



# Sustainable Value Report 2015



#### Photo Captions

On left is Andrew Heidloff, Engineering Manager, and on the right is Joel Rieken, Plant Manager, of the Advanced Materials & Equipment business based in Indianapolis where metal powders are manufactured for additive manufacturing and thermal spray applications.

Dr. Heidloff and Dr. Rieken from Praxair Surface Technologies (PST) are the pioneers behind the technology to produce gas-atomized titanium powders for use in additive manufacturing primarily in the aviation industry. Using their unique, close-coupled design they are able to produce aerospace-grade, manufacturing lot sizes that produce 10x greater yield over historical atomization processes.

They are standing in front of our 4-level titanium atomization operations.

For more about our titanium atomization application, visit [www.praxair.com/additivemanufacturing](http://www.praxair.com/additivemanufacturing)

# TABLE OF CONTENTS

PERFORMANCE 2015 ..... 4

MESSAGE FROM PRAXAIR’S CHIEF EXECUTIVE OFFICER ..... 5

MESSAGE FROM PRAXAIR’S CHIEF SUSTAINABILITY OFFICER ..... 6

ABOUT THIS REPORT ..... 8

ABOUT PRAXAIR ..... 10

GOVERNANCE ..... 14

ENGAGING STAKEHOLDERS ..... 17

DETERMINING PRIORITIES ..... 20

PERFORMANCE DASHBOARD ..... 22

OUTLOOK: SUSTAINABLE DEVELOPMENT 2020 TARGETS ..... 30

DELIVERING SUSTAINABLE VALUE ..... 35







## Forward Looking Statement

This document contains “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. These statements are based on management’s reasonable expectations and assumptions as of the date the statements are made but involve risks and uncertainties. These risks and uncertainties include, without limitation, the performance of stock markets generally; developments in worldwide and national economies and other international events and circumstances; changes in foreign currencies and in interest rates; the cost and availability of electric power, natural gas and other raw materials; the ability to achieve price increases to offset cost increases; catastrophic events including natural disasters, epidemics and acts of war and terrorism; the ability to attract, hire, and retain qualified personnel; the impact of changes in financial accounting standards; the impact of changes in pension plan liabilities; the impact of tax, environmental, healthcare and other legislation and government regulation in jurisdictions in which the company operates; the cost and outcomes of investigations, litigation and regulatory proceedings; continued timely development and market acceptance of new products and applications; the impact of competitive products and pricing; future financial and operating performance of major customers and industries served; the impact of information technology system failures, network disruptions and breaches in data security; and the effectiveness and speed of integrating new acquisitions into the business. These risks and uncertainties may cause actual future results or circumstances to differ materially from the projections or estimates contained in the forward-looking statements. Additionally, financial projections or estimates exclude the impact of special items which the company believes are not indicative of ongoing business performance. The company assumes no obligation to update or provide revisions to any forward-looking statement in response to changing circumstances.

The above listed risks and uncertainties are further described in Item 1A (Risk Factors) in the company’s Form 10-K and 10-Q reports filed with the SEC which should be reviewed carefully. Please consider the company’s forward-looking statements in light of those risks.

# PERFORMANCE 2015

✓ Achieved
+ On Track
- Not Achieved

Priority Factors	KPI Areas	Targets 2009-2015*	Results 2015	
 <b>Safety</b>	Occupational Health & Safety	Outperform the ACC published large member average for Recordable Injury Rate (per 200,000 hours)	0.42	✓
		Outperform the ACC published large member average for Lost Time Injury Frequency Rate (LTIFR), also called Lost Workday Case Rate (LWCR) (per 200,000 hours)	0.04	✓
 <b>Governance, Ethics &amp; Compliance</b>	Governance & Ethics	Maintain global standards of corporate governance, ethics, integrity, accountability and human rights	100% of required employees certified that they read and understood Praxair Standards of Business Integrity	✓
 <b>Energy &amp; Climate Change</b>	Energy & GHG Emissions	Achieve cumulative energy savings of \$500 million, conserve 8MM MWh and avoid 5 MM MT CO <sub>2</sub> e, 2009-2020	Achieved cumulative savings of \$260 million, 1.4 million MWh and 2.1 million MT CO <sub>2</sub> e	+
		ASU Design: 8.5% energy intensity improvement per product produced from new ASU facilities	8.5%	✓
		ASUs: 6% energy and greenhouse gas (GHG) intensity improvement per product sold	4.4% (6.4% excluding Argon sales)	-
		Hydrogen: 2.4% GHG improvement per product produced	3.3%	✓
	Sustainable Transportation	Packaged Gas and Bulk Trucking: 9% improvement in GHGs per product delivered	Packaged Gas: 14.7% Bulk Gas: 11.1%	✓
		• U.S. Bulk Trucking: 3% net reduction in fuel use and GHGs, 2012-15	2.5%	-
		• South America (SAWM) all trucking (employee and contract drivers): improve GHG intensity 1.5% per year per product delivered, 2014-15	2.5% higher	✓
		Reduce vehicle NOx emissions 50% per mile driven	50.5%	✓
 <b>Eco Portfolio</b>	Environmental Innovation	Earn 30% revenue from eco portfolio	33%	✓
		Annually enable at least 2X the GHG to be avoided than was emitted from all Praxair operations	51.5 million MT CO <sub>2</sub> e avoided	✓
		Enable delivery of safe drinking water to millions of consumers, particularly in China	> 125 million people	✓
	Product Stewardship	By 2020, offer 100% chrome-free slurry product alternatives to the market	See Note 4 in Performance Dashboard page 23	+
		By 2017, provide an alternative to cadmium plating	See Note 4 in Performance Dashboard page 23	+
		Comply with the Responsible Care® Global Charter by 2020	Praxair is a signatory of the Global Charter	+
 <b>Sustainable Productivity</b>	Eco Efficiency	Achieve \$500 million in cumulative savings from environmental productivity	\$576 million	✓
	Supplier Sustainability Management	Achieve a cumulative \$10 million in greening the supply chain (2012-15)	\$16 million	✓
 <b>People Development</b>	Diversity	Source and retain top talent, particularly in emerging economies	94.7% of emerging economy leaders are local or regional nationals	✓
	Employee Engagement	Continuously improve employee engagement results in corporate engagement survey	83% employee engagement rate	✓
		Achieve 200 Zero Waste sites	216	✓
	Community Engagement	Achieve a cumulative 1.5 million beneficiaries	1.73 million	✓
		Achieve and maintain a positive net benefit ratio of 10 beneficiaries per employee	12 to 1 ratio	✓
	Stakeholder Engagement	Plant or preserve one million trees with major conservation organizations (2012 - 2016)	900,000	✓

\* All targets are 2009-2015 unless indicated otherwise



# Message from Praxair's Chief Executive Officer\*



*During the company's Innovation Week held at the Praxair Technology Center, Chairman and CEO Steve Angel talks to employees about the many achievements in innovation they have made and their importance to Praxair's future growth.*

## Dear Stakeholder,

Sustainable Development is ingrained in Praxair's culture, and an integral part of our mission of *making our planet more productive*. This year's Sustainable Value Report again illustrates some of the important achievements that are reflected in our financial and operational results and the global impact of our business.

