

# Praxair, Inc. - Water 2018

## W0. Introduction

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### W0.1

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

Praxair, Inc. (Praxair or the company) was founded in 1907 and became an independent publicly traded company in 1992. Praxair was the first company in the United States to produce oxygen from air using a cryogenic process and continues to be a technological innovator in the industrial gases industry. Praxair is a leading industrial gas company in North and South America and one of the largest worldwide. Praxair's primary products in its industrial gases business are atmospheric gases (oxygen, nitrogen, argon, rare gases) and process gases (carbon dioxide, helium, hydrogen, electronic gases, specialty gases, acetylene). The company also designs, engineers, and builds equipment that produces industrial gases primarily for internal use. The company's surface technologies segment, operated through Praxair Surface Technologies, Inc., supplies wear-resistant and high-temperature corrosion-resistant metallic and ceramic coatings and powders. Praxair's sales were \$11,437 million, \$10,534 million, and \$10,776 million for 2017, 2016, and 2015, respectively.

Praxair serves a diverse group of industries including healthcare, petroleum refining, manufacturing, food, beverage carbonation, fiber-optics, steel making, aerospace, chemicals and water treatment. In 2017, 95% of sales were generated in four geographic segments (North America, Europe, South America and Asia) primarily from the sale of industrial gases, with the balance generated from the surface technologies segment. Praxair provides a competitive advantage to its customers by continuously developing new products and applications, which allow them to improve their productivity, energy efficiency and environmental performance.

### W-CH0.1a

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

- Bulk inorganic chemicals
- Specialty inorganic chemicals

### W0.2

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**(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 2017	December 31 2017

### W0.3

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

Argentina  
Bahrain  
Belgium  
Bolivia (Plurinational State of)  
Brazil  
Canada  
Chile  
China  
Colombia  
Costa Rica  
Denmark  
France  
Germany  
India  
Italy  
Japan  
Mexico  
Norway  
Panama  
Paraguay  
Peru  
Portugal  
Puerto Rico  
Republic of Korea  
Russian Federation  
Spain  
Sweden  
Taiwan (Province of China)  
Thailand  
United Arab Emirates  
United Kingdom of Great Britain and Northern Ireland  
United States of America  
Uruguay  
Venezuela (Bolivarian Republic of)

**W0.4**

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

USD

**W0.5**

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**(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**

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

Yes

**W0.6a**

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

Exclusion	Please explain
We do not report water withdrawal for sites for which domestic sanitary use is the primary water usage, or for sites that have no significant process-related water usage. This means that sites do not report if their water usage is less than 10,000 gallons (38 cubic meters or 38,000 liters) per month or 120,000 gallons (455 cubic meters or 455,000 liters) per year.	Praxair excludes these sites because their water use is insignificant compared to the amount of water withdrawn by our plants. 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	Not important at all	Praxair withdrew about 347,000 megaliters of fresh water in 2017; about 90% of this water is drawn from fresh surface water sources. Having access to clean, high quality fresh water reduces the need for treating the water, which saves energy and reduces waste. Primary use of water is for cooling and boiler systems. Supply Chain: As an industrial gas company, our raw materials consist largely of air and natural gas as a feedstock. 98% 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. 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 for use	Neutral	Not important at all	Praxair used 60,000 megaliters of industrial/recycled water in 2017; this is 15% of the total water withdrawn from all sources (fresh water + non-fresh water sources). Supply Chain: As an industrial gas company, our raw materials consist largely of air and natural gas as a feedstock. 98% 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. Future industrial water dependency is dependent on the amount of this water supplied by customers or available from municipal utilities. Praxair does not foresee any risks associated with its use of water.

