

## W0.6a

#### (W0.6a) Please report the exclusions.

Exclusion	Please explain
Linde has defined de-minimis	Linde runs hundreds of small sales outlets or workshops worldwide with
values for environmental	low levels of energy or water consumption, e.g. where water is primarily
parameters. If a site falls below	withdrawn for domestic sanitary use, but not used in any
those criteria it is not required to	industrial/production process. Linde excludes these sites because their
report its eKPIs to the group.	water use is insignificant compared to the amount of water withdrawn by
	our plants. In addition, many of our smaller sites are leased offices. These
	sites are not separately metered, and we cannot control the type of
	equipment (for example, use of low flow faucets) used at these sites. This
	means we do not have financial or operational control over water policies
	at these sites.



# W1. Current state

# W1.1

# (W1.1) Rate the importance (current and future) of water quality and water quantity to the success of your business.

	Direct use importance rating	Indirect use importance rating	Please explain
Sufficient amounts of good quality freshwater available for use	Important	Neutral	Linde withdrew about 612 million liters of non-brackish water in 2019, including once-through non-contacting cooling water which is returned to its original source with its original water quality after usage. Sufficient availability of water is vital for Linde's production processes. Primary use of water is for cooling and boiler systems. About 85% of non-brackish water is drawn from fresh surface water sources, the rest from industrial/recycled sources. Having access to clean, high quality fresh water reduces the need for treating the water, which saves energy and reduces waste.  Supply Chain: We do not consider water to be a significant issue in our supply chain. Most of our raw materials (99% per weight) is coming from renewable sources incl. air or water. For the rest, a small amount of our suppliers might experience water risk at certain locations with very high
			water stress, however Linde has contingency strategies (e.g. alternative sourcing of raw materials) to mitigate such a risk.
			Future fresh water dependency is expected to increase in proportion to increases in production and constructing new facilities. Water use efficiency measures are expected to keep these increases in check.
Sufficient amounts of recycled, brackish and/or produced water available	Important	Neutral	Linde used 92 million liters of industrial/recycled water in 2019 and 176 million liters of sea water; this is 34% of the total water withdrawn from all sources (fresh water + nonfresh water sources).
for use			The direct use of recycled water is mainly for cooling purposes, and is an important strategic water source based on sites location to avoid the use of freshwater available



and help increase its availability to local communities.  Supply Chain: As an industrial gas company, our raw
materials consist largely of air and natural gas as a feedstock. 99% of our raw materials by weight are from renewable sources. Therefore, we do not consider water to be a significant issue in our supply chain. Linde has contingency strategies (e.g. alternative sourcing of raw materials) in case of any procurement issues incl. potential water issues.
Future industrial water dependency is dependent on the amount of this water supplied by customers or available from municipal utilities. Linde plc does not foresee any risks associated with its use of water. We expect an increase in recycled water use and implementation of technology allowing the reuse and recycling of water in areas of water stress.

# W1.2

# (W1.2) Across all your operations, what proportion of the following water aspects are regularly measured and monitored?

	% of sites/facilities/operations	Please explain
Water withdrawals – total volumes	100%	Water withdrawal is a key performance indicator for Linde and is managed as part of the company's sustainable productivity activity to continuously evaluate water use efficiency and areas of improvement. Water withdrawal volumes and discharge are monitored at 100% of the facilities and reported per our internal standard environmental reporting procedure. Data is collected based on flow meters and invoices, reported annually in a global database, consolidated and reviewed by the Global SHEQ team of the company. Data are verified by an external auditor and published once a year in our sustainability report.  In addition, as part of Linde 2028 Sustainable Development Targets, water withdrawal volumes at high water use sites in areas of high and extremely high water stress are monitored quarterly as part of the Sustainable Development Management System



		(SDMS), and those sites must provide and report water figures quarterly against a Water Management Plan (WMP).
Water withdrawals – volumes by source	100%	Water withdrawal is a key performance indicator for Linde and is managed as part of the company's sustainable productivity activity to continuously evaluate water use efficiency and areas of improvement. Water withdrawal volumes and discharge are monitored at 100% of the facilities and reported per our internal standard environmental reporting procedure. Data is collected based on flow meters and invoices, reported annually in a global database, consolidated and reviewed by the Global SHEQ team of the company. Data are verified by an external auditor and published once a year in our sustainability report.  In addition, as part of Linde 2028 Sustainable Development Targets, water withdrawal volumes at high water use sites in areas of high and extremely high water stress are monitored quarterly as part of the Sustainable Development Management System (SDMS), and those sites must provide and report water figures quarterly against a Water Management Plan (WMP).
Water withdrawals quality	100%	Having access to clean, high quality fresh water for our plant operation reduces the need for costly measures in treating the water, which saves energy and reduces waste. Primary use of water is for cooling and boiler systems. Water withdrawal quality is monitored several times a year to meet the requirements and water specifications intended for its use, and to ensure testing for specific constituents that pertain to discharge permits.  In addition, 16% of Linde's incoming water is supplied by a municipal utility who provides quality data on an annual basis.  As part of the global annual environmental data collection process, Linde collects water data according to the new GRI standard 303 for Water and Effluents,



		which is based on water quality (concentration of total dissolved solids in the total water volume withdrawn).
Water discharges – total volumes	100%	Most water discharge is related to once-through non-contacting cooling water which is returned back to its original source with its original water quality after completion of the cooling cycle. Most of once-through cooling water is returned to fresh water sources with its original water quality as when withdrawn. The number of sites reporting to corporate has been steadily increasing. The work process is described in Linde's water SOP. Facilities operating under a Water Management Plan (which represent about 52% of Linde water withdrawal) report on a quarterly basis; all other sites report annually.  Sites report quantities of water discharge at least annually during the environmental data collection.
Water discharges – volumes by destination	100%	Linde tracks at least once a year the amount of water discharge and if this is discharged to a fresh water or another water source, e.g. a brackish water source (sea).
Water discharges – volumes by treatment method	Not monitored	Linde does not track wastewater discharge volumes by treatment method. Some facilities treat their wastewater - these are requirements of their discharge permits. Only permit exceedances are tracked at the corporate level.
Water discharge quality – by standard effluent parameters	100%	Linde tracks at least annually the amount of water discharge by type of water/water quality and if this is discharged to a fresh water or another water source, e.g. a brackish water source (sea).  Linde sites that have wastewater discharge permits manage these permits at the site level and monitor discharge quality at the frequency dictated by their discharge permits
Water discharge quality – temperature	Not monitored	Linde does not monitor this at the corporate level.  Wastewater discharge quality is not considered a material issue according to our sustainable development materiality assessment. This is monitored at the site level only. Some facilities treat their wastewater, some send the waste water to municipal or industrial wastewater treatment systems and some have no treatment. Monitoring of these discharges are



		typically the requirements of their discharge permits and these are monitored on a site/regional level. Ultimate overall compliance with these discharge permits are monitored on a corporate level
Water consumption – total volume	100%	Linde plc monitors fresh water consumption as well as the consumption of other used/recycled or brackish water. Linde sites report at least once a year their water withdrawals and discharges (e.g. once through cooling water) by different criteria to the group.  Linde is constantly working to improve its net water usage by innovation (e.g. increasing cooling cycles).
Water recycled/reused	100%	Linde tracks recycled, reused and brackish water for all sites which are in its reporting boundaries. 11.7% of total water withdrawal in 2019 was from recycled/industrial sources and 22.3% from brackish water.
The provision of fully- functioning, safely managed WASH services to all workers	100%	Linde minimum requirement procedure for OHS for site engineering includes a section on Adequate General Working Conditions, this requires that general working conditions shall be of an adequate standard to protect employee health that include provisions for clean water, toilet and washing facilities and safe and clear eating facilities/ area. This includes living accommodation if provided and managed by Linde.

# W1.2b

(W1.2b) What are the total volumes of water withdrawn, discharged, and consumed across all your operations, and how do these volumes compare to the previous reporting year?