2015 results include:

- Achieving a recordable injury rate that was 7 times better than the OSHA average
- Earning one third of revenue from our eco-portfolio, which consists of innovative applications that bring environmental benefits to our customers
- Enabling our customers or their end users to avoid more than 2 times more GHG emissions than were emitted in all of our operations
- Realizing more than \$100 million in resource efficiency from sustainable productivity, which contributed to our 2015 industry-leading operating margin and return on capital
- Delivering direct benefits to more than 345,000 people around the world through our employee engagement program – that's more than 12 beneficiaries for each Praxair employee

### Commitment to Sustainability

2015 was the first full year in which Praxair's Board of Directors' Technology, Safety & Sustainability Committee operated. The Board created this new committee in late 2014 to assist in oversight of technology,

research & development, and sustainability and environmental matters.

We successfully closed out the second generation of Sustainability Targets (2009-2015) and have implemented our third generation of Sustainable Development Targets (2016-2020). These SD 2020 Targets were accepted and endorsed by the Board's Technology, Safety & Sustainability Committee and support the company's long-term business strategy, setting out relevant and measurable key performance areas that will help drive long-term value creation. The targets include: Safety, Compliance, Product Stewardship, Energy & Climate, Sustainable Productivity and People Development.

### Continued Recognition

Praxair has been selected as a component of the prestigious Dow Jones Sustainability World Index for 13 consecutive years, recognizing the company's long-standing commitment to environmental and social responsibility – the only U.S. chemical company with this distinction.

Praxair was also named to the 2015 CDP S&P 500 Climate Disclosure Leadership Index for the eighth consecutive year, recognizing the company's long-standing commitment to growth through resource productivity and environmental innovation – with a perfect score of 100.

Additionally, Praxair was recognized by Forbes as one of the Best Employers in America in 2016 and named to Corporate Responsibility Magazine's 100 Best Corporate Citizens List for the fourth consecutive year.

### Vision and Values

Our vision to be the best performing industrial gas company in the world means more than just financial performance. It is an ongoing commitment to our core values: safety, integrity, diversity and inclusion, environmental stewardship, community engagement, and customer satisfaction, in addition to being a results-driven high-performance company.

I am proud that these values are shared by our more than 26,000 employees around the world. They continue to knit us together as a company, and create lasting social, environmental and economic value over the long term.

Steve Angel  
Chairman, President and CEO

\* This section responds to GRI G4-1

# Message from Praxair's Chief Sustainability Officer

## Dear Stakeholder,

This report closes out our 2015 targets, and it is a good time to reflect on what has been achieved. Sustainable Development at Praxair is not mandated by law. It is an invitation to our employees to consider how each of us can help deliver Praxair's mission of *making our planet more productive*. In this context, our employees have stepped up to demonstrate the value of our mission.

Our sustainable productivity program invites employees to seek financial savings from environmental resource conservation. From a launch in 2010 when we realized \$32 million in savings, the program has delivered more than \$500 million in cumulative savings and has avoided two million MT CO<sub>2</sub>e and one billion gallons of water. The program is consistent with Praxair's business model of resource productivity, but it is employee energy that has taken this to the next level: these projects engage more employees and source more innovation than regular productivity. It is this culture of sustainable productivity that is being institutionalized and will continue to take Praxair forward.

Culture and human capital drive our Zero Waste program. This started with 11 sites participating in 2011 and grew to more than 300 sites by 2015, representing about half our employees and all of our countries of operation. Zero Waste has avoided more than 500 million pounds of waste and saved Praxair more than \$500,000. But the real story is of an employee population seeking to get to "zero" because it is consistent with their values. Site Safety engineer Yingsheng Zhang at our Shanghai Meishan facility, for example, found a way to recycle a waste catalyst. This saved the business \$8,500; but his real motivation? "Above all, it respected the needs of our community: of our children and later generations."

Culture and human capital also drive innovation. At Praxair, the world is our lab. With over 100 university and industry partnerships and open innovation networks where we actively seek connections with innovators across industries, Praxair has consistently succeeded in leveraging open innovation to bring new technologies to the world. The cover photo of this report tells of Praxair's gas atomization technology, originating from a collaboration with AMES Laboratory, to bring affordable, high-volume 3D printing with titanium powder closer to reality for aerospace and industrial manufacturing.

Employees have also stepped forward to embrace community engagement. By 2015, 384 sites participated in a program that has brought direct benefits to a cumulative 1.73 million people. 86% of employee volunteers report improved employee engagement, and 87% report that it expanded their understanding of their communities. When I visited Korea last year (see photo), Human Resources Manager KyoHee Che said that she had never before experienced the level of positive employee community engagement that she now has in her Praxair family.

Taking action to deliver on our mission has helped strengthen our culture and deepen our engagement in our mission and purpose. This has become part of our culture, part of our intellectual capital and competitive advantage. I salute and thank all our employees and other stakeholders who have helped realize this vision, and look forward to the next steps of our journey together.



Riva Krut, Vice President & Chief Sustainability Officer

Email: [Riva\\_krut@praxair.com](mailto:Riva_krut@praxair.com) or [sustainability@praxair.com](mailto:sustainability@praxair.com)

Tel: 203-837-2337



*Riva Krut visiting Noeul Park outside Seoul, Korea. The Park is a major community recreation area built with leading ecological principles on a vast landfill. 320 Praxair employees, their families, students and community supporters planted 16,500 trees at Noeul Park in three Praxair forests, and have committed to maintain them in coming years.*

# Employee Value Creation

Praxair's mission is *making our planet more productive*. This *Sustainable Value Report* shows how we execute on this mission. We seek to drive financial results and also create sustainable value. In many cases, we seek to create "Net Positive" impacts by putting more back into society, the environment, and the economy than we take out. This image recognizes employee contributions by showing elements of Praxair's 2015 net positive impacts on a per employee basis.

## Net Sustainable Development Value Created Per Praxair Employee

*In 2015, each employee enabled:\**

**1,300 MT**

net CO<sub>2</sub>e to be avoided

**12 PEOPLE**

to benefit from community engagement

**>55 MT**

net SO<sub>2</sub> to be avoided

**>5,000**

people to have access to safe drinking water

\*Calculation method: **Net CO<sub>2</sub>e avoided** was calculated by taking Praxair's gross benefits from GHG (51.5 MM MT CO<sub>2</sub>e), minus its total GHG emissions (20.5MM MT), divided by the number of employees. **Net SO<sub>2</sub> avoided** took the total SO<sub>2</sub> avoided by the use of Praxair hydrogen to make Ultra-Low Sulfur Diesel (1.5 Million MT SO<sub>2</sub>) minus Praxair total 2015 SO<sub>2</sub> emissions (52 MT), divided by the number of employees. Praxair **water treatment applications** provided benefits to more than 125 million people. We subtracted the number of people that would consume the equivalent of all Praxair water consumed (51.9 MM cubic meters) and divided by total employees. **Community engagement net benefits** were calculated from approximately 345,000 people who benefitted from Praxair employee community engagement, divided by total employees.



# ABOUT THIS REPORT\*

## Scope and Context of this Report\*\*

Each year, Praxair's *Sustainable Value Report* (SVR) includes quantitative and qualitative information relating to the previous calendar year. This report covers 2015 and closes out and reports final results for our second generation six-year sustainability targets (2009-2015). It also presents Praxair's third generation five-year sustainable development strategy and Sustainable Development 2020 Targets (SD 2020 Targets). The SVR is supported by an *SVR Annex* that provides source data and additional information based on the [Global Reporting Initiative](#). Praxair's reports uses the same scope in its SVR as is used in its Annual Report. Except where indicated, this Report represents 100 percent of Praxair 2015 revenue. Praxair includes consolidated global information from entities where it is the majority shareholder (more than 50 percent) and certain joint ventures; it excludes data from entities where Praxair has minority interest. There were no significant acquisitions in 2015 that required changes in Praxair's sustainability reporting.