**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 Praxair and is managed as part of the company's sustainable productivity activity. Water withdrawal is monitored by Praxair's productivity organization as part of its sustainable productivity efforts and is reported annually into the Sustainable Development Management System (SDMS). In addition, as part of Praxair's SD 2020 targets, water withdrawal at Praxair sites with high water use in areas of water stress (hi-hi sites) is monitored quarterly as part of the SDMS, and those sites must provide and report results quarterly against a Water Management Plan (WMP), which must include monitoring of water withdrawal.
Water withdrawals – volumes from water stressed areas	100%	Water withdrawal is a key performance indicator for Praxair and is managed as part of the company's sustainable productivity activity. In addition, as part of Praxair's SD 2020 targets, water withdrawal at Praxair sites with high water use in areas of water stress (hi-hi sites) is monitored quarterly as part of the SDMS, and those sites must provide and report results quarterly against a Water Management Plan (WMP), which must include monitoring of water withdrawal.
Water withdrawals – volumes by source	100%	Water withdrawal is a key performance indicator for Praxair and is managed as part of the company's sustainable productivity activity. Praxair tracks total volume by source. In addition, as part of Praxair's SD 2020 targets, water withdrawal at Praxair sites with high water use in areas of water stress (hi-hi sites) is monitored quarterly as part of the SDMS, and those sites must provide and report results quarterly against a Water Management Plan (WMP), which must include water monitoring of water withdrawal.
Produced water associated with your metals & mining sector activities - total volumes	<Not Applicable>	<Not Applicable>
Produced water associated with your oil & gas sector activities - total volumes	<Not Applicable>	<Not Applicable>
Water withdrawals quality	1-25	6% of Praxair's incoming water is supplied by a municipal utility who provides quality data on an annual basis. Beyond this, Praxair does not measure incoming water quality except on rare occasions when testing for specific constituents that pertain to discharge permits.
Water discharges – total volumes	76-99	Praxair began tracking water discharge data in 2015. The number of sites reporting to corporate has been steadily increasing. The work process is described in Praxair's WW.SDMS 008 water SOP. Facilities operating under a Water Management Plan (which represent about 40% of Praxair water withdrawal) report on a quarterly basis; all other sites report annually.
Water discharges – volumes by destination	Not relevant	Praxair does not track discharge volumes by destination. Wastewater is discharged either to a surface water body or to a municipal utility. Praxair's wastewater discharges do not have negative impacts on the destination source.
Water discharges – volumes by treatment method	Not monitored	Praxair 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%	Praxair does not track water discharge quality at the corporate level. All Praxair 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	Praxair does not monitor this at the corporate level. Wastewater discharge quality is not considered a material issue according to our sustainable development materiality assessment. Sites with discharge permits do monitor discharge temperatures in accordance with the terms of the permit.
Water consumption – total volume	51-75	Praxair monitors water consumption (started in 2015) based on the DJSI criteria of municipal water supply + surface water supply + well water supply minus the water directly returned to surface water or subsurface. Once-through non-contact cooling tower water is 78% of total water withdrawal for 2017. This water is used for cooling then discharged with little or no treatment to either a surface water body or municipal utility.
Water recycled/reused	100%	Praxair's reporting sites provide information on the source of their water and if they have a cooling tower( which Praxair considers on-site recycling of water). 4.83 % of our reporting sites obtain their cooling water from reclaimed/recycled sources. Of the remaining reporting sites 98% recycle their cooling water, on-site, using a cooling tower to reuse the water approximately 8-10 times before discharging.
The provision of fully-functioning, safely managed WASH services to all workers	100%	Praxair's Human Rights Policy states: "Praxair provides appropriate access to a safe and hygienic work environment, including safe water, sanitation and hygiene for all employees and contractors in premises under Praxair's control." All employees are responsible for complying with this policy.

## 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	407700	Higher	We used approximately 6% more water than in 2016 due to new plants either starting up or in full production.
Total discharges	340200	Higher	Total discharges increased. As we withdraw more water, we discharge more water - water is not embedded in Praxair products. 83% is cooling water that is returned to either a municipal utility or surface water source.
Total consumption	67400	Higher	Net fresh water usage (consumption) increased due to new plants either starting up or in full production.

## W1.2d

**(W1.2d) Provide the proportion of your total withdrawals sourced from water stressed areas.**

	% withdrawn from stressed areas	Comparison with previous reporting year	Identification tool	Please explain
Row 1	37.9	About the same	WBCSD Global Water Tool	Total withdrawals sourced from water stressed areas is a key performance indicator for Praxair and is managed as part of the company's sustainable productivity activity. As part of Praxair's SD 2020 targets, the company uses WBCSD Global Water Tool to assess water stress areas in regions where it operates or plans to site new facilities. In addition, water withdrawal at sites with high water use in areas of water stress (hi-hi sites) is monitored quarterly as part of the SDMS, and those sites must provide and report results quarterly against a Water Management Plan (WMP), which must include water withdrawal volume.