	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Total withdrawals	612,400	Lower	This figure is the total water withdrawn by Linde excluding brackish water (sea water) as reported in Linde's 2019 Sustainable Development Report.  Withdrawal of non-brackish water decreased by 6% compared to 2018 (pro-forma). There was a shift between fresh water and recycled water withdrawn compared to 2018 whereas less fresh water has been used in 2019 and more industrial/recycled water). There were several reasons for the absolute reduction. Linde works continuously to improve its water intensity by e.g. increasing the number of cycles in our cooling and boiler systems and other water efficiency programs (e.g.



			improved machinery) which reduce water consumption. There were visible effects from such activities in 2019 water withdrawal and consumption, e.g. for some European plants. Another aspect was the change of water sourcing from non-brackish to a brackish water source. One of our plants in China switched from a fresh water source to sea water usage. Further reasons for reduced water withdrawal in 2019 were due to production downtime and favorable weather conditions (less cooling water required).  Our South America business has a target for water reduction and achieved a 5% absolute reduction of water consumed for 2019.
Total discharges	469,400	Lower	This figure is the water discharged excluding brackish water (sea water) as reported in Linde's 2019 Sustainable Development Report. 2019 volumes decreased by 3 % compared to 2018. There was a shift between fresh and recycled water discharged (oncethrough cooling water). While fresh water discharged were reduced by 15% (due to lower amounts of fresh water withdrawn), industrial/recycled water discharges increased a lot (due to higher amounts of recycled water used instead of fresh water). The smaller decrease in total discharges compared to water withdrawal shows that Linde was able to return relatively more water back to the water source in relation to what was withdrawn. This is due to water efficiency measures and more effective cooling processes.
Total consumption	143,000	Much lower	Total water consumption decreased by 14% from 2018 to 2019. This is the effect of reduced water withdrawal and a small decrease in water discharged (therefore more water discharged/returned in relation to what was withdrawn). This is the result of Linde's continuous improvement of industrial processes resulting in energy and water efficiency.  Some of our regions have defined water reduction targets. For example, South America saw a 5% reduction of water consumed for 2019.

# W1.2d

(W1.2d) Indicate whether water is withdrawn from areas with water stress and provide the proportion.



	Withdrawals are from areas with water stress	% withdrawn from areas with water stress	Comparison with previous reporting year	Identification tool	Please explain
Row 1	Yes	1-10	This is our first year of measurement	WRI Aqueduct	Water withdrawal for sites located in areas of water stress represent 5% of Linde total water withdrawal in 2019. Water withdrawal from water stress areas is a key performance indicator for Linde plc and is managed as part of the company's sustainable productivity activity to continuously evaluate water use efficiency and areas of improvement.  As part of Linde 2028 Sustainable Development Target, we used the WRI Aqueduct Water Risk Atlas mapping tool to assess water stress areas in regions where facilities are operating or plan to site new facilities. The water figures for the identified sites in areas of water stress are monitored quarterly as part of the Sustainable Development Management System (SDMS), and those sites must provide and report water figures quarterly against a Water Management Plan (WMP).

# W1.2h

# (W1.2h) Provide total water withdrawal data by source.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Fresh surface water, including rainwater, water from wetlands, rivers, and lakes	Relevant	383,000	Much lower	Fresh water withdrawal decreased by 21% from 2018 to 2019 (about 100,000 megaliters). This is partly explained by usage of more industrial/recycled water instead of



Brackish surface	Relevant	175,000	Much lower	fresh water (recycled water increased about 5%) as well as shifts between different fresh water categories reported as Linde transitioned to the new GRI standard 303 for Water and Effluents. E.g. a plant in China changed their water supply from fresh water sources to brackish water which alone accounted for 5,000 megaliters decrease in fresh water withdrawal. About 70% of fresh water withdrawal. About 70% of fresh water withdrawn is returned to its original source with its original water quality after usage. Linde works continuously to improve its water intensity by e.g. increasing the amount of cooling cycles or other water efficiency programs (e.g. improved machinery) which reduce water consumption.  Withdrawal of sea water decreased
water/Seawater	Relevant	175,000	Much lower	by about 10% from 2018 to 2019. This is due to improved production processes and production downtime in some of the plants concerned (only a handful of plants use sea water and therefore make up the total consumption of brackish water). 99% of brackish water withdrawn is returned unpolluted to the sea.
Groundwater – renewable	Relevant	10,700	Much lower	Groundwater represents just a small portion of total water withdrawal by Linde (2%). In 2019 this reduced by 50% (from about 20,000 to about 11,000 megaliters). A reason is mainly the shift to other fresh water sources.
Groundwater – non- renewable				
Produced/Entrained water				



Third party sources	Relevant	218,000	Much higher	Water withdrawal from 3rd party sources, including municipal water, increased by 50% from 2018 to 2019. This is especially due to an increase in recycled/ industrial water usage. Linde in 2019 saw a shift in water consumption towards non-fresh water sources. This means higher usage of industrial/ recycled/ used water and a reduction in fresh water usage. As third-party water represents a smaller amount / portion of water the percentage increase is much higher than the percentage decrease from freshwater
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# W1.2i

# (W1.2i) Provide total water discharge data by destination.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Fresh surface water	Relevant	358,000	Much lower	Most freshwater withdrawn is returned to its original source with its original water quality. Total water discharge to surface water reduced by 15% from 2018 to 2019, mainly due to the reduced withdrawal of fresh water (due to a move to industrial water and brackish water, as well as efficiency measures and plant downtimes).
Brackish surface water/seawater	Relevant	173,000	Much lower	Linde returns about 99% of sea water used. In 2019 the amount of sea water withdrawn decreased by about 20% and so did the water discharge.
Groundwater	Not relevant			Groundwater represents a very small portion of water usage by Linde (2%). Only a minimum portion of Linde's water



				withdrawal is returned to groundwater (below 1,000 megaliters m³).
Third-party destinations	Relevant	111,000	Much higher	This includes water discharged to water sources other than fresh water (e.g. discharge to 3rd party treatment facility or to a destination where water is recycled and reused in industrial processes). 100% of water withdrawn from industrial water sources (used, recycled water) is returned to the same water source. Water discharges to third party destinations (for industrial/recycled water) increased by 76% in 2019. This is due to shifts between fresh water and industrial water consumption (more industrial/used water consumed than fresh water, therefore increase in disposal as well) and due to a smaller figure for used/industrial water as part of total water.

# W-CH1.3

(W-CH1.3) Do you calculate water intensity for your activities in the chemical sector?  $_{\mbox{\scriptsize Yes}}$ 

# W-CH1.3a

(W-CH1.3a) For your top five products by production weight/volume, provide the following water intensity information associated with your activities in the chemical sector.

#### Product type

Bulk inorganic chemicals

#### Product name

All products: For reasons of confidentiality of business data, Linde is reporting water intensity for all products under a single row, rather than per product type.

## Water intensity value (m3)

0.82

Numerator: water aspect

Total water consumption



#### Denominator

Other, please specify thousand Nm3

#### Comparison with previous reporting year

About the same

#### Please explain

Water intensity value represent the ratio of total water consumption against our total production volume. Water intensity remained about the same (slight improvement). While production increased slightly by 2%, the variation in intensity is attributed to the slight decrease in water consumption by 2.5% from efficiency and improvement projects to reduce our total water consumption in the production process. For example, Linde South America saw another 5% reduction in water consumed in 2019 compared to 2018 which contributed further in the slight improvement in water intensity.

#### W1.4

#### (W1.4) Do you engage with your value chain on water-related issues?

Yes, our suppliers

#### W1.4a

(W1.4a) What proportion of suppliers do you request to report on their water use, risks and/or management information and what proportion of your procurement spend does this represent?

#### Row 1

% of suppliers by number

76-100

% of total procurement spend

76-100

#### Rationale for this coverage

Linde suppliers must demonstrate sound environmental management and provide reliable service, including for water, which is essential for many parts of Linde's business. Consistent with our mission, values and business requirements: 100% suppliers are contractually required to follow Linde's terms and conditions, this includes reference to its Supplier Code of Conduct (SCOC). It outlines Linde's expectations of suppliers to commit to continuous improvement of environmental protection, have an environmental management system, and support Linde's programs and targets related to climate change, environmental stewardship and sustainability.

Linde engages with these suppliers in order to collect information about their environmental initiatives and performance, including those related to water use, to promote increased awareness and develop collaborative and mutually beneficial relationships



#### Impact of the engagement and measures of success

Linde's SCOC requires all suppliers to provide information about environmental management, including for water; and to provide data or conduct self-assessments in environmental (and other) performance. Where Linde considers the result of this reporting to be unacceptable or critical, suppliers are requested to rectify the identified problems within an allocated time period based on a specific action plan.

This collaboration has helped us to maintain our level of production across the value chain. We set ambitious targets and measure success in terms of target fulfilment in our risk-based supplier audit schedule, which audits suppliers on a planned basis. Success is additionally measured through re-assessments or follow-up audits. Several suppliers have implemented water consumption programs using this resource responsibly and achieve noticeably results where they have achieved up to 90% reduction, either in their production processes or for other administrative uses.

#### Comment

## W1.4b

(W1.4b) Provide details of any other water-related supplier engagement activity.