## Relationship to Praxair Financial Reporting

Whereas Praxair's Annual Report reports U.S. GAAP financial information, this SVR reports non-financial information relevant to our stakeholders and is key to driving long-term sustainable results. "Non-financial" is used in this report in the same way it is used by Praxair's Board in its *March 2016 Proxy Statement* page 44. This report also includes information relating to upstream and downstream activities that are relevant business value drivers. Examples are: Scope 3 Greenhouse Gas emissions from contract drivers; measures of environmental benefits for customers of Praxair applications; and social and other benefits to communities from Praxair community engagement activities.

## Reporting Frameworks Applied

This SVR drew on these voluntary reporting frameworks.

1. GRI G4. The Global Reporting Initiative [GRI Guidelines](#) are the most widely used guidelines for corporate sustainability reporting. Praxair has followed the GRI framework since 2010. This Sustainable Value Report, and its Annex, were prepared according to the *GRI G4 Guidelines*, for the first time. Praxair's SVR and SVR Annex were certified by GRI as 'In accordance-Core', see SVR Annex. A GRI G4 Annex is provided in the SVR Annex. Regional sustainability reports for Praxair South America (biennially) and Praxair Central America (annually) have reported against GRI G4 since 2013; these reports are available on [www.praxair.com](http://www.praxair.com).
2. The [Climate Change Reporting Framework \(CCRF\)](#): a set of proposed disclosures about climate change that are made in or are linked to information about financial performance in mainstream financial reports.

[International Integrated Reporting Framework](#) <IR> provides a framework for investors and other stakeholders to gain greater insight into the medium- and long-term sustainability of a company. <IR> proposes that a company should report how it manages all of its six capital flows: financial capital as well as human, intellectual, manufactured, natural, and social and relationship (sometimes referred to collectively as "social capital"), and the connectivity between them. This report denotes reporting in one or several of these capitals with the use of icons; see table.

## The six capitals of *Integrated Reporting*



## Principles for Defining Report Content and Quality\*\*

Consistent with GRI G4 and AA1000 [AS Accountability Principles Standard](#), the following principles defined the content and the quality of data and narrative in this report.

- **Context-driven:** Priorities are developed within the context of business model, long-term global trends and challenges and short-term business risks.
- **Inclusive:** Priorities are defined with reference to key stakeholders: those individuals, groups of individuals or organizations that affect and/or could be affected by Praxair's activities, products or services and associated performance. Praxair defines these in its Vision Statement as "customers, employees, shareholders, suppliers and the communities in which we operate," and gathers these stakeholder views by reviewing documents that consolidate the views of multiple relevant stakeholders and by engaging in a range of internal and external discussions.
- **Material:** Priorities are consistently applied and embedded into the organization, with a process for continuous review and improvement.
- **Responsive:** Performance in priority areas reflects long-term value creation for the company and the planet.
- **Report Quality:** Data is balanced, comparable, accurate, timely, transparent, clear and reliable.
- **Complete:** The sum of the topics and indicators reported reflects significant economic, environmental and social impacts and enables stakeholders to assess the organization's performance. In making this determination, Praxair considers the results of stakeholder engagement processes as well as emerging issues in sustainable development.

\* This section, through page 9, responds to GRI G4-18

\*\* This section responds to GRI G4-23



# ABOUT THIS REPORT\* (continued)

## Content\*

To determine relevant content, Praxair considered multiple relevant external guidance documents, including the following:

1. GRI “[Sustainability Topics for Sectors: What do stakeholders want to know?](#)” metrics for the chemical sector
2. The U.S. Sustainability Accounting Standards Board (SASB) sector standard for [chemical companies reporting](#).

For more information on how external considerations were integrated into Praxair’s determination of priority issues, see the *Priority Factors and Related KPIs and Outlook* sections.

## Data Consolidation and Reporting

Various databases are managed across Praxair to aggregate data; these are separated by function. Safety data, safety and environmental compliance data, and product safety data are collected monthly from the businesses through Safety, Health and Environment (SH&E). Data for Human Resources (HR), Finance, Operations, Global Procurement and Materials Management (GPMM), Productivity, R&D, Sales and the Praxair Global Giving Program are collected by the respective organizations and housed in the corporate information systems network. Environmental data for tracking performance against sustainable development targets is collected into the Sustainable Development Management System (SDMS), which tracks environmental performance against targets, with all businesses reporting monthly. Community engagement activity is tracked with a global survey tool and exported into a spreadsheet for analysis. Sustainable development metrics for the R&D organization are integrated into the R&D database and management system. A GHG Inventory Management Plan (IMP) defines standard operating procedures (SOPs) for GHG measurement and management and is available on the SH&E intranet site and in the SDMS. Praxair uses a licensed global sustainability reporting software program to integrate data reporting for sustainable development.

## Performance Reporting

Most Praxair sustainable development targets run 2009-2015 unless indicated otherwise. This report closes our 2015 target period; see the *Sustainable Development Performance Dashboard* on pages 22-29. Praxair’s new Sustainable Development 2020 Targets, which run from 2016-2020, are issued in the *Outlook* section on page 30.

## Changes, Adjustments & Restatements\*\*

Restatements are made if a previously reported item is corrected.

1. The 2020 target established in 2009. “Achieve cumulative energy savings in excess of \$600 million, 1.8MM MWh and 6 million MT CO<sub>2</sub>e, 2009-2020”, was restated to “Achieve cumulative energy savings in excess of \$500 million, 1.4MM MWh and 5 million MT CO<sub>2</sub>e, 2009-2020.” This reflects the recent fall in energy prices.
2. Praxair restates its water usage for 2014 (56.0 million cubic meters to 56.2 million cubic meters) to correct for under-reporting from three facilities. See *SVR Annex G4 EN8*

## Assurance\*\*\*

1. For the seventh consecutive year, Praxair commissioned an external audit for several key environmental and social data elements. For the first time, and in preparation for its SD 2020 Targets, Praxair also commissioned an external audit of its Sustainable Development Materiality Assessment (SDMA) against AA1000 AS. The external audit letter is provided in this report. The SDMA assurance letter is provided in the *SVR Annex*. Both letters are available on our website: [www.praxair.com](http://www.praxair.com).