## 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	316200	Higher	
Brackish surface water/seawater	Not relevant	<Not Applicable>	<Not Applicable>	Praxair does not use brackish water.
Groundwater – renewable	Relevant	9300	Higher	
Groundwater – non-renewable	Not relevant	<Not Applicable>	<Not Applicable>	Praxair does not withdraw non-renewable groundwater.
Produced water	Not relevant	<Not Applicable>	<Not Applicable>	Praxair does not use produced water.
Third party sources	Relevant	22200	Lower	Praxair withdrew significantly less water from municipal utilities in 2017 than in 2016. This is mainly due to a change in reporting. Previously, we did not track the source of customer supplied water and assumed half of it came from municipal sources. We now know that was an overestimate.

## W1.2j

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### (W1.2j) What proportion of your total water use do you recycle or reuse?

	% recycled and reused	Comparison with previous reporting year	Please explain
Row 1	76-99%	About the same	Praxair recycles water through cooling towers. The proportion of water recycled remains fairly consistent year to year.

## W-CH1.3

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### (W-CH1.3) Do you calculate water intensity for your activities in the chemical sector?

Yes

## W-CH1.3a

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### (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, Praxair is reporting water intensity for all products under a single row, rather than per product type.

#### Water intensity value

0.96

#### Numerator: water aspect

Total water consumption

#### Denominator: unit of production

Ton

#### Comparison with previous reporting year

About the same

#### Please explain

Fresh water consumption increased 6% in 2017 over 2016. Over the same time period, production also increased 6%. Water intensity improved by 0.06%, which means 2017 results were about the same as 2016.

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## W2. Business impacts

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### W2.1

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#### (W2.1) Has your organization experienced any detrimental water-related impacts?

No

### W2.2

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

Yes, fines, enforcement orders or other penalties but none that are considered as significant

W2.2a

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**(W2.2a) Provide the total number and financial value of all water-related fines.**

**Row 1**

**Total number of fines**

1

**Total value of fines**

17200

**% of total facilities/operations associated**

0.01

**Number of fines compared to previous reporting year**

Higher

**Comment**

The violation is not considered significant as there was no interruption of operations or negative impacts to a water body.

W3. Procedures

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W-CH3.1

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**(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?**

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

Praxair is an industrial gas company whose primary products are air - oxygen, hydrogen, etc. Our raw materials do not contain significant amounts of chemicals that are classified as potential water pollutants.

Water-related impacts are not considered in Praxair's supply chain. As an industrial gas company, our raw materials consist largely of air and natural gas as a feedstock. 98% 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

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**(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 Praxair'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	83% of Praxair's freshwater consumption is once-through cooling water that is returned to surface 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.

**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?**

2 to 5 years

**Type of tools and methods used**

- Tools on the market
- Enterprise Risk Management
- Other

**Tools and methods used**

- WBCSD Global Water Tool
- External consultants
- National-specific tools or standards

**Comment**



## Supply chain

### Coverage

None

### Risk assessment procedure

<Not Applicable>

### Frequency of assessment

<Not Applicable>

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

<Not Applicable>

### Type of tools and methods used

<Not Applicable>

### Tools and methods used

<Not Applicable>

### Comment

As an industrial gas company, our raw materials consist largely of air and natural gas as a feedstock. 98% of our raw materials by weight are from renewable sources (that are not water). Therefore, we do not consider water to be a significant issue in our supply chain and do not include suppliers in the water risk assessment.

## Other stages of the value chain

### Coverage

None

### Risk assessment procedure

<Not Applicable>

### Frequency of assessment

<Not Applicable>

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

<Not Applicable>

### Type of tools and methods used

<Not Applicable>

### Tools and methods used

<Not Applicable>

### Comment

W3.3b

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**(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 make our products. Therefore, water availability is relevant to our operations. Tool: Praxair uses the WBCSD Global Water Tool, which provides information on water availability (current and projected) at each location.
Water quality at a basin/catchment level	Relevant, sometimes included	Water quality is considered in locations where Praxair has a regulatory compliance obligation to meet wastewater discharge pollutant limits. In these locations, the quality of incoming water is only sometimes monitored, but outgoing discharges are monitored according to permit requirements. Tool: 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 water issues are a concern to the local community. In these cases, we engage with key stakeholders and consider these concerns, as they may impact our license to operate.
Implications of water on your key commodities/raw materials	Not relevant, explanation provided	Praxair'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	Praxair 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. Praxair uses a third-party service to review the environmental regulatory requirements for sites globally. Tool: Praxair has a monthly subscription service that provides updates on current and future regulatory developments.
Status of ecosystems and habitats	Relevant, always included	Praxair 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. Only one site has been identified to be near an IUCN Red list species - the Sao Francisco sparrow, which is categorized as "near threatened." Restoring habitats is considered to be the best strategy to allow the sparrow to return to previous levels, and Praxair is actively engaged in this undertaking. Praxair 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. Tool: Praxair uses the WBCSD Global Water Tool, which provides a watershed report.
Access to fully-functioning, safely managed WASH services for all employees	Relevant, always included	Praxair's human rights policy requires Praxair to provide appropriate access to a safe and hygienic work environment, including safe water, sanitation and hygiene for all employees and contractors in premises under Praxair's control. Tool: Access to WASH services is identified as a human right and therefore automatically included in Praxair's enterprise risk assessment.
Other contextual issues, please specify	Please select	