#### Type of engagement

Onboarding & compliance

#### Details of engagement

Requirement to adhere to our code of conduct regarding water stewardship and management

#### % of suppliers by number

76-100

#### % of total procurement spend

76-100

#### Rationale for the coverage of your engagement

Suppliers, Contractors and third parties ("Suppliers") play a critical role in Linde's ability to operate and provide products and services to its customers. Suppliers actions and practices also reflect on Linde. Therefore, the company chooses Suppliers carefully based on merit and a due diligence process. Linde expects Suppliers to comply with legal requirements and to act in a manner that is consistent with Linde's values and the principles outlined in its Code of Business Integrity.

Linde's Supplier Code of Conduct ("Supplier Code of Conduct") defines Linde's minimum



requirements for our Suppliers concerning their responsibilities towards Linde and its stakeholders, societies and the environment.

#### Impact of the engagement and measures of success

The Supplier Code of Conduct increases supplier engagement in support of Linde's corporate Code of Conduct, including in regard to water stewardship and management. The Code requires implementation of an environmental management system, among other requirements. Measurement of success: Linde's procurement function actively assesses its suppliers with supplier evaluations and audits conducted on a planned basis, including on environmental aspects. Linde measures success by evaluating the status of supplier engagement, for example the achievement of water consumption reduction targets, during regular meetings or during the supplier audit process. Some suppliers have considered a full assessment, including of water stressed areas, to adopt appropriate programs. Linde acknowledges suppliers' efforts on their total water approach with treatment stations allowing circular usage or discharge according to local regulation purity requirements.

#### Comment

#### Type of engagement

Innovation & collaboration

#### Details of engagement

Educate suppliers about water stewardship and collaboration

#### % of suppliers by number

76-100

#### % of total procurement spend

76-100

#### Rationale for the coverage of your engagement

In conformance with Linde's Supplier Code of Conduct and audit requirements, suppliers provide Linde with information on sustainability initiatives, including projects to optimize water use, which reduces Linde's value chain water footprint. In addition, Linde invests in these supplier relationships by engaging with suppliers to share best practice in water stewardship and collaboration.

#### Impact of the engagement and measures of success

Linde supports, in cooperation with the suppliers, analyses and action plans that help suppliers improve environmental management and water consumption. The impact of the engagement is a reduction in supplier water consumption of product sold to Linde. Success is measured from reports on water reduction/ other sustainability initiatives. The level of detail provided by suppliers is increasing. On procurement direct categories, suppliers have engaged in the past years in long term programs with clear target to minimize their activity impact on water. In some cases, they have achieved up to 90% reductions in water use. Example: As part of its general sustainability program and its supply agreement with Linde, two of our global cylinder



manufacturers undertook to reduce the CO2e emitted and water used per cylinder sold to Linde. Based on annual sales to Linde, these combined savings were >500MT CO2e and >300,000 M3 potable water.

Comment

# W2. Business impacts

# W2.1

(W2.1) Has your organization experienced any detrimental water-related impacts?  $$\rm No$$ 

### W2.2

(W2.2) In the reporting year, was your organization subject to any fines, enforcement orders, and/or other penalties for water-related regulatory violations?

No

# W3. Procedures

## W-CH3.1

(W-CH3.1) How does your organization identify and classify potential water pollutants associated with its activities in the chemical sector that could have a detrimental impact on water ecosystems or human health?

Linde has operating permits that limit pollutant levels in wastewater discharge at certain sites. The permitting agency identifies the water pollutants that Linde must monitor. Linde follows standard protocols and regulatory requirements for monitoring wastewater. Linde has not identified additional water pollutants beyond those identified in the permits

Linde is an industrial gas company whose primary products are oxygen, hydrogen, etc. Our raw materials do not contain significant amounts of chemicals that are classified as potential water pollutants. Nevertheless, Linde tracks emissions to water at least annually for certain substances, e.g. COD, in its eKPI reporting system.

Water-quality related impacts are of minor importance within Linde's supply chain. As an industrial gas company, our raw materials consist largely of air and natural gas as a feedstock. 99% of our raw materials by weight are from renewable sources. Therefore, we do not consider water to be a significant issue in our supply chain.



# W-CH3.1a

(W-CH3.1a) Describe how your organization minimizes adverse impacts of potential water pollutants on water ecosystems or human health. Report up to ten potential pollutants associated with your activities in the chemical sector.

Potential water pollutant	Value chain stage	Description of water pollutant and potential impacts	Management procedures	Please explain
chemical oxygen demand (COD)	Direct operations	Chemical Oxygen Demand is an important water quality parameter because it provides an index to assess the effect discharged wastewater will have on the receiving environment.  Several of Linde's plants operate under wastewater discharge permits issued by a government body that require us to monitor and manage COD levels.	Compliance with effluent quality standards	About 70% of Linde's freshwater consumption is once-through cooling water that is returned to the water sources (either directly or through a municipal utility) at the same or better quality than it was withdrawn. For this reason, we do not view water quality as a material issue and do not manage wastewater discharge beyond regulatory requirements. To our knowledge, our wastewater discharges have not had a negative impact on any water body we discharge to.  In our environmental reporting system we collect data on chemical oxygen demand annually to fulfil general reporting requirements according to GRI standards.
Other water emissions like nitrates, phosphates or BOD	Direct operations	Summary of other typical water pollutants.	Compliance with effluent quality standards	Some of our plants have the local obligation to measure different parameters in wastewater discharges. However, overall the figures for the whole Linde group are insignificant, therefore Linde does not collect other water emissions during its annual environmental key performance indicator reporting process. Linde plants only measure or report these data to local authorities where this is asked by local regulatory requirements.



#### W3.3

#### (W3.3) Does your organization undertake a water-related risk assessment?

Yes, water-related risks are assessed

#### W3.3a

(W3.3a) Select the options that best describe your procedures for identifying and assessing water-related risks.

#### Direct operations

#### Coverage

Full

#### Risk assessment procedure

Water risks are assessed as part of an enterprise risk management framework

#### Frequency of assessment

Annually

#### How far into the future are risks considered?

More than 6 years

## Type of tools and methods used

Tools on the market Enterprise Risk Management Other

#### Tools and methods used

WRI Aqueduct

Internal company methods

External consultants

National-specific tools or standards

Other, please specify

Water Management Plan (tool to assess current water status, water risks and mitigation actions)

#### Comment

We used the WRI Aqueduct Water Risk Atlas tool to map the production sites located in water stress areas based on their GPS coordinates. We also assessed future changes in water availability at production sites that are under evaluation in our risk assessment until 2030 and 2040 for where potential increase in water stress may exist. The Global mapping tool contains projections of future water stress for the years 2030 and 2040, considering optimistic, business-as-usual and pessimistic climate and growth scenarios..



Additionally, Linde's Water Management plans (WMPs) program is rolled out to all high water use sites that are in areas of water stress. See also W8, Targets.

#### Supply chain

#### Coverage

Partial

#### Risk assessment procedure

Water risks are assessed in an environmental risk assessment

#### Frequency of assessment

More than once a year

#### How far into the future are risks considered?

1 to 3 years

#### Type of tools and methods used

Enterprise Risk Management International methodologies Other

#### Tools and methods used

Environmental Impact Assessment Internal company methods

#### Comment

As an industrial gas company, our raw materials consist largely of air and natural gas as a feedstock. 99% of our raw materials by weight are from renewable sources incl. air or water. As part of the quarterly risk management process, Linde subsidiaries should also inform about risks related to suppliers incl. e.g. procurement risks due to water issues at the supplier. In recent years, such risks haven't been recorded. In addition, for a part of Linde's strategic suppliers Linde conducts a water risk evaluation every 3 years or more via audits according to the company's Environmental Management Systems and defines, in cooperation with the suppliers, action plans to mitigate the risks.

## Other stages of the value chain

#### Coverage

None

Comment

#### W3.3h

(W3.3b) Which of the following contextual issues are considered in your organization's water-related risk assessments?