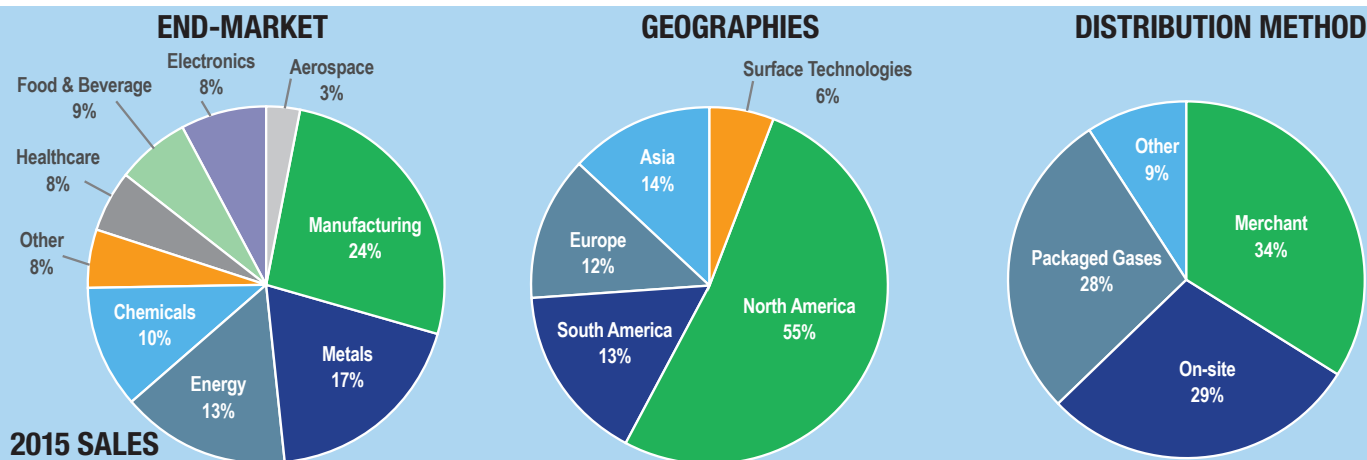
\* This section responds to GRI G4-18

\*\* This section responds to GRI G4-22

\*\*\* This section responds to GRI G4-33



# ABOUT PRAXAIR



## Business Model\*

Praxair is a Fortune 300 company with 2015 sales of \$10,776 million and approximately 26,500 employees. We are a leading industrial gas company in North and South America and one of the largest worldwide, doing business with more than one million customers in more than 50 countries. The company produces, sells and distributes atmospheric, process and specialty gases, and high-performance surface coatings. Praxair products, services and technologies are *making our planet more productive* by bringing efficiency and environmental benefits to a wide variety of industries, including aerospace, chemicals, food and beverage, electronics, energy, healthcare, manufacturing, primary metals and many others.

Praxair's principal raw material is air, a renewable natural resource. Energy – electricity, natural gas, gasoline and diesel – is the single largest cost item in the production and distribution of industrial gases. For carbon dioxide, carbon monoxide, helium, hydrogen, specialty gases and surface technologies, raw materials are largely purchased from outside sources. Where feasible, Praxair sources several of these gases, including carbon dioxide, hydrogen and calcium carbide, as chemical or industrial byproducts.

Praxair manufactures and distributes nearly all of its products and manages its customer relationships on a regional basis. Our industrial gases are distributed to various end-markets within a regional segment through one of three basic distribution methods: on-site or tonnage; merchant or bulk; and packaged or cylinder gases. The distribution methods are generally integrated in order to best meet the customer's needs and very few of our products can be economically transported outside of a region. Therefore, the distribution economics are specific to the various geographies in which we operate and are consistent with how management assesses performance. Praxair manages the potential environmental and safety aspects of operations across the life cycle of its applications, from sourcing and development to distribution and customer use.

This business model is depicted on the facing page. Principal products are shown in the columns. The rows describe the business in terms of a life cycle flow from natural capital inputs (raw material and natural resource) that are feedstock to Praxair processes, to the product outputs and their applications or outcomes, to the sustainable development impacts, including the environmental, social and economic value created or depleted. See also *Delivering Sustainable Value*.

\* This section responds to GRI G4-8

\*\* This section responds to GRI G4-56

\*\*\* This section responds to GRI G4-14, G4-15 and G4-56

## Mission, Values, Strategy\*\*

Praxair's mission is *making our planet more productive*. We develop technology, products and services that help to sustain and protect our planet. We are committed to improving our customers' economic and environmental performance around the globe, and we are committed to improving the communities where we live and work. This mission is also the company's definition of sustainable development, and the elements of our values, strategy and growth drivers are the bedrock of Praxair's sustainable development strategy and foundation for its sustainable development priorities.

Praxair's Values, Strategy and Growth Drivers and Strategic Imperatives 2015-2018+ are provided in the graphics on page 13.

## Praxair Policies\*\*\*

Praxair's policies and position statements are provided at <http://www.praxair.com>. Praxair's "Business Integrity and Ethics Policy" and "Compliance with Laws Policy" establish the "tone at the top" and define what is expected of Praxair employees at all levels. Praxair's *Standards of Business Integrity (SBI)* makes it clear that Praxair is committed to consistent, global high standards of ethical and responsible conduct in compliance with applicable laws in all the countries where it does business. In addition, a range of corporate policies cover issues from Product Stewardship to Human Rights; these are maintained and updated as needed.

Praxair supports the Precautionary Principle as defined in Principle 15 of the Rio Declaration: "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation." Praxair uses a well-defined, science-based process for assessing and managing risks in the face of uncertainty.

Decision-making requires a systematic evaluation of risks and benefits. Praxair's product safety program is supported by its commitment to Responsible Care®. Risk assessment includes hazard identification, characterization, and exposure assessment. Risk management encompasses the identification, selection and implementation of alternative actions for addressing risk through the control of identified hazard(s) and/or exposure. Praxair is a signatory of the new [Responsible Care® Global Charter](http://www.responsiblecare.org) and its Six Elements. We introduced a new target in 2015 to conform to all of the global charter's elements by 2020. More information is available on the Product Stewardship section of our website: <http://www.praxair.com>.