**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	Praxair 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. For example, Praxair is at the forefront of vacuum pressure swing adsorption (VPSA) research, developing new technologies to better meet the changing needs of customers. In China, Praxair recently started up 2 VPSAs and signed a long-term contract with a water recycling plant to build, own and operate a VPSA system for water treatment processes. These systems help decolor and disinfect water, helping mitigate water shortages.
Employees	Relevant, always included	We strive to continually improve our water performance through employee training and awareness. Employees are incentivized to help Praxair meet our 2020 sustainable development targets, which include saving \$500 million from sustainable productivity (cumulative, 2016-2020). Sustainable productivity measures financial and environmental savings in Praxair’s environmental KPI areas, including water management.
Investors	Relevant, always included	Water is considered in Praxair’s enterprise-wide annual risk assessment process. However, water has not been identified as a business risk in our annual 10-K filing.
Local communities	Relevant, always included	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 2017, Praxair enabled the delivery of safe drinking water to 230 million people.
NGOs	Not relevant, explanation provided	We have not partnered with an NGO in the preparation of our water risk assessment. We will consider a partnership in the future if the risk assessment process identifies water-related risks that can be best managed by partnering with an NGO.
Other water users at a basin/catchment level	Not relevant, explanation provided	Praxair 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	Praxair considers current and future regulatory developments in regions where we operate and in areas we consider for siting new facilities.
River basin management authorities	Not relevant, explanation provided	Praxair does not consider the needs of river basin management authorities relevant in our water risk assessment. We will consider engaging with river basin management authorities in the future if the risk assessment process identifies water-related risks that can be best managed by this engagement.
Statutory special interest groups at a local level	Not relevant, explanation provided	Praxair does not consider 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	Not relevant, explanation provided	Praxair does not consider water needs of suppliers to be relevant. As an industrial gas company, our raw materials consist largely of air and natural gas as a feedstock. 98% 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, now or in the future.
Water utilities at a local level	Relevant, always included	Praxair considers the needs of water utilities - both those supplying water to our sites, and those to whom we provide wastewater treatment products and services. Engagement with our water treatment suppliers has yielded more than a 20 percent increase in cycles since 2006 and water savings of \$1.9 million from monitoring and optimizing cooling tower cycles along with treatment.
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.**

At least annually, the full Board discusses the key enterprise risks identified by management, management accountability for managing or mitigating each risk, the steps being taken to manage each risk, and which Board Committees will oversee each risk area on an ongoing basis. Each Committee's calendar of recurring meeting agenda topics addresses risk areas pertinent to the Committee's subject-matter responsibilities. These areas include a regular review of the Company's sustainability program and current and emerging risks and issues related to sustainability and the environment (Technology, Safety & Sustainability Committee). Other risk areas are regularly reviewed by the full Board, including safety and environmental risk (covered at each Board meeting). Water risks are evaluated as part of environmental risk/sustainability. In addition, a sustainable development materiality assessment is conducted to assess the non-financial priority of factors expected to have a significant impact, positive or negative, on Praxair's growth drivers over the next 5 years. Six sustainable development priority factors have been identified, including sustainable productivity (of which water management is a component).

The tools identified in W3.3a are used annually. We use an enterprise risk management process to identify all substantive business risks and report these in our Annual Report in Item 1A Risks. We also use the WBCSD Global Water Tool to assess current and future water risk at each site and monthly subscription services to monitor regulatory developments related to water availability and quality (this must be monitored frequently as regulations are being considered constantly in different jurisdictions). We consult with insurance providers at least annually who use tools to assess risks related to company assets. These tools help us better understand local circumstances.