	Relevance & inclusion	Please explain
Water availability at a basin/catchment level	Relevant, always included	Water is required to operate the production plants and make our products. Therefore, water availability is considered key and relevant to our operations.  Tool: Linde uses the WRI Aqueduct Water Risk Atlas tool, which provides an evaluation of the areas of water stress linked to the water availability (current and projected) where production sites are located. This assessment is part of Linde SD 2018-2028 water target.
Water quality at a basin/catchment level	Relevant, sometimes included	Water withdrawal quality is monitored several times a year to meet the requirements and water specifications intended for its use at the production facilities. We also work closely with our water treatment suppliers to consider the need for pre-treatment and/or adapt to variable water quality.  Water discharge quality is considered in locations where Linde has a regulatory compliance obligation to meet wastewater discharge pollutant limits. In these locations, the quality of incoming water is monitored on occasions, and outgoing discharges are monitored per the permit requirements.  Tool: Onsite water quality measurements and National specific standards includes national (and in some cases local) discharge pollutant limits, which are specified in a site's wastewater discharge permit.
Stakeholder conflicts concerning water resources at a basin/catchment level	Relevant, always included	Some of our facilities are located in areas where insufficient water supply can impact the operations of our production facilities and can be a concern to the local community and other local stakeholders (customers). Linde's Water Management Plan SOP requires that relevant facilities engage with key stakeholders to understand potential water conflicts and consider these concerns, as they may also impact our license to operate.
Implications of water on your key commodities/raw materials	Not relevant, explanation provided	Linde's key raw material is ambient air; we also use natural gas as a feedstock. Water is not relevant to the current or future production of key raw materials by suppliers.
Water-related regulatory frameworks	Relevant, always included	Linde closely monitors regulatory developments related to water, particularly if they will result in restrictions to the amount of water one of our facilities may withdraw. Linde's regional SHEQ groups review local environmental regulatory requirements for sites in



		their regions, and many use third-party services to assist in regulatory monitoring globally.  Tool: Linde has several subscription services that provide updates on current and future regulatory developments.
Status of ecosystems and habitats	Relevant, always included	Linde manages the risk to biodiversity impacts from its operations through a risk assessment process, its criteria for pre-investment site assessment, and a broad program of employee environmental awareness that has a special focus on biodiversity.
		Linde's operations do not have a significant impact on biodiversity. An evaluation of more than 600 production sites established that none of these sites is located in the vicinity of a protected area. Many sites are located in industrial zones or business parks. When planning new sites, processes are in place to ensure that Linde minimizes any potential negative impacts on biodiversity. It follows internationally recognized guidelines when performing its evaluations, such as the Voluntary Guidelines on Biodiversity-Inclusive Impact Assessment issued by the United Nations.
		Example of employee engagement: Linde employees have planted trees to restore an area of forest and are helping to maintain this area as an animal refuge and ecological corridor. Thanks to these efforts, the area is now in an advanced stage of regeneration.
		Linde has an SD 2028 target for Global Giving: to increase environmental/climate-related philanthropic spend by 50%. The objective of this target is to direct additional Global Giving funds towards initiatives that will have a positive impact on the environment/climate change and to support Linde's new Climate Change targets. Linde has long-standing relationships with global environmental non-profit organizations such as The Nature Conservancy and the Arbor Day Foundation. Our company also supports regionally based environmental programs in various countries, including Mexico, Canada, South Korea and India. Many of these programs have a direct or indirect water conservation component.
		Tool: Linde uses the WRI Aqueduct Water Risk Atlas tool, which provides a watershed report.
Access to fully- functioning, safely	Relevant, always included	Linde minimum requirement procedure for OHS for site engineering includes a section on Adequate General Working Conditions, this requires that general working conditions shall be of an adequate



managed WASH services for all employees	standard to protect employee health that include provisions for clean water, toilet and washing facilities and safe and clear eating facilities/area. This includes living accommodation if provided and managed by Linde.
Other contextual issues, please specify	

# W3.3c

# (W3.3c) Which of the following stakeholders are considered in your organization's water-related risk assessments?

	Relevance & inclusion	Please explain
Customers	Relevant, always included	Linde includes customers because customers provide ~20% of the water we use to operate our facilities. We also measure how our products help our customers provide safe drinking water. In 2019, two contracts were signed in Texas to use CO2 for lime softening in drinking water treatment. In 2020, Linde is expecting a long-term supply agreement for CO2 to be used in desalination in the US. Those plants help to mitigate water shortages and, by diversifying water sources, support the cities' sustainable development efforts.
Employees	Relevant, always included	We strive to continually improve our water performance through employee training and awareness to help reduce overall freshwater withdrawals at production facilities and contribute to our sustainability strategy at location in areas of high-water stress. Regional teams driving efficiency projects are supported by the water experts at Linde and participate to water-related risk assessment. Training and best practices communication materials are provided to increase employee engagement and awareness level around water systems operations  We also continually improve our water performance through employee training and awareness. Employees are incentivized to help Linde meet our 2028 sustainable development targets, which include saving \$1.3 billion from sustainable productivity (cumulative, 2018-2028). Sustainable productivity measures financial and environmental savings in Linde's environmental KPI areas, including water management.
Investors	Relevant, always included	There is a growing interest from investors relating to ESG topics, especially related to climate change, but also other environmental topics like water. Linde annually participates in various ESG assessments where water management and water strategy and targets is among the topics asked. Linde furthermore receives regular



		enquiries from investors regarding sustainability topics, including environmental topics like climate, energy or water. Linde is listed in the FTSE4Good and the Dow Jones Sustainability Index which include assessments regarding the company's water management and stewardship, thus a positive rating also depends on a good management of water related issues. Linde's water target definition of sites that should report water use (sites in areas of water stress) is aligned with the SASB Standard for Chemicals companies. As part of its target setting process including especially investor interests Linde has identified water as an important item and therefore defined a water target among its new suite of 2028 sustainability targets.
Local communities	Relevant, always included	Linde's Global Standard procedure for water management plans requires active engagement with key stakeholders, including an annual assessment of key stakeholder concerns. Local communities are critical to our license to operate and our reputation as a responsible corporate citizen. Our activities support conservation in local communities, and our products and services help communities increase access to safe drinking water. In 2019, Linde enabled the delivery of safe drinking water to 290 million people.
NGOs	Relevant, sometimes included	Linde's Global Standard procedure for water management plans requires active engagement with key stakeholders, including an annual assessment of key stakeholder concerns. Good management practices have been implemented at sites operating within and near residential areas by alternating between different well supplies and avoiding operation simultaneously which prevents lowering the water table. Linde also engages with key stakeholders on water issues, including with NGOs and local communities in China, Brazil, Mexico and the U.S.  Linde has an SD 2028 target for Global Giving: to increase environmental/climate-related philanthropic spend by 50 percent. The objective of this target is to direct additional Global Giving funds towards initiatives that will have a positive impact on the environment/climate change and to support Linde's new Climate Change targets. Linde has long-standing relationships with global environmental non-profit organizations such as The Nature Conservancy and the Arbor Day Foundation. Our company also supports regionally based environmental programs in various countries, including Mexico, Canada, South Korea and India. Many of



		these programs have a direct or indirect water conservation component.	
Other water users at a basin/catchment level	Not relevant, explanation provided	Linde has not evaluated the needs of other water users in our water risk assessment. The primary stakeholders of our risk assessment are identified in the other rows in this section. Other water users are not expected to become relevant stakeholders in the short or medium term.	
Regulators	Relevant, always included	Linde's Global Standard procedure for water management plans requires active engagement with key stakeholders, including an annual assessment of key stakeholder concerns. Linde considers current and future regulatory developments in regions where we operate and in areas we consider for siting new facilities.	
River basin management authorities	Relevant, sometimes included	Linde's Global Standard procedure for water management plans requires active engagement with key stakeholders, including an annual assessment of key stakeholder concerns. In our Brazil business, one of our facilities participates in GPMAI, the local environmental professionals industry group in the area and with the local river-basin/watershed committee (Ceivap) that often is engaged in local water issues. CEIVAP: Comitê para a Integração da Bacia Hidrográfica do Rio Paraíba do Sul (CEIVAP), was organized in 1996 under the IWRM (Integrated Water Resources Management) principles of catchment integration and stakeholder involvement. IWRM: "a process which promotes the coordinated development and management of water, land and related resources in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems"	
Statutory special interest groups at a local level	Not relevant, explanation provided	Linde does not review the needs of statutory special interest groups relevant in our water risk assessment. We do not have plans to include these groups in the future, as we do not currently consider these relevant stakeholders.	
Suppliers	Relevant, always included	Supplier risk assessments are part of our standard quarterly risk assessment process. In recent years, no material risks from suppliers related to water issues were recorded in our risk management system. In addition, Linde evaluates water risk for some of its strategic suppliers via the audits and helps to establish actions plans and monitor those on a regular basis.	
		We also engage with water treatment suppliers who service our sites to increase cycles and reduce cooling water usage. This engagement has helped Linde operations realize >20% water reduction since 2006 and water savings of \$1.9 million from monitoring and optimizing	



		cooling tower cycles along with treatment.
Water utilities at a local level	Relevant, always included	Linde considers the needs of water utilities - both those supplying water to our sites, and those to whom we provide wastewater treatment products and services.  Increased urbanization and urban populations growth have exerted significant pressure on urban water demand and expansion of urban water infrastructure. Investments are needed to modernize water infrastructure in many urban areas around the world. Municipalities are seeking solutions to improve water quality. Linde identified the need for its water applications in San Antonio, Texas. The San Antonio Water System (SAWS) in Texas recently signed three long-term gas supply agreements with Linde. In 2019, two contracts were signed to use CO2 for lime softening in drinking water treatment. In 2020, Linde is expecting a long-term supply agreement for CO2 to be used in desalination in the US. Those plants help to mitigate water shortages and, by diversifying water sources, support the cities' sustainable development efforts.
Other stakeholder, please specify	Not considered	

## W3.3d

(W3.3d) Describe your organization's process for identifying, assessing, and responding to water-related risks within your direct operations and other stages of your value chain.