# Business Model

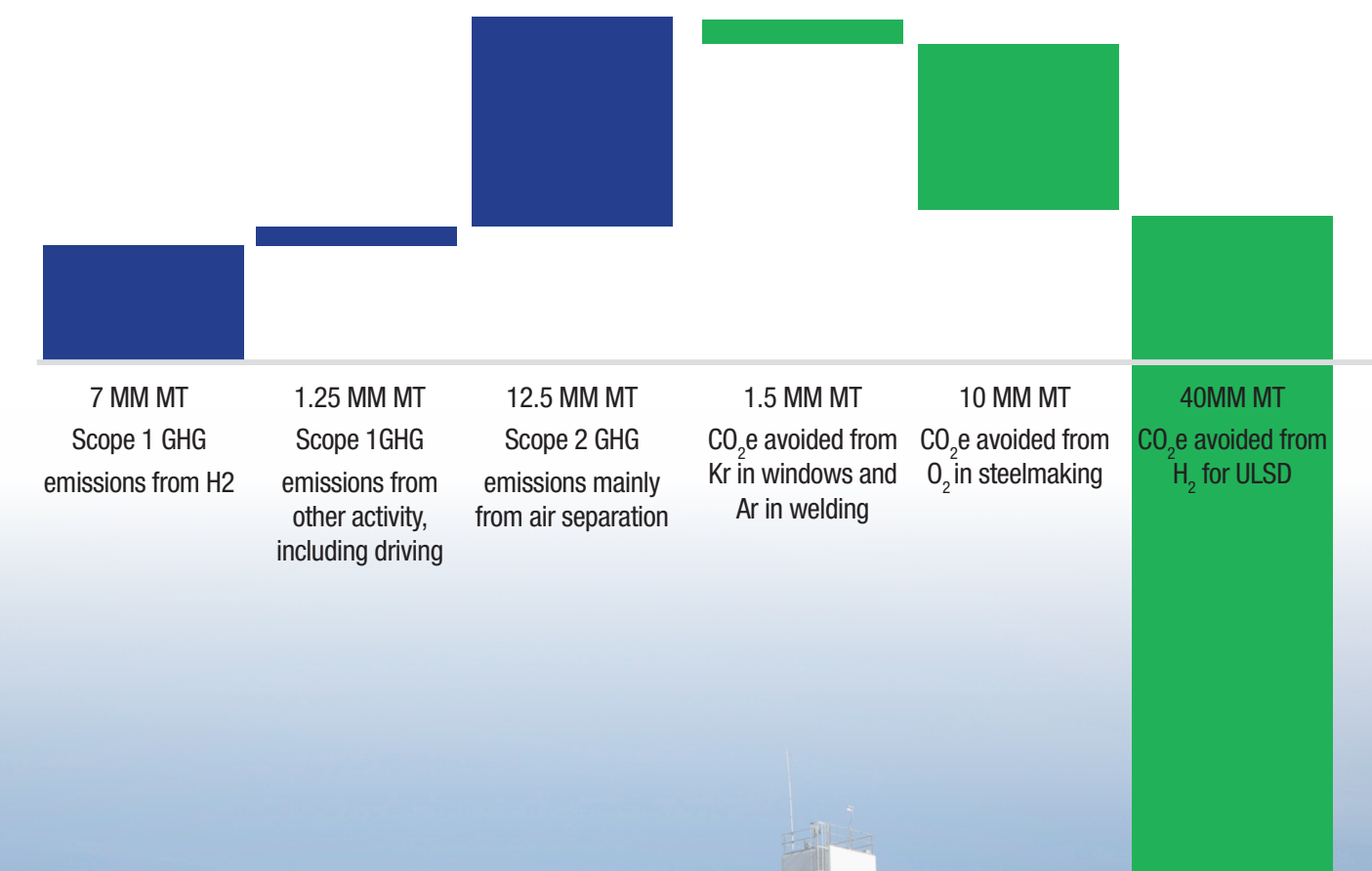
INPUTS	Product Stewardship	Managing environmental and safety aspects through the product life cycle from raw materials sourcing and supplier engagement to operations, distribution and customer use.						
	Raw Materials	Air and Electricity			Natural gas or industry byproducts, water (steam)	Industry byproduct, natural wells	Byproduct from natural gas processing	Rare Earth Minerals
ACTIVITIES	PRODUCTS	O <sub>2</sub>	N <sub>2</sub>	Ar	H <sub>2</sub>	CO <sub>2</sub>	He	Materials
	BUSINESS OPERATIONS	ATMOSPHERIC GASES			PROCESS & SPEC GASES			COATINGS
OUTPUTS	2015 END MARKET (% revenue)	EXAMPLES OF SIGNIFICANT PRODUCT APPLICATIONS						
	Manufacturing & Metals (41%)	Steel making, glass, non-ferrous metal processing	Inerting, metals processing	Welding, stainless steel production, window insulation	Heat Treatment of Stainless Steel		Welding	
	Energy (13%)	Refinery processing			Diesel & gasoline reformulation	Replaces acids in industrial processes	Leak detection	Coatings
	Chemicals (10%)	Water treatment	Inerting, blanketing, purging		Manufacture of ammonia, methanol	Synthesis & separation	Leak detection	
	Food & Beverage (9%)	Modified Atmosphere Packaging (MAP)	Freezing, chilling, preservation			Cryogenic freezing, beverage carbonation		
	Healthcare (8%)	Respiration	Cryopreservation				Medical gas, MRIs	
	Electronics (8%)		Inerting			Cleaning & inerting	Inerting	Electronics processing
	Aerospace (3%)	Fuel savings	Autoclave	Welding	Fuel			Coatings
	Other (9%)	Water treatment				Water treatment	Laboratories	Coatings
OUTCOMES	Examples of environmental, economic, and social benefits	Productivity, product quality						
		Human health and safety						
		Fewer emissions of NOx, SO2, VOCs						
		More energy efficient industrial production		Fewer GHG emissions More energy efficiency	Fewer Black Carbon and GHG emissions	Cleaner manufacturing	Fewer environmental releases	Improved product durability Essential for PVs
		Cleaner drinking water Medical O2	Freezing + preserving food, medical samples		Better air quality	Water treatment & desalination	MRIs, LCDs, diving gases, airbags	Chrome/ cadmium replacement
	IMPACT	▶ SUSTAINABLE DEVELOPMENT VALUE CREATION (see pages 35-41)						



# Praxair Applications Enable 2X Carbon Productivity

Energy is the single largest cost item in the production and distribution of industrial gases. Most of Praxair’s energy requirements are in the form of electricity, natural gas and diesel fuel for transportation. The use of Praxair gases often brings environmental benefits, including enabling GHG emissions to be avoided by Praxair’s customers or their end-users.

Praxair’s GHG overall carbon productivity is illustrated in this chart. Sources of direct GHG emissions (Scope 1, principally from H2 production, also other sources including truck driving) and indirect GHG emissions (Scope 2, principally from air separation) are provided in blue. These total 20.75 MM MT CO2e. The green bars represent GHG avoided directly through energy efficiency, and indirectly by Praxair customers or their end-users. Praxair measures and validates customer carbon productivity for selected applications, including: argon for welding and krypton for window insulation; oxygen for steelmaking; and hydrogen used by oil refiners to make ultra-low sulfur diesel (ULSD) in trucks fitted with a diesel particulate filter. In 2015, these four applications, which contributed 11 percent revenue, enabled 51.5 million MT CO2e to be avoided, or a 30.75 million MT net benefit. Note that values are rounded to the nearest 250,000. Praxair applications therefore can be said to enable more than 2X more GHG emissions to be avoided than were emitted from all its operations, or a 2X carbon productivity. Also see the Performance Dashboard Notes in Praxair’s 2015 Sustainable Value Report and EN27.





## OUR CORE VALUES\*

### ■ Safety First

A passionate commitment to safety underpins all of our activities. The safety of our products and services, safety at work, safety on the road and safety at home are the highest priorities for our employees, contractors, families and customers.

### ■ High Integrity

We continually reinforce the high global standards upon which our reputation has been built, including honesty, ethical conduct and full compliance with the law.

### ■ Results-Driven

With personal accountability, collaboration and innovation, we focus on consistently delivering value to our shareholders and other stakeholders through flawless execution, operational discipline and continuous improvement.

### ■ Customer Satisfaction

We provide products, applications technology and services that represent the highest standards of quality and reliability. We work closely with our customers to overcome their challenges and achieve their goals.

### ■ The Right People

We place a high value on attracting and developing talented people from diverse backgrounds who use their talent to make an impact in the world and make our company successful.

### ■ Environmental and Social Responsibility

We help customers worldwide improve their environmental performance and carbon footprint, while minimizing our own environmental resource intensity and maximizing our social and community contributions.

## OUR STRATEGY

### ■ Core Business

Our core business is industrial gases and a sale of gas business model.

### ■ Increase Density

We concentrate our assets to optimize our presence, maximize cost efficiencies and drive economies of scale.

### ■ Target Geographies

We invest in areas of the world where we have secured or will establish significant market presence.

### ■ Integrated Supply

We build out integrated supply systems to serve the full array of customers.

## OUR GROWTH DRIVERS

### ■ Energy

We are the go-to provider of reliable, cost-effective supply to the energy sector.

### ■ Environment

We help customers reduce their environmental footprint while improving energy efficiency and product quality.

### ■ Emerging Economics

We play a leading role in modernizing industrial infrastructures in high-growth countries.

### ■ Resilient End-Markets

Focus on healthcare, food & beverage, aerospace, specialty gases.

## STRATEGIC IMPERATIVES

Grow profitability independent of macroeconomic environment



\* This section responds to GRI G4-56

# GOVERNANCE\*

A comprehensive review of Praxair's corporate governance framework is provided in its March 2016 Proxy Statement, and on our website: [www.praxair.com](http://www.praxair.com).

## Praxair's Board of Directors

Praxair's Board of Directors consists of 11 Board members, one executive director (chairman and CEO) and 10 independent directors. In order to enhance the Board's independence and oversight of management, the independent directors elect a lead director from among their group. The independent directors elected Robert Wood as lead director, effective January 1, 2013. Mr. Wood presides as a lead director over meetings of the non-management directors and performs other duties, including coordinating a performance review of the chief executive officer. The Board also has processes in place for the highest governance body to ensure that conflicts of interest are avoided.