## W4. Risks and opportunities

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### W4.1

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

No

### W4.1a

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

A wide range of factors that could materially affect the company's future operations and financial performance are identified in Praxair's 2017 Annual Report (Item 1A Risks). Risks and opportunities are evaluated based on their potential financial implications up to the highest consequence, i.e., loss of life, as well as the probability of occurrence, to establish priority concerns. An example of a substantive impact would be replacing a single large Praxair facility, which could be more than \$200 million. Substantive impacts are assessed on direct operations. Praxair's risk assessment process has not identified present or future water risks that could generate such a substantive change in our business.

Water management has been identified by Praxair's Sustainable Development Materiality Assessment as a component of two priority factors and resulting 2020 SD targets. The inclusion of water management in these targets does not imply that water risk will have a substantive impact on financial results. Rather, Praxair acknowledges there are water issues in many parts of the world, and we manage water just as we manage many other issues not identified as a risk in our Annual Report.

### W4.2b

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**(W4.2b) Why does your organization not consider itself exposed to water risks in its direct operations with the potential to have a substantive financial or strategic impact?**

	Primary reason	Please explain
Row 1	Risks exist, but no substantive impact anticipated	Water risk has not been identified in Praxair's enterprise risk management process. Potential financial implications and probability of occurrence for water risks have not met the threshold of a priority concern. However, Praxair acknowledges that water has become a global concern, on par with climate change. While water has not been identified as a risk in our Annual Report, we have included water issues as part of two priority factors in our sustainable development materiality assessment. Even though we are not currently exposed to risks, we recognize the importance of this critical resource.

W4.2c

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**(W4.2c) Why does your organization not consider itself exposed to water risks in its value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact?**

	Primary reason	Please explain
Row 1	Risks exist, but no substantive impact anticipated	Praxair does not currently consider the company to be exposed to water risks in our value chain. Water availability has not been an issue at our operating sites, nor have our suppliers experienced substantive impacts due to water issues. Energy is the single largest cost item in the production and distribution of industrial gases. The supply of energy has not been a significant issue in the geographic areas where Praxair does business. Raw materials (such as for the production of hydrogen and specialty gases) are purchased from suppliers. Praxair has contract or commitments for, or readily available sources of, most of these raw materials. Praxair, therefore, does not currently consider the company to be exposed to water risks in our supply chain.

W4.3

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**(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

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

**Type of opportunity**

Products and services

**Primary water-related opportunity**

Sales of new products/services

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

Praxair's water technology offerings are supported by a business development group who is actively investing in innovation and business development. Praxair has identified the need for substantial water infrastructure development. Our sustainability portfolio – applications that bring environmental and social benefits – was 58% of Praxair's 2017 sales.

**Estimated timeframe for realization**

1 to 3 years

**Magnitude of potential financial impact**

Medium

**Potential financial impact**

10000000

**Explanation of financial impact**

The global water and wastewater network market is expected to grow at a compound annual growth rate of 9.6% through 2020. Industry experts expect that the demand for water treatment products in China alone will grow 10.3 percent annually to \$7.5 billion. Wastewater is an \$80 million end market for Praxair and is growing at more than 10% per year. This represented a market opportunity of about \$10 million in 2017.

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**W6. Governance**

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**W6.1**

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

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

**W6.1a**

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**(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 Company water targets and goals Commitments beyond regulatory compliance Commitment to stakeholder awareness and education Commitment to water stewardship and/or collective action Acknowledgement of the human right to water and sanitation	Water issues within Praxair are managed under the company's Global Safety, Health and Environmental (SH and E) Policy, Sustainable Development and Climate Change Position Statement, and Human Rights Policy, all available publicly at <a href="http://www.praxair.com/our-company/corporate-responsibility/policies-and-position-statements">www.praxair.com/our-company/corporate-responsibility/policies-and-position-statements</a> . These policies and position statements apply to all of Praxair. The SD Position Statement directs Praxair to establish and meet targets to address priority concerns. Water has been identified as part of Praxair's sustainable productivity activity, and a target has been established to develop water management plans at sites in areas of high water stress. Praxair has also identified water treatment as an opportunity to create shared value and has a target to enable the delivery of safe drinking water to 250 million people through the use of our applications. Praxair's SH and E Policy contains a commitment to promoting openness with stakeholders. Praxair Global Safety, Health & Environmental Policy _ Praxair, Inc_.pdf Praxair Sustainable Development & Climate Change Position Statement _ Praxair, Inc_.pdf Praxair Human Rights Policy _ Praxair, Inc_.pdf

**W6.2**

**(W6.2) Is there board level oversight of water-related issues within your organization?**

Yes

**W6.2a**

**(W6.2a) Identify the position(s) of the individual(s) on the board with responsibility for water-related issues.**

Position of individual	Please explain
Director on board	The Board Committee on Technology, Safety and Sustainability assists the Board in fulfilling its oversight of: (a) technology and research and development; (b) sustainability and environmental matters; and (c) certain enterprise risks ...including natural disasters and plant control systems security. Environmental matters include water risks and opportunities. This Board Committee has expertise in sustainability matters and has ultimate responsibility for Praxair's non-financial sustainable development goals.