The Linde risk management (RM) department is a global function independent of the business lines, headed by the Group head of internal audit and risk management.

The central RM department is responsible for devising a standardised Linde-wide RM process and for risk reporting. The local business units are responsible for the implementation of this standard RM process. Linde's RM system is forward-looking. It is continuously being improved in order to enhance its effectiveness.

The RM system is based on three components: Enterprise risk management (ERM), internal controls (IC) and business continuity management (BCM).

#### RM process:

At the very heart of all RM is a cyclical risk management process, involving a series of steps from the identification of a risk, to the analysis, evaluation and treatment of the risk (risk mitigation). Uniform standards apply throughout Linde to the reporting of the status of any significant risks and any changes in those risks. Local units make their risk reports using a Linde-wide web-based reporting tool.

Risk identification:



The management team of each operating unit within Linde identifies the main risks affecting that unit. In addition, global functions are asked to report risks affecting their area of responsibility. When identifying risks, a great variety of areas which might entail risk are taken into consideration, both within and outside Linde. The areas covered by the risk assessments include not only internal processes and resources as well as the economic, financial, regulatory environment, but also social and ecological aspects including water risks. Furthermore, also risks related to the supply chain must be reported. The RM process allows for reporting of short-term risks, medium- or long-term risks and impacts. Suppliers risks are additionally evaluated during regular supplier audits.

With regards to environment Linde has defined 4 risk areas: regulatory risks, market risks, reputational risks and physical risks.

#### Risk assessment:

The executives in the various units categorise each risk they have identified and evaluate it in terms of criteria determined centrally, including the potential impact of the risk on Linde and the estimated probability of its occurrence. When evaluating the potential impact of risks and the expected probability of their occurrence, the operating units use a standard scale devised by the central RM department. This scale has four different risk ratings ranging from low risk to very high risk. Each risk is awarded a risk rating on this standard scale based on its potential impact and its probability. Risks with the highest potential impact (severity) rating are classified as significant risks. Those significant risks, including their probability of occurrence, are presented in detail to top management on a regular basis. To date, significant water risks were not identified.

#### Risk reporting:

The operating units as well as global functions record the information gathered by the RM process in the central RM database and ensure that their risks and risk treatment plans are kept up-to-date and that significant emerging risks are recorded. Throughout the year, a summary of risks is presented on a regular basis to the regional heads and once a year to the full management committee as well as the Board of Directors.

Company Risks are described also in Linde's annual report (10K).

In addition to the standard RM process, a materiality assessment is conducted to assess the non-financial Priority Factors expected to have a significant impact, positive or negative, on growth drivers over the next 10 years. Water was identified in 2019 as a key element of the priority factor "Environment, Safety & Health". As such, a water target was established to implement a globally standardized water management plan (WMP) at 100% of Linde high-water use sites in areas of water stress, as defined by the WRI Aqueduct Water Risk Atlas mapping tool by 2028.

Linde uses the WRI Aqueduct Water Risk Atlas to assess current and future water risk at each site and monthly subscription services to monitor regulatory developments related to water availability and quality. We consult with insurance providers at least annually who use tools to assess risks related to company assets. These tools, and local knowledge, help us better understand local circumstances.

Linde high-water use sites in areas of water stress are obliged to report their water withdrawal quarterly into Linde's environmental reporting tool, to monitor and track the site water availability. In



addition, the water management plan includes a process for annual review of potential water-related risks pertaining to water regulations, permitting and pricing structures changes as well as projected changes, to confirm the site is in compliance and to minimize risk by defining mitigation actions and projects to encounter those water-stress and water-related risks.

# W4. Risks and opportunities

#### W4.1

(W4.1) Have you identified any inherent water-related risks with the potential to have a substantive financial or strategic impact on your business?

#### W4.1a

# (W4.1a) How does your organization define substantive financial or strategic impact on your business?

When evaluating the potential impact of risks and the expected probability of their occurrence, Linde uses a standard scale devised by the corporate risk management department. This scale has four different risk ratings ranging from low risk to very high risk. Each risk is assigned a risk rating on this standard scale based on its potential impact and probability.

Risks with the highest potential impact (severity) rating are classified as significant (substantive) risks. Those substantive risks, together with their probability of occurrence, are presented in detail to top management on a regular basis.

When analyzing the impact of the risk, Linde considers not only the impact on the financial results of operations, but also the impact on non-monetary aspects such as safety, environment, reputation and strategy.

<u>Monetary aspect: Example: Substantive financial impact</u> includes, for example, the replacement cost of a single production facility, which could be more than \$30 million.

<u>Non-monetary aspects:</u> Risks which could cause considerable harm to people or the environment (e.g. loss of life) are considered substantive, regardless of their monetary impact.

## W4.3

(W4.3) Have you identified any water-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes, we have identified opportunities, and some/all are being realized



### W4.3a

(W4.3a) Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business.

#### Type of opportunity

Markets

#### Primary water-related opportunity

Expansion into new markets

### Company-specific description & strategy to realize opportunity

Changes in precipitation extremes are leading to water shortages, especially in mega-cities where there are population pressures. This in turn leads to stricter regulation of water quality, as we are seeing in emerging economies such as China. This presents a market opportunity for Linde to increase revenue in countries such as China through access to new markets as we develop and deliver customized systems to help industrial plants and municipalities meet their wastewater management goals.

We work directly with our customers to provide beginning-to-end treatment methods, from needs assessment and treatment strategy to equipment design, installation and industrial supply. We offer a wide range of applications that treat and reuse process water, all while maximizing treatment capacity, reducing VOC emissions, improving safety and reducing costs.

Linde's water technology offerings are supported by a business development group, which is actively investing in innovation and business development.

Case study: Increased urbanization and urban populations growth have exerted significant pressure on urban water demand and expansion of urban water infrastructure. Investments are needed to modernize water infrastructure in many urban areas and municipalities around the world. The city of Sydney, Australia, uses desalination, enabled by Linde, to provide water for 15% of its population. Linde identified the need for its water applications in San Antonio, Texas. The San Antonio Water System (SAWS) in Texas recently signed three long-term gas supply agreements with Linde. In 2019, two contracts were signed to use CO2 for lime softening in drinking water treatment. In 2020, Linde is expecting a long-term supply agreement for CO2 to be used in desalination in the US. Those plants help to mitigate water shortages and, by diversifying water sources, support the cities' sustainable development efforts.

Water applications are an important area within Linde's eco and social product portfolio (products which bring environmental or social advantages to customers). Linde defined a target that Linde's sustainability portfolio should annually exceed 50% of sales revenues, 2018-2028. In 2019, our sustainability portfolio was 53% of revenue or \$13.5 billion.



By setting a target for our sustainability portfolio, Linde is showing its commitment to serve new markets that will develop to meet needs from increased stress on water quality and availability.

#### Estimated timeframe for realization

1 to 3 years

#### Magnitude of potential financial impact

Low

#### Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

#### Potential financial impact figure (currency)

4,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

#### **Explanation of financial impact**

The potential financial implications can be calculated from the size of the market and the size of Linde's opportunity. The major factors driving the industrial wastewater treatment market include depleting freshwater resources and stringent regulations pertaining to emission and treatment of industrial waste. According to the new market research report, "Industrial Wastewater Treatment Market by Type (Coagulants, Flocculants, Biocides & Disinfectants), End-Use Industry (Power Generation, Mining, Chemical) and Region (APAC, Europe, North America, MEA, South America) - Global Forecast to 2024", published by MarketsandMarkets™, the Industrial Wastewater Treatment Market is expected to grow from USD 11.3 billion in 2019 to USD 15.0 billion by 2024, at a CAGR of 5.8%. Wastewater treatment is an important end market for Linde and represented a market opportunity of about \$70 million in 2019. Assuming a CAGR of 5.8% this equates to about \$4 million in growth per year (\$70 million x 5.08% = \$4,060,000, which we rounded to \$4 million).