Overall corporate governance, risk management and shareholder engagement is overseen by the full Board and its committees and is described in Praxair's March 2016 Proxy Statement. Among other items, the March 2016 Proxy Statement confirms that the key aspects of the corporate governance structure include issues of particular interest to the sustainability community, such as a director orientation and continuing education program; limits on service on other boards; risk oversight; succession planning; codes of conduct for directors, officers and employees; board diversity; an annual board strategy review; and a comprehensive sustainability program.

The March 2016 Proxy Statement starts with a "Letter from Our Lead Director" emphasizing the Board's commitment to a strong corporate governance structure; to a diverse, qualified, independent and engaged Board of Directors; to shareholder outreach (including, in 2015, executive compensation program changes); and to sustainability. It also notes, among "2015 and Recent Highlights," that 2015 was the first full year in which the Board's Technology, Safety and Sustainability Committee operated.

## Praxair's Executive Officers



**STEPHEN F. ANGEL**  
Chairman and Chief  
Executive Officer,  
Praxair, Inc.



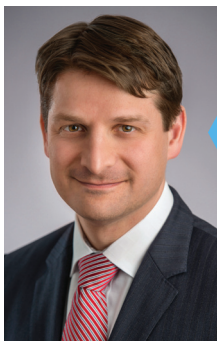
**EDUARDO MENEZES**  
Executive Vice  
President



**SCOTT E. TELESZ**  
Executive Vice  
President



**ANNE K. ROBY**  
Senior Vice President



**MATTHEW J. WHITE**  
Senior Vice President  
and Chief Financial  
Officer



**GUILLERMO BICHARA**  
Vice President,  
General Counsel and  
Corporate Secretary



**ELIZABETH T. HIRSCH**  
Vice President and  
Controller



**DAVID STRAUSS**  
Vice President  
and Chief Human  
Resources Officer

Praxair's Executive Officers are elected by the Board of Directors and serve at the pleasure of the Board.

The Board elects Praxair's officers annually following each annual meeting of shareholders.

\* This section responds to GRI G4-34

## Alignment with Compensation

In the discussion of annual performance-based variable compensation, the Board Compensation and Management Development Committee observed that: The Company's culture has been institutionalized over decades and is the foundation on

which employees drive and deliver financial results. They confirmed the importance of setting non-financial objectives to reinforce leadership's focus on maintaining an enduring culture that supports both short- and long-term sustainable results and established annual non-financial goals with respect to those elements.

### Non-financial goals considered most important to long-term sustainable success by the Praxair Board of Directors Compensation and Management Development Committee\*.

Elements	Goals	Activity	Non-financial business results 2015
<b>Safety, Environmental Performance and Sustainability</b>	Zero fatalities Maintain best in class safety rates Superior performance in sustainable development including environmental stewardship	Providing our employees with a safe operating environment through investing in state of the art technology and by driving a culture in which safety is top priority  Rigorous processes and procedures to ensure compliance with all applicable environmental regulations while also continuously reducing the environmental impact of our operations on the communities in which we operate	Had a recordable injury rate that was 7 times better than the OSHA average  Improved our lost workday case rate to more than 25 times better than the OSHA average  Reduced vehicle accidents by 22% year-over-year  Brought direct benefits to more than 345,000 people around the world through employee community engagement- more than 12 beneficiaries for each Praxair employee  Received public recognition: <ul style="list-style-type: none"> <li>Dow Jones Sustainability World Index - 13th year in a row</li> <li>8th consecutive year on the Climate Disclosure Leadership Index</li> </ul>
<b>People Development</b>	Strengthen the leadership pipeline including globally diverse talent	Attraction, retention and development of a diverse and engaged workforce through a robust succession planning process  Employee value proposition includes providing strong, dynamic leadership, a challenging work environment, industry-leading performance, competitive pay and benefits, and rewards and recognition for outstanding performance	Received public recognition: <ul style="list-style-type: none"> <li>Forbes top 100 companies to work for in the U.S.</li> <li>Best Employer recognition in Canada, Mexico, Brazil and Spain</li> </ul>
<b>Compliance</b>	Maintain a strong global compliance program and culture	Create and maintain a strong ethical culture in every country where we operate  Every employee accountable for ensuring that business results are achieved in compliance with local laws and regulations and our Standards of Business Integrity	Maintained a strong compliance culture
<b>Strategy</b>	Position the business for long term performance	Deliver excellent results in the short term and over a longer, sustainable period of time  Rigorously assess the quality and future impact of actions taken, as benefits may not be recognized for several years	Entered into multiple synergistic acquisitions  Increased focus on resilient end-markets
<b>Productivity</b>	Enhance organizational capabilities in tools, processes and practices	Deliver value through continuous innovation to help our customers enhance their product quality, service, reliability, productivity, safety, and environmental performance  Work across disciplines, industries and sectors, with our employees, customers, suppliers and a range of other stakeholders to get more output utilizing fewer resources and with less environmental impact	Obtained productivity results that were two times greater than next competitor, and increased productivity projects 7% year over year
<b>Relative Performance</b>	Strong performance relative to peer companies	Continue to be the best performing industrial gases company in the world  Assess how well we anticipate and manage adversity to optimize results  Determine if management's actions appear more or less effective than those of our peers  Appropriately respond to macroeconomic or other external factors unknown at the time financial goals were established	Grew industry-leading EBITDA margins and operating margins to record levels**  Quickly adjusted the cost structure in line with economic conditions and redoubled efforts in productivity and price attainment  Took proactive cost management actions including targeted reduction in force

\*March 2016 Proxy Statement, pages 44-46. \*\* Adjusted amounts are non-GAAP measures. See 2015 Annual Report.

# Sustainable Development Governance\*

Sustainable development is governed by the Board and executive leadership and integrated throughout Praxair:

**The Board Technology, Safety & Sustainability (TSS) Committee** assists the Board in its oversight of sustainability and environmental matters. Among other duties, it reviews Praxair's policies, programs, practices and performance related to identifying and managing priority sustainable development topics. The Committee was established in 2014 and is made up of four independent, non-executive directors. Its Charter is provided in Praxair's *March 2016 Proxy Statement*. The vice president, Sustainable Development, reports at least annually to this Committee.

In 2015, three key sustainability issues were reviewed by the Board TSS Committee:

- Sustainable development performance versus targets: The Committee reviewed and accepted results versus targets for environment and community engagement. These targets are reported in the *Performance Dashboard*.
- New SD 2020 targets: The full set of new Sustainable Development 2020 (SD 2020) Targets was presented to the Committee and were accepted and endorsed.
- Sustainable Development (SD) 101 training to reinforce the alignment between sustainability at Praxair and the Praxair brand and mission. A 30-minute custom training program was launched in six languages, in addition to English, through Praxair's Learning Management System (LMS). The training program was made available to the full Board.

**The Board Governance & Nominating Committee** reviews, among other things, the company's responses to broad public policy issues in the areas of social responsibility, corporate citizenship and charitable contributions. The vice president, Sustainable Development reports at least annually to this Committee on progress and outcomes in employee community engagement.