**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	Praxair’s SVP briefs the Board, as does Praxair’s Chief Sustainability Officer, on Praxair’s performance against the company’s 2020 sustainable development targets. The Board uses various governance mechanisms to oversee all risks identified as material. While water by itself is not considered a material risk, water-related issues are integral to Praxair 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 costs.

**W6.3**

**(W6.3) Below board level, provide the highest-level management position(s) or committee(s) with responsibility for water-related issues.**

**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**

Annually

**Please explain**

Praxair’s senior vice president is the equivalent of what CDP refers to as a COO. The SVP is the highest ranking executive officer responsible for sustainable development at Praxair. She reports directly to the Board on Praxair’s progress against the company’s 2020 sustainable development targets, two of which are related to water. The SVP is also a member of the executive leadership sustainability steering committee, which provides internal oversight of sustainable development. The committee meets twice per year and reviews performance to date against the 2020 targets, and reviews and approves priorities, plans and targets for the coming period.

**W-FB6.4/W-CH6.4/W-EU6.4/W-OG6.4/W-MM6.4**



**(W-FB6.4/W-CH6.4/W-EU6.4/W-OG6.4/W-MM6.4) Do you provide incentives to C-suite employees or board members for the management of water-related issues?**

Yes

**W-FB6.4a/W-CH6.4a/W-EU6.4a/W-OG6.4a/W-MM6.4a**

**(W-FB6.4a/W-CH6.4a/W-EU6.4a/W-OG6.4a/W-MM6.4a) What incentives are provided to C-suite employees or board members for the management of water-related issues?**

	Who is entitled to benefit from these incentives?	Indicator for incentivized performance	Please explain
Monetary reward	Corporate executive team Chief Operating Officer (COO) Chief Sustainability Officer (CSO)	Reduction of water withdrawals Other, please specify (achievement of SD goal on water mgt plan)	Achievement of Praxair's 2020 targets and reduction of water withdrawal are considered part of Praxair's non-financial goals. In 2017, the Board's Compensation Committee determined that the company's performance with respect to the non-financial goals was favorable and awarded a positive 30% adjustment. Reduction of water withdrawal is part of Praxair's sustainable productivity activity and is also part of the 2020 goal to develop water management plans at sites in areas of high water stress. The Board Compensation Committee considers progress against this target annually in determining a positive adjustment.
Recognition (non-monetary)	Other, please specify (President of Praxair Europe)	Effluent quality improvements	Praxair Spain and Portugal received Praxair's 2017 Innovation Award for outstanding achievement with Bionitrox smart control. The award was for providing a solution to customers that limits the inorganic nitrogen content of water discharges to rivers. Details for chosen indicator: This recognition relates to effluent quality improvements. Customers in Europe need to comply with regulations that limit the inorganic nitrogen content of water discharges in order to prevent disease to fish and wildlife. Rationale for the recognition: Praxair's innovation award is competed across the global enterprise. Only best in class innovations are eligible for the award and must meet a range of criteria. Threshold of success: The recognition is based on achieving a practical solution that improves environmental performance for Praxair customers.
Other non-monetary reward	No one is entitled to these incentives	<Not Applicable>	