#### Type of opportunity

Products and services

#### Primary water-related opportunity

Sales of new products/services

#### Company-specific description & strategy to realize opportunity

The effects of climate change are increasingly visible on the environment, society and the global economy. Linde expects that in the future demand for products that offer social and environmental benefits will grow, especially in the area of climate change, including solutions for water quality / access to drinking water.



Linde's innovation group is continuously improving the existing product portfolio and finding new and efficient solutions which help our customers to become more productive and help sustain our planet. Linde works directly with its customers to provide beginning-to-end water treatment methods, from needs assessment and treatment strategy to equipment design, installation and industrial supply. We offer a wide range of applications that treat and reuse process water, all while maximizing treatment capacity, reducing VOC emissions, improving safety and reducing costs.

Case study: Many regions in North Africa, the Middle East, Australia, the United States and Mexico are already dependent on the desalination of seawater. Worldwide, there are circa 12,000 large water desalination plants. The result of this procedure, however, is pure H2O, i.e. water without minerals, which is suited neither for drinking nor agriculture. To enrich this water with minerals such as calcium and magnesium, its pH value must first be adjusted using a complex acidification process. This process can be done in a more natural and environmentally friendly manner with the aid of carbon dioxide.

To add the correct dosage of this gas to the water, Linde engineers have developed the SOLVOCARB system. SOLVOCARB is in use at the Sydney, Australia Desalination Drinking Water Plant uses CO2 produced in industrial processes in order to make the blue gold usable. Up to 6,000 tonnes of this gas flow into the plant yearly. With the help of the carbon dioxide, up to 250 million litres of water can be produced daily – which corresponds to circa 15 percent of Sydney's water needs.

Linde has a 2028 target that its sustainability portfolio - applications that bring customers sustainability benefits - should annually exceed 50% of annual revenue. In the area of water Linde offers solutions for municipal water treatment, application in textiles and pulp and paper, aquaculture and water desalination. In 2019, Linde realized 53% of revenues with its sustainability portfolio.

#### Estimated timeframe for realization

1 to 3 years

#### Magnitude of potential financial impact

Medium

#### Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

#### Potential financial impact figure (currency)

140,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)



#### **Explanation of financial impact**

The potential financial implications can be calculated based on an assumption of Linde's top line growth and the target that the sustainability portfolio annually contributes to >50% of the revenue. If Linde's top line grows 1% per year then this equates to about \$140 million of growth in revenue per year from Linde's sustainability portfolio.

# W6. Governance

# W6.1

## (W6.1) Does your organization have a water policy?

Yes, we have a documented water policy that is publicly available

# W6.1a

#### (W6.1a) Select the options that best describe the scope and content of your water policy.

	Scope	Content	Please explain
Row 1	Company- wide	Description of water- related performance standards for direct operations Reference to international standards and widely recognized water initiatives Company water targets and goals Commitment to align with public policy initiatives, such as the SDGs Commitments beyond regulatory compliance Commitment to water- related innovation Commitment to stakeholder awareness and education Commitment to water stewardship and/or collective action	Water issues within Linde are managed under the company's Global Health, Safety and Environmental (SHEQ) Policy (available at https://www.linde.com/en/about-linde/safety-and-environment)  In addition, Linde's Sustainable Development and Climate Change Position Statement is also available publicly (https://www.linde.com/about-linde/sustainable-development)  These policies and position statements apply to all of Linde. The SD Position Statement directs Linde to establish and meet targets to address priority concerns. Water has been identified as part of Linde's SHEQ activity, and a target has been established to develop Water Management Plans (WMPs) at sites in areas of high-water stress per WRI Aqueduct tool (international widely recognized water risk mapping initiative). WMPs provide clear guidance and processes linked to water availability and quality, frequent monitoring of water use and efficiency to optimize its consumption.  The Water target as well as other Linde SD targets were developed with reference to internal and external expectations. These include ESG investors, who look for nonfinancial information as the basis to make better informed investor decisions (such as the Sustainability Accounting Standards Board



Acknowledgement of the human right to water and sanitation Recognition of environmental linkages, for example, due to climate change	[SASB]). They were also developed with stakeholders interested in understanding Linde's impacts within the context of global needs and planetary boundaries (such as described by the Global Reporting Initiative [GRI] reporting standards and the UN SDGs). Our SD targets contribute to several SDGs. Linde issues Indexes that show alignment with the GRI, TCFD and with SASB. For eq., Linde's 10-year water target activities contribute
Water Management Plan (tool to assess current water status, water risks and mitigation actions)	reporting is aligned with GRI 303 Water and Effluents (https://www.linde.com/about-linde/sustainable-development/reporting-center.)  Water-related Innovation: Linde has also identified water treatment as an opportunity to create shared value and has enabled an estimated 290 million people to have access to safe drinking water through our environmental technologies and our gases portfolio. An example is CO2 to support the provision of desalination for 15% of the population of Sydney, Australia. This activity falls under Linde's 10-year Climate Change target to annually achieve >50% revenue from applications that bring environmental and/or social benefit.  Linde's SHEQ Policy describes our environmental responsibility which also includes water.

# W6.2

(W6.2) Is there board level oversight of water-related issues within your organization?  $_{\mbox{\scriptsize Yes}}$ 

# W6.2a

(W6.2a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for water-related issues.

Position of individual	Please explain
Director on board	Linde's full Board of Directors has responsibility to review safety and environmental risk at each Board meeting. The Board has established a strategic business objective to maintain best-in-class performance in environmental responsibility. Annual payout of executive variable compensation will partly depend on performance in this area. Environmental issues are managed by the head of global SHEQ, reporting to the SVP of Linde's Global Functions.
	Linde's full Board reviews sustainability issues and Linde's performance against its SD 2028 targets, at least annually. It reviewed sustainability twice in 2019 and once early in 2020. The



full Board has approved Linde's new 10-year Climate Change and Sustainable Development (SD 2028) targets, which include a target for water management. In addition, the Board Nomination & Governance Committee has responsibility to periodically review the company's guidelines and policies governing its response to important issues in the area of corporate social responsibility, which includes climate change and water-related issues. Its Audit Committee reviews the guidelines and policies by which Linde undertakes enterprise risk assessment and risk management.

# W6.2b

#### (W6.2b) Provide further details on the board's oversight of water-related issues.

	Frequency that water-related issues are a scheduled agenda item	Governance mechanisms into which water-related issues are integrated	Please explain
Row 1	Scheduled - some meetings	Monitoring implementation and performance Overseeing major capital expenditures Providing employee incentives Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding strategy Reviewing and guiding corporate responsibility strategy Reviewing innovation/R&D priorities Setting performance objectives	Sustainable development is overseen by the Board and executive leadership and integrated throughout the company.  The Linde Board maintains oversight of the company's values and strategy. Each year, it conducts a comprehensive long-term strategic review of the company's outlook and business plans and provides advice and counsel to management regarding the company's strategic issues.  Its Audit Committee reviews the guidelines and policies by which Linde undertakes enterprise risk assessment and risk management.  The Board has responsibility to review environmental risk at each meeting, including risks from climate change, these may include water issues such as the impacts of extreme weather such as flooding and hurricanes Issues related to climate change are a topic at each Board meeting.  In 2019, the full Board requested several presentations on issues directly related to sustainability and climate change. The CSO reported to the full Board in mid-2019 on matters related to climate change, and a presentation was made on Linde's Technology and Decarbonization strategy.



During 2019, Linde developed its new 10-year Sustainable Development targets (which include several climate change targets) at the request of the Board. In January 2020, the Linde Board approved Linde's 10-year SD Targets. Linde's SVP briefs the Board, as does Linde's Chief Sustainability Officer, on Linde's performance against the company's 2028 sustainable development targets. Performance against those targets will be reviewed at least annually by the full Board of Directors.

In addition, the Board reviews safety and risk matters at each meeting, these may include climate change issues such as the impacts of extreme weather such as flooding and hurricanes.

The Board has confirmed the importance of setting non-financial objectives as part of variable compensation to reinforce leadership's focus on maintaining a culture that supports both short- and long-term sustainable results. It has established non-financial goals with respect to elements such as safety, environmental responsibility including climate change, global compliance, productivity and talent management. These measures are described in Linde's April 2020 proxy statement.

While water by itself is not considered a material risk, water-related issues are integral to Linde operations and are therefore considered. For example, when choosing a location for a new plant, water availability and cost are considered as part of overall operating planning and costs. These are long-term projections as plants are designed for 30+ years of operation.

## W6.3

(W6.3) Provide the highest management-level position(s) or committee(s) with responsibility for water-related issues (do not include the names of individuals).