**The Executive Leadership Sustainability Steering Committee** provides internal oversight of sustainable development. It consists of the six members of the executive leadership team (Praxair's Office of the Chairman [OOC]: CEO, CFO, two EVPs, one SVP and general counsel), the vice presidents of Sustainable Development, Human Resources and Communications; and the director, Investor Relations. This committee meets at least twice a year. It reviews performance to date and reviews and approves priorities, plans and targets for the coming period

**A senior vice president** is the highest ranking executive officer responsible for sustainability and is a member of the OOC, reporting directly to the CEO. She is responsible for the Global Supply Systems (GSS), R&D, Global Market Development (GMD), Global Operations Excellence (GOE), GPMM, Sustainable Development, Safety, Health and Environment (SH&E), Global Sales and Electronic Materials.

**The vice president, Sustainable Development**, reports to the senior vice president and is the highest ranking functional leader of sustainability. She coordinates the development of the sustainable development targets, including the new SD 2020 Targets, and action plans. She coordinates the development of external sustainable

development reporting and responses to external third parties such as CDP and DJSI. She is also responsible for staying current with emerging issues in the sustainability community. Emerging issues deemed to be significant may be brought to the attention of the Sustainable Development Corporate Council. If considered relevant, they may be reported to the OOC and the Board Committee on Technology, Safety and Sustainability. She leads global internal and external engagement on sustainable development issues and ensures the fair, reasonable and transparent treatment of all perspectives. The director, Sustainable Development and Community Engagement reports to the vice president, Sustainable Development.

**Business Sustainable Development Councils** are established in each business comprised of all the functional leads and coordinated by a business-level Sustainable Development Coordinator. Business Councils meet quarterly. They lead business- and functional-level internal and external engagement on sustainable development in a manner parallel to the corporate structure and coordinate the local implementation of the sustainable development action plans and the SDMS. Business Sustainable Development Coordinators meet monthly in a telephone meeting coordinated by the vice president, Sustainable Development, and are normally joined by the senior vice president and a range of corporate functional sustainable development leads, e.g. for GPMM, Productivity, SH&E, R&D and Communications. They share sustainable development best practices and challenges between corporate groups and the businesses.

Performance against sustainable development targets is the responsibility of all businesses. Overall reporting is coordinated by the vice president, Sustainable Development. Reporting on specific targets is consolidated and coordinated by or one or more corporate functional vice presidents and is reviewed internally at least annually (and in many cases monthly).

- The vice president, SH&E: safety.
- The chief compliance officer: compliance.
- The chief technology officer: product stewardship.
- The vice presidents of GOE and Sustainable Development and the executive director, Energy and Productivity: energy and climate as well as sustainable productivity.
- The vice president, HR: employee engagement and diversity.
- The vice president, GPMM: supplier diversity.
- The vice president, Sustainable Development: community engagement.

Going forward, performance will be measured against the new SD 2020 Targets, see *Outlook* section.

\* This section responds to GRI G4-34



# ENGAGING STAKEHOLDERS\*

Praxair maintains open dialogue with internal and external stakeholders and we invite them to contribute to our decisions and actions that are affected by and affect them. The principal activity undertaken in 2015 was to continue to integrate stakeholder concerns into Praxair's sustainable development strategy, including the development of Praxair's Sustainable Development priorities and SD 2020 Targets. The process of stakeholder engagement in the development of this strategy is provided in the *Outlook* section. This chapter describes Praxair's ongoing systems of stakeholder engagement.

## Internal Engagement

### Employees

Praxair is committed to the safety, wellbeing and professional development of all our employees worldwide. The company is committed to providing a safe and inclusive workplace with an emphasis on the highest standards of integrity and professional performance. The Board identified *People Development* as a strategic non-financial goal, see *Alignment with Compensation*.

Praxair provides a range of employee benefits and has a robust training and development program and annual employee performance appraisals, see *SVR Annex GRI G4 LA 9 – 11*.

Praxair solicits employee feedback in a periodic global employee survey (every 2-3 years) and pulse surveys in the years between, and maintains a high rate of employee engagement, see *Performance Dashboard* for details. One issue that emerged from the surveys was the employee need for clearer definition of sustainable development at Praxair. A custom training program, "SD 101," was jointly created by the teams from HR, Communications and Sustainable Development to describe how sustainable development helps Praxair achieve its mission. It was launched on the LMS in late 2015 and has been completed by approximately 9,000 Praxair employees and contractors. It has been included in the on-boarding materials for new employees at Praxair U.S. and in Praxair Canada.

Employees are also actively engaged in sustainability-related activities. These include employee volunteerism, community engagement (see the *Communities* section below), Zero Waste and Earth Week. Earth Week has been promoted at Praxair since 2011, and site and employee participation has escalated over that period. In 2016, 400 sites participated and 3,000 employees contributed an "Earth Day Act" that was logged on the Praxair intranet. In Praxair Canada, for example, Earth Week is one of the principal employee engagement actions. During Earth Week 2016, more than 120 locations and 1,039 employees participated in the Canada Wide Challenge by planting trees; cleaning up sites, streams and local neighborhoods; starting recycling programs; holding clothing and food drives; carpooling; and participating in many other environmentally conscious activities. More information on Zero Waste is provided in the *Performance Dashboard*.

External awards for best company to work for and for employee engagement included:

- 2015 and 2016 Forbes Top 100 Companies to Work For in the U.S.
- Praxair Canada named one of Greater Toronto's Top 100 Employers for the third year in a row by Mediagroup Canada Inc., Canada's largest publisher of quality employment periodicals.

- Praxair North America: Achievers, Inc. named Praxair one of the 50 Most Engaged Workplaces™ in North America for 2015.
- Praxair Mexico was recognized as a "Super Company" by the business magazine, *CNN Expansión* (from the Time Inc. group).
- Praxair India: Received the "Green Icon" award from the Rotary Club, Coimbatore, India, for its "Operation Green" initiative.

## External Engagement

### Customers

As a business-to-business company, customer retention is crucial to Praxair's competitiveness. A significant portion of Praxair revenue is earned from recurring customers or retained accounts.

Praxair works tirelessly to integrate our business with that of our customers, and we continue to offer them relevant technologies to improve their resource efficiency – particularly in energy use and the reduction of GHG emissions. See "Praxair Enables 2X Carbon Productivity", page 12.

Globally, Praxair provides customers with safety information relating to its products and services and in some cases has provided basic safety training. For example, in 2015, Praxair India held several interactive, high-energy safety training seminars with key customers. The focus of the programs was best safety methods for cylinder handling, various aspects of product management and usage of personal protective equipment (PPE). Praxair's attentive customer service is recognized by our customers. Praxair India was named as a preferred supplier by Abbott Healthcare in recognition of uninterrupted, timely delivery and good maintenance of their installations at their Jhagadia plant in Gujarat, which provided Abbott with a record of uninterrupted production that reduced costs.

Each year, several global customers ask Praxair to respond to the CDP Supply Chain questionnaire for climate change issues. We have responded in all cases. In 2015, Praxair's score on this index was 100 percent for disclosure and an A- for performance. Also each year, several customers ask for Praxair to sign various external codes to assure that Praxair and/or our supply chain promote diversity and inclusion or are not at risk of sourcing "conflict minerals." Overall the incidence of these inbound queries and their issues of concern have been relatively unchanged in the past few years.

Through our Global Data Privacy policy, we safeguard customers' proprietary information and adhere to all data protection requirements in the countries in which we operate. There were no breaches of customer privacy or data security in 2015.