**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

**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 integrated?	Long-term time horizon (years)	Please explain
Long-term business objectives	Yes, water-related issues are integrated	5-10	Praxair 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 Praxair's growth strategy, particularly in emerging markets. Praxair's evaluation focuses on water availability and quality. Additionally, targets were developed for 2016-2020 to drive water efficiency, particularly to address the potential risk of water scarcity in water stressed regions, and to increase opportunities related to Praxair'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 Praxair's sustainable development portfolio, and Praxair 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).
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	5-10	Praxair 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 Praxair's growth strategy, particularly in emerging markets. Praxair's evaluation focuses on water availability and quality. Additionally, targets were developed for 2016-2020 to drive water efficiency, particularly to address the potential risk of water scarcity in water stressed regions, and to increase opportunities related to Praxair'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 Praxair's sustainable development portfolio, and Praxair 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	No, water-related issues were reviewed but not considered as strategically relevant/significant	21-30	Praxair 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. These sites are built to last for 30 years or longer and elements such as water availability are projected for the life of the plant. 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. Siting new plants is a key element of Praxair's growth strategy, particularly in emerging markets. Praxair's evaluation focuses on water availability and quality. Additionally, targets were developed for 2016-2020 to drive water efficiency, particularly to address the potential risk of water scarcity in water stressed regions, and to increase opportunities related to Praxair'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 Praxair's sustainable development portfolio, and Praxair 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).

**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?**

	Water-related CAPEX (+/- % change)	Anticipated forward trend for CAPEX (+/- % change)	Water-related OPEX (+/- % change)	Anticipated forward trend for OPEX (+/- % change)	Please explain
Row 1					Praxair 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	

**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 Praxair's annual risk assessment (see the 2017 Annual Report, Item 1A Risks). Praxair does not place an internal value on water because the company has not identified any current or future substantive risks to availability. At the same time, Praxair does recognize the importance of water as a global issue and manages water as part of sustainable productivity.

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	Targets are monitored at the corporate level Goals are monitored at the corporate level	Praxair sets 5-year sustainable development targets. The current set of targets run 2016-2020. Targets were chosen to align with priority factor. While water was not identified as a priority, water-related issues are included in targets for Sustainable Productivity and Product Stewardship. Praxair's sustainable development materiality assessment defined product stewardship as a priority factor. Praxair set a 5-year target to enable access to safe drinking water for 250 million people through the use of Praxair applications. In 2017, the result was 230 million people. Sustainable Productivity is also a priority factor. Praxair measures the environmental and cost savings from projects. This includes water savings from projects at our facilities that reduce water use. The 2020 target is to establish water management plans at 58 sites located in areas of water stress. The plans will direct these sites to reduce water use and set site-specific reduction targets. Praxair's business unit in South America has a set a business unit-specific water reduction target (reduce water use 1% by 2020).

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**

Other, please specify (Water use efficiency)

**Level**

Company-wide

**Primary motivation**

Water stewardship

**Description of target**

Implement water management plans at 100% of high water use sites in areas of water stress. High stress means baseline water stress according to the WBCSD Global Water Tool is "medium to high," "high," or "extremely high." A total of 58 sites are currently covered by this target.

**Quantitative metric**

Other, please specify (# of sites with water management plans)

**Baseline year**

2016

**Start year**

2016

**Target year**

2020

**% achieved**

21

**Please explain**

Praxair has begun the process of developing water management plans for various sites. So far, 12 of 58 sites have plans developed. In the first two years of this target, we focused on putting reporting systems in place, investigate and identify opportunities for improving water efficiency across our operations, making technology investments, and increasing the frequency of reporting from annual to quarterly. In South America, 12 sites covered by this target have established water management plans with a target to reduce total water use by 1% by 2020.

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**W8.1b**

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**(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**

Shared value

**Description of goal**

Enable the delivery of safe drinking water to 250 million people (cumulatively, 2016-2020), through the use of Praxair products and applications.

**Baseline year**

2016

**Start year**

2016

**End year**

2020

**Progress**

In 2017, Praxair enabled 230 million people to have access to safe drinking water through the use of Praxair applications and technology.

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**W9. Linkages and trade-offs**

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**W9.1**

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**(W9.1) Has your organization identified any linkages or tradeoffs between water and other environmental issues in its direct operations and/or other parts of its value chain?**

Yes

**W9.1a**

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**(W9.1a) Describe the linkages or tradeoffs and the related management policy or action.**

**Linkage or tradeoff**

Linkage

**Type of linkage/tradeoff**

Decreased wastewater treatment

**Description of linkage/tradeoff**

Linkage to chemical usage: Praxair uses water cooled-based heat exchangers to remove excess heat that is generated by mechanical systems. Additionally, water lost to evaporation in cooling towers needs to be replenished by makeup water. Reducing makeup water usage also reduces chemical treatment needs and is typically achieved by increasing cooling tower cycles of concentration. Other linkage and tradeoff: 1) Linkage with Increased Energy efficiency, Decreased energy use and decreased GHG Emissions: Cooling water systems are an integral part of Praxair production operations and are primarily used to remove heat of compression from our process streams. Cooling systems and heat exchange equipment are energy and water-consuming assets, so our focus on energy efficiency improvement projects leads to benefits in reducing both energy and water use.