Name of the position(s) and/or committee(s)

Chief Operating Officer (COO)

Responsibility



Both assessing and managing water-related risks and opportunities

# Frequency of reporting to the board on water-related issues Quarterly

#### Please explain

Linde's Senior Vice President (SVP) is the highest-ranking executive officer responsible for sustainability, including water issues. He is a member of the Office of the Chairman and reports directly to the CEO. The SVP is equivalent to what CDP calls the chief operating officer. He is the position with ultimate responsibility for water issues because water, like other SD issues, is integral to Linde's operations. The SVP has oversight over all key aspects of operations.

Linde's full Board of Directors reviews safety and environmental risk at each Board meeting. It has established a strategic business objective to maintain best-in-class performance in environmental responsibility. Environmental issues, including water management and water-related risks, are managed by the head of global SHEQ, reporting to the SVP. In addition, the Chief Sustainability Officer (CSO) monitors water issues on progress towards Linde's 2028 sustainable development targets, which include water targets.

## W6.4

(W6.4) Do you provide incentives to C-suite employees or board members for the management of water-related issues?

	Provide incentives for management of water-related issues	Comment
Row 1	Yes	The Board has confirmed the importance of setting nonfinancial objectives as part of variable compensation to reinforce leadership's focus on maintaining a culture that supports both short- and long-term sustainable results. It has established non-financial goals with respect to elements such as safety, environmental responsibility, global compliance, productivity and talent management. These measures are described in Linde's April 2020 proxy statement. Annual pay-out of executive variable compensation depends on performance in several strategic non-financial areas, including best-in-class performance in safety, environmental responsibility, global compliance, productivity and talent management. Selected key strategic and non-financial outcomes were included in variable compensation to recognize that these are also critical to measuring our businesses' health and the potential for future success.

#### W6.4a

(W6.4a) What incentives are provided to C-suite employees or board members for the management of water-related issues (do not include the names of individuals)?



	Role(s) entitled to incentive	Performance indicator	Please explain
Monetary reward	Corporate executive team Chief Executive Officer (CEO) Chief Financial Officer (CFO) Chief Operating Officer (COO) Chief Purchasing Officer (CPO) Chief Risk Officer (CRO) Chief Sustainability Officer (CSO) Other, please specify all managers eligible for Variable Compensation are entitled to this incentive	Reduction of water withdrawals Improvements in efficiency - direct operations Implementation of employee awareness campaign or training program Implementation of water-related community project Other, please specify Achievement of SD Water Target in relation to water management	The Board has confirmed the importance of setting nonfinancial objectives as part of variable compensation to reinforce leadership's focus on maintaining a culture that supports both shortand long-term sustainable results. It has established non-financial goals with respect to elements such as safety, environmental responsibility (including meeting its water targets), global compliance, productivity and talent management. These measures are described in Linde's April 2020 proxy statement. Annual pay-out of executive variable compensation depends on performance in those areas.  At the end of the year, management presented to the Compensation Committee the degree of achievement in meeting each goal. Based on the results, the committee determined that performance with respect to the strategic and non-financial goals was favorable and set the Corporate strategic and non-financial payout factor at 160% of target variable compensation (relative to a 200% maximum).  Reduction of water withdrawal and improvements in efficiency are part of Linde's sustainable productivity (SD) activity, and also part of the SD 2028 water target to develop water management plans (WMPs) at sites in areas of high water stress. The WMPs also include awareness raising activities, local stakeholders engagement as well as requirements for establishing specific procedures (behavior changes) like quarterly reporting, and tracking water figures and water risk monitoring.
Non- monetary reward	Corporate executive team Chief Executive Officer (CEO)	Implementation of water-related community project	Non-monetary rewards include non-financial awards or recognition to C-suite employees or other employees.  Linde has an active employee community



Chief Financial Officer (CFO)
Chief Operating Officer (COO)
Chief Purchasing Officer (CPO)

Chief Risk Officer (CRO)
Chief Sustainability
Officer (CSO)

Other, please specify

All employees -Recognition of employee community engagement in water-related projects engagement program. Each year projects are submitted for recognition in their geographic segments, and then globally. Projects selected are then recognized and financial awards are granted to the benefitting communities or organizations. These are celebrated in Linde's annual Community Engagement brochure, which is published online.

In 2019, one of the projects recognized helped support a local community with water sanitation in India. During the recent execution of a new project at a local hospital customer, APAC's Bangalore team reached out to community stakeholders and learned of a problem with water sanitation at a nearby school. With the procurement and engineering expertise of the Bangalore team, help from three other nearby Linde sites, and assistance from our construction contractors, it was a problem that could be solved. The team improved the water system by installing new purifiers and piping to optimize efficiency, and the team created a means for water collection for local gardens. The project also included lessons on hand hygiene and water conservation for schoolchildren. The team is proud of the potential health impacts for more than 100 children who study at the school.

## W6.5

(W6.5) Do you engage in activities that could either directly or indirectly influence public policy on water through any of the following?

No

#### W6.6

(W6.6) Did your organization include information about its response to water-related risks in its most recent mainstream financial report?

No, but we plan to do so in the next two years



# W7. Business strategy

# W7.1

# (W7.1) Are water-related issues integrated into any aspects of your long-term strategic business plan, and if so how?

	Are water- related issues	Long-term time	Please explain
	integrated?	horizon (years)	
Long-term business objectives	Yes, water-related issues are integrated	5-10	In terms of operational risk: Linde evaluates the effects of water risks in the regions in which it operates and in the regions in which it plans to build new sites. The availability of water is one of many factors taken into consideration when determining where to site new plants. Siting new plants is a key element of Linde's growth strategy, particularly in emerging markets. Linde's evaluation focuses on water availability and quality.  Additionally, targets were developed for 2018-2028 to drive water efficiency, particularly to address the potential risk of water scarcity in water stressed regions, and to increase opportunities related to Linde's gases for wastewater treatment and desalination applications.  Linde's long term objective and strategy is to annually (up to 2028) earn >50% revenues from products that bring environmental or social benefits. Our wastewater treatment applications as well as many other water solutions are part of Linde's sustainable development portfolio. These targets were set as a result of our sustainable development materiality assessment (SDMA).  Progress towards these targets are reported regularly to executive leadership and to the Board. The Board incentivizes this performance through its Variable Compensation program, which rewards performance with Variable Compensation that is awarded to all eligible managers in non-financial areas that support Linde's Strategic Business Objectives - including
Strategy for	Yes, water-	5-10	Environmental Performance.  Linde evaluates the effects of water risks in the regions in
achieving	related issues are integrated		which it operates and in the regions in which it plans to build new sites. The availability of water is one of many factors taken



long-term			into consideration when determining where to site new plants.
objectives			Siting new plants is a key element of Linde's growth strategy, particularly in emerging markets. Praxair's evaluation focuses on water availability and quality.
			Additionally, targets were developed for 2018-2028 to drive water efficiency, particularly to address the potential risk of water scarcity in water stressed regions, and to increase opportunities related to Linde's wastewater treatment products and applications, which help make safe drinking water available to millions of people around the world (see W8). In addition, our wastewater treatment applications are part of Linde's sustainable development portfolio, and Linde has a target to earn more than 50% revenue from the company's sustainability portfolio, which includes products and applications that bring environmental and social benefit. These targets were set as a result of our sustainable development materiality assessment (SDMA).
Financial planning	Yes, water-related issues are integrated	21-30	Linde evaluates the effects of water risks in the regions in which it operates and in the regions in which it plans to build new sites. The availability of water is one of many factors taken into consideration when determining where to site new plants or for selecting the appropriate plant design. Linde sites are built to last for 30 years or longer and elements such as water availability are projected for the life of the plant. Expected future cost of water or measures to mitigate water risk are factored into the financial long-term project plan. For example, a site in North America was planned for an area with little available water. The plant was designed to run on closed-system glycol rather than on electricity and water which also impacts the financial business plan of the project.  Additionally, targets were developed for 2018-2028 to drive water efficiency, particularly to address the potential risk of water scarcity in water stressed regions, and to increase opportunities related to Linder's wastewater treatment products and applications, which help make safe drinking water available to millions of people around the world (see W8). Our wastewater treatment applications are part of Linde's SD portfolio. Linde has a target to earn more than 50% revenue from this portfolio. The planned revenues from this SD portfolio including revenues from water applications are included in Linde's short and long-term financial planning.



#### W7.2

(W7.2) What is the trend in your organization's water-related capital expenditure (CAPEX) and operating expenditure (OPEX) for the reporting year, and the anticipated trend for the next reporting year?