**Policy or action**

Praxair seeks to maximize energy and water efficiency at all sites. The linkages described above show that some projects have multiple benefits - they reduce water use while also reducing energy and GHG emissions. Praxair continues to pursue projects that address multiple environmental impacts. These linkages are managed through a tableau dashboard developed to monitor sites using large amounts of water that are located in areas of high water stress. The dashboard evaluates the linkage between efforts to improve energy efficiency and reduce water use.

**W10. Verification**

**W10.1**

**(W10.1) Do you verify any other water information reported in your CDP disclosure (not already covered by W5.1d)?**

Yes

**W10.1a**

**(W10.1a) 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, total net consumption	Other, please specify (ISO 14064-3)	Verification protocols for specific to water do not exist (like they do for GHGs). Praxair'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="http://www.praxair.com/-/media/documents/reports-papers-case-studies-and-presentations/our-company/sustainability/praxair-2018-assurance-letter.pdf?la=en">http://www.praxair.com/-/media/documents/reports-papers-case-studies-and-presentations/our-company/sustainability/praxair-2018-assurance-letter.pdf?la=en</a>

**W11. 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.**

## W11.1

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**(W11.1) Provide details for the person that has signed off (approved) your CDP water response.**

	Job title	Corresponding job category
Row 1	VP of Sustainable Development and Chief Sustainability Officer	Chief Sustainability Officer (CSO)

## W11.2

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**(W11.2) Please indicate whether your organization agrees for CDP to transfer your publicly disclosed data on your impact and risk response strategies to the CEO Water Mandate's Water Action Hub [applies only to W2.1a (response to impacts), W4.2 and W4.2a (response to risks)].**

No

## SW. Supply chain module

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### SW0.1

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**(SW0.1) What is your organization's annual revenue for the reporting period?**

	Annual revenue
Row 1	11437000000

### SW0.2

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**(SW0.2) Do you have an ISIN for your organization that you are willing to share with CDP?**

Yes

### SW0.2a

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**(SW0.2a) Please share your ISIN in the table below.**

	ISIN country code	ISIN numeric identifier (including single check digit)
Row 1	US	74005P1049

### SW1.1

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**(SW1.1) Have you identified if any of your facilities reported in W5.1 could have an impact on a requesting CDP supply chain member?**

Please select

### SW1.2

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**(SW1.2) Are you able to provide geolocation data for your site facilities not already reported in W5.1?**

Please select

**SW2.1**

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**(SW2.1) Please propose any mutually beneficial water-related projects you could collaborate on with specific CDP supply chain members.**

**SW2.2**

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**(SW2.2) Have any water projects been implemented due to CDP supply chain member engagement?**

No

**SW3.1**

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**(SW3.1) Provide any available water intensity values for your organization's products or services across its operations.**

**Product name**

**Water intensity value**

**Numerator: Water aspect**

Please select

**Denominator: Unit of production**

**Comment**

Praxair has a total of 58 sites that are implementing water management plans. The breakdown of these sites are 14 in our U.S. Industrial Gas business, 1 in Canada, 11 in Asia, 10 in Europe, 4 in Mexico, 11 in South America, and 7 HyCO sites (6 in the U.S and 1 in Peru). 51 of these sites were determined to have high water use in areas of high water stress as defined by the World Business Council on Sustainable Development Global Water Tool. Praxair determined high stress to be anywhere from "medium to high" all the way to "extremely high". Praxair South America volunteered 7 additional sites to bring the total to 58. Praxair South America also adopted a target to reduce 1% absolute water volume by 2020. 8 sites have achieved this target at the end of 2017, achieving an overall reduction of more than 380,000 m3 - an 11% reduction. Reference page 22 & 30 of the Praxair 2017 Sustainable Value Report (SVR) - <http://www.praxair.com/our-company/sustainable-development/reporting-center>

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**Submit your response**

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**In which language are you submitting your response?**

English

**Please confirm how your response should be handled by CDP**

	<b>Public or Non-Public Submission</b>	<b>I am submitting to</b>	<b>Are you ready to submit the additional Supply Chain Questions?</b>
I am submitting my response	Non-public	Investors Customers	Yes, submit Supply Chain Questions now

**Please confirm below**

I have read and accept the applicable Terms