#### Row 1

Water-related CAPEX (+/- % change)

Anticipated forward trend for CAPEX (+/- % change)

Water-related OPEX (+/- % change

Anticipated forward trend for OPEX (+/- % change)

Please explain

Linde considers this information business confidential

## W7.3

# (W7.3) Does your organization use climate-related scenario analysis to inform its business strategy?

	Use of climate-related scenario analysis	Comment
Row 1	Yes	Linde is aligned with the Paris Accord and as such, decided that the B2DS was the most appropriate to inform its business strategy. In 2019, Linde developed its 2028 climate change targets. As part of the target setting process, the company calculated a potential GHG emission pathway to 2050 (considered time horizon), using assumptions from the IEA B2DS, along with industry specific growth projections for our major product segments (e.g. hydrogen growth projection from the hydrogen council). Our analysis shows that Linde's targets and mid- to long-term GHG projections are in line with the GHG pathway for the chemical industry as reflected in the IEA B2DS.

## W7.3a

(W7.3a) Has your organization identified any water-related outcomes from your climate-related scenario analysis?

No

## W7.4

(W7.4) Does your company use an internal price on water?



#### Row 1

## Does your company use an internal price on water?

No, and we do not anticipate doing so within the next two years

## Please explain

Water availability has not been identified as an enterprise risk in Linde plc's annual risk assessment (see the 2019 Annual Report, Item 1A Risks). Linde does not currently place an internal value on water because the company has not identified any current or future substantive risks to availability. However, Linde does recognize the importance of water as a critical and vital resource to our operation while also being a global concern. As such, we manage water-related issues as based on the water stress evaluation, and Linde water target ensures that the company has a risk-based process to continuously evaluate water use efficiency and areas of improvement to monitor and reduce its use and consumption.

# W8. Targets

## W8.1

## (W8.1) Describe your approach to setting and monitoring water-related targets and/or goals.

	Levels for targets and/or goals	Monitoring at corporate level	Approach to setting and monitoring targets and/or goals
Row 1	Company-wide targets and goals Business level specific targets and/or goals Site/facility specific targets and/or goals Country level targets and/or goals	Targets are monitored at the corporate level Goals are monitored at the corporate level	Linde has set 10-year sustainable development targets, running 2018-2028. Targets were chosen to align with priority factors and KPIs.  Linde's 2019 sustainable development materiality assessment (SDMA) defined water as a priority issue. It is therefore a priority for the organization to manage from the point of view of its sustainability strategy that is signed off by the Board. It is also consistent with Linde's business model of resource productivity, it's concern about raw materials risk, and to meet external expectations.  Linde's company-wide 10-year target (2018-2028) is to Implement Water Management Plans (WMPs) at 100% high-water use sites in areas of water stress. The WMPs include a process for identifying water reduction opportunities where possible, in addition to annual review of potential water-related risks pertaining to water regulations, permitting and pricing structures changes as well as projected changes, to confirm the site is in compliance and to minimize risk by defining mitigation actions and projects to encounter those water-stress and water-related risks. This target is



consistent across our global operations and managed bottom up, with reporting from sites identified, in countries, in regions and then to Linde Operating Segments and then global. Depending on local conditions including local risks, Linde regions can also name sites to participate voluntarily and/ or take action beyond what is required by the target. Linde uses these best practices as a means to encourage replication in other businesses/regions.

For example: Linde in Brazil voluntarily adopted a target to reduce absolute water volume 1% each year from 2016-2020. (This target has now rolled to the SD 2028 target). Linde Brazil achieved this target for four consecutive years. At end 2019, they achieved an overall water reduction of more than 1,938,673 m³ – a cumulative reduction of 47.7%, compared to baseline. Investments were made to re-use rainwater and to condensate the water from thawing liquid vehicles hoses, and use it as make-up water at refrigeration towers.

Work to implement this target is undertaken by scores of site personnel in our 85 countries of operation, with support from business or corporate functions, consistent with their job descriptions. Additional time or costs are absorbed into normal operating expenses.

In addition: Sustainable Productivity is also a priority issue and KPI. Linde measures the environmental and cost savings from projects. This includes water savings from projects at our facilities that reduce water use. The target is operationalized in the same way as the water target - in this case quarterly performance reporting from the site level to the country, business, region, segment and corporate.

## W8.1a

(W8.1a) Provide details of your water targets that are monitored at the corporate level, and the progress made.

Target reference number

Target 1

Category of target

Monitoring of water use

Level



Company-wide

#### Primary motivation

Water stewardship

#### Description of target

Target: implement water management plans (WMPs) at 100% of high-water use sites in areas of high water stress. High stress means baseline water stress according to the WRI Aqueduct Water Risk Atlas Tool is" "high," or "extremely high." Scope is high-water use (hi-hi) sites, i.e. sites with >50,000 m³/ year water withdrawal, excluding once-through, non-contacting cooling water.

The WMPs include a process for identifying water reduction opportunities where possible, in addition to annual review of potential water-related risks pertaining to water regulations, permitting and pricing structures changes as well as projected changes, to confirm the site is in compliance and to minimize risk by defining mitigation actions and projects to encounter those water-stress and water-related risks.

For 2019, 22 sites were identified as covered under this target.

Also, businesses are encouraged to use local determinants of water risk; sites thus defined are included in this target scope.

#### Quantitative metric

Other, please specify
# of sites with water management plans

#### Baseline year

2018

#### Start year

2018

#### Target year

2028

#### % of target achieved

73

#### Please explain

Linde has begun the process of developing water management plans for the high water use sites located in high water stress areas.

By 2019, 73% sites have created and developed their Water Management Plan; all other sites are targeting the end of 2028 to have their plans completed.

In the first year of this target, we focused on updating our water stress assessment to reflect the



combined company by consolidating and putting reporting systems in place, investigate and identify opportunities for improving water efficiency across our operations, making technology investments, and working towards increasing the frequency of water reporting from annual to quarterly. Linde's business unit in South America has taken a leadership position and set a business unit-specific water reduction target (reduce water use 1% by 2020) that has already been achieved with another 5% reduction in water consumption in 2019 compared to 2018.

## W8.1b

(W8.1b) Provide details of your water goal(s) that are monitored at the corporate level and the progress made.

#### Goal

Providing access to safely managed Water, Sanitation and Hygiene (WASH) in local communities

#### Level

Company-wide

#### Motivation

Climate change adaptation and mitigation strategies

#### Description of goal

This goal is qualitative (without a tracked, time-specific, quantitative target). It supports our mission statement of "making our planet more productive" and shows actions related to water to enable safe drinking water to be provided to millions of people in countries where we operate. It indicates how Linde's products help contribute to access to drinking water, as well as to water security, reducing other water-related risks, and/or achieving other water commitments and to business objectives. This goal helps contribute to the UN SDGs. This goal is one outcome of Linde's SD2028 target to annually achieve >50% revenue from applications from Linde's sustainability portfolio, i.e. applications that bring environmental and /or social benefits, including water applications, which is one of Linde's 10-year Climate Change targets and includes the benefits noted above. In 2019, Linde achieved 53% revenue from its sustainability portfolio.

#### Baseline year

2019

#### Start year

2019

#### End year

2019

#### **Progress**

In 2019, Linde enabled an estimated 290 million people to have access to safe drinking water through our environmental technologies and our gases portfolio.



# W9. Verification

# W9.1

(W9.1) Do you verify any other water information reported in your CDP disclosure (not already covered by W5.1a)?

Yes

# W9.1a

(W9.1a) Which data points within your CDP disclosure have been verified, and which standards were used?

Disclosure module	Data verified	Verification standard	Please explain
W1 Current state	Water withdrawal from municipal supplies, fresh surface water sources, fresh groundwater, once-through cooling water returned to fresh water sources, net fresh water consumption, total once- through cooling water returned to the source of extraction	Other, please specify ISO 14064-3	Verification protocols specific to water do not exist (like they do for GHGs). Linde's audit also included verification of certain GHG data. The auditors used the same principles in ISO 14064-3 to audit all environmental KPIs.  For a copy of the verification statement, see <a href="https://www.linde.com/-/media/linde/merger/documents/sustainable-development/2019-kpi-verification.pdf?la=en&amp;rev=f63bef40f533453fba40ad2e4e6df67c">https://www.linde.com/-/media/linde/merger/documents/sustainable-development/2019-kpi-verification.pdf?la=en&amp;rev=f63bef40f533453fba40ad2e4e6df67c</a>

# W10. Sign off

## W-FI

(W-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.



# W10.1

(W10.1) Provide details for the person that has signed off (approved) your CDP water response.

	Job title	Corresponding job category
Row 1		