Customer awards received in 2015 included:

- Praxair India: Abbott Healthcare – named Praxair a preferred supplier.
- Praxair Korea: Samsung named Praxair Korea one of its Best Partners in 2015 for its outstanding performance in quality, on-time delivery, technology, safety, cost control and other key measures critical to Samsung's success.
- Praxair Mexico: Trinity Industries Mexico "Suppliers Award" to recognize Praxair's operation, quality and service.
- Praxair Mexico: GEPP Group – Pepsico "Nuestras raices – Galardon Tlaloc" to recognize Praxair's operations, quality and service.
- Praxair Taiwan: AU Optonics Corporation 2014 Best Material Supplier Award.

\* This section, through page 19, responds to GRI G4-24, G4-25, G4-26 and G4-27

# ENGAGING STAKEHOLDERS\* (continued)

## Shareholders and Investors

Praxair is classified as part of the Basic Materials sector (by CDP) and the Chemical sub-sector (by DJSI). In these sectors, there are specific external expectations and norms for sustainability reporting that Praxair considers as key inputs to its Priority Factor (PF) evaluation and important indicators of relevant emerging issues. These can change from year to year. Annually, the Sustainable Development function performs a systematic review of questions from the various stakeholders that request sustainability information. In addition, Praxair engages with key Socially Responsible Investor (SRI) groups that cover our sector and our company (see *Outlook*).

CDP and the RobecoSAM Dow Jones Sustainability Index (DJSI) corporate sustainability assessment consistently top the polls as the corporate sustainability ratings most recognized by experts. Praxair actively engages in their requests for information and engages also with related organizations, such as the Climate Disclosure Standards Board (CDSB), which developed the Climate Change Reporting Framework (CCRF). Praxair's vice president, Sustainable Development, shared Praxair's experience at CDP Spring Workshops in New York in 2011 (on integrating climate change into corporate strategy), in 2013 (on Scope 3 GHG reporting) and 2015 (on integrating climate change into financial filings as per the CCRF). DJSI is a leading index of corporate sustainability. Praxair considers the DJSI questionnaire as a proxy for emerging relevant sustainability questions and builds these into our SDMA.

Praxair was included as a component on several sustainability investor indexes in 2015, including the RobecoSAM DJSI World Index and the CDP Carbon Disclosure Leadership Index. Details and additional information is provided in the *Sustainable Development/Recognition* area on our website: [www.praxair.com](http://www.praxair.com).

## Suppliers\*\*

Praxair is a basic materials company with a relatively simple and often local supply chain. Two significant groups of suppliers are electrical utility company suppliers and contract drivers.

Praxair uses large quantities of electrical energy to power its air separation units (ASUs), and this offers opportunity to work together with some of our major electricity suppliers in the U.S. on energy efficiency to help them meet their state energy efficiency requirements. One example is the Los Angeles Department of Water and Power (LADWP), for which Praxair is a major customer.

Praxair is an active participant in LADWP's "Sustainability Partnership Program" and is engaged in a range of energy conservation measures at its facilities in Wilmington, California. These included re-wheeling an existing large air compressor, reconfiguring product and air compression equipment, and improving cross ties between pre-purifier molecular sieve beds, among other measures. Together these improvements resulted in annual energy savings of over five million kilowatt hours per year - equivalent to the amount of electricity used by more than 500 U.S. homes a year - and thereby reducing 3,500 MT of carbon dioxide equivalent (CO<sub>2</sub>e) per year. These energy conservation actions, combined with the incentive received from LADWP, contributed more than half a million dollars in savings and decreased water consumption by almost one million gallons per year. As a result

of joint efforts, The City of Los Angeles realized savings of more than 100 GWh of energy and 60,000 HCF of water during 2010-2014 and attributed savings of 19,877,168 kWh directly to Praxair's contributions and efforts towards LADWP's energy efficiency.

This partnership is helping LADWP meet its "energy efficiency goal of 15% by year 2020 - the highest and most ambitious energy efficiency goal by a major municipal utility in the United States," and further contributes to California's aggressive GHG reduction goals, including achieving 2009 emissions levels by 2020, and a 40% further reduction by 2030. In 2015, LADWP held its first Sustainability Awards, established to recognize a high-level commitment to environmental sustainability. Praxair US Industrial Gases (USIG) was proud to be a recipient of this award.

Contract drivers receive the same or comparable levels of training and often also technology investment. Our distribution business in Brazil is serviced by 99% contract drivers, and that business applies Praxair's target for GHG emissions intensity reduction in distribution to their contract driver population, see *Performance Dashboard* Note 12B. Going forward, contract drivers are included in Praxair's SD 2020 Target for reduced vehicle accidents (see *Outlook*).

In general, Praxair seeks to engage with its suppliers as sources of value and innovation. Globally, Praxair has a target for supplier sustainability management, a subset of Sustainable Productivity (see the *Performance Dashboard 2015*, Note 15, page 27, and the Suppliers area on our website: [www.praxair.com](http://www.praxair.com)).

Praxair USIG. received several supplier awards in 2015, including:

- GE Proof Not Promises Award. After installing a reverse osmosis system from GE, Praxair's Whiting, Calif., Hydrogen facility (HyCO) team expects to recover 120 million gallons of water a year.
- LADWP Sustainability Awards: Energy Management.

## Communities

Praxair is at its core a "local" company. We make large, capital investments near our customer sites and sign long-term supply agreements. As much as possible we distribute product locally, to reduce the costs of long-distance transport, normally by truck. Praxair therefore makes long-term investments in communities where we build our facilities, and we look locally for talent, leadership and suppliers. Community engagement is a part of Praxair's culture and is encouraged by leadership. Praxair engages with its communities by building close relationships with local providers of emergency services, with employee volunteer projects that help build community resilience and through the Praxair Global Giving Program. Detail on these is provided in the SVR Annex at GRI G4 SO1. Also see the *Praxair 2015 Community Engagement* brochure on the *Sustainable Development Reporting Center* on our website: [www.praxair.com](http://www.praxair.com).

Praxair community engagement brought direct benefits to more than 345,000 people around the world through employee community engagement, equating to more than 12 beneficiaries for each Praxair employee. These achievements were named in the *March 2016 Proxy Statement* among the non-financial business results that were rewarded in 2015 (see the *Alignment with Compensation* Table).

\* This section responds to GRI G4-24, G4-25, G4-26 and G4-27

\*\* This section responds to GRI G4-12

# ENGAGING STAKEHOLDERS\* (continued)

Praxair received several awards for its community engagement and corporate citizenship in 2015, including:

- Praxair Corporate and Praxair Distribution: Louisiana's Community & Technical College System awarded an inaugural Investor Impact Award honor to Praxair, one of five companies that made a sustainable contribution for more than one year to more than one college. The award was for Praxair's Skills Pipeline Workforce Development Program (see page 41).
- The Praxair Technology Center (PTC), Praxair's North American engineering and R&D center, received the Green Globe Award from the Ken-Ton Chamber of Commerce. This award recognizes companies that implement and practice a green- or sustainability-focused business philosophy.
- *Corporate Responsibility Magazine's (CR Magazine) 100 Best Corporate Citizens.*

## Governmental Agencies

Praxair engages in the development and implementation of public policy to ensure that its interests as a leading industrial gases company and as a large employer are appropriately represented. Through industry groups and trade associations, we interact with government officials and stakeholders to educate policy makers on issues that are important to us as a company. We maintain a detailed oversight process to ensure that our activities are conducted in a legal, ethical and transparent manner. We also train our employees annually on issues related to doing business with the government, complying with anti-trust and competition laws and the U.S. Foreign Corrupt Practices Act (FCPA). See the *Government Affairs* area on our website: [www.praxair.com](http://www.praxair.com).

Praxair was among 24 companies selected by the U.S. government to promote U.S. products and technologies that will help China reach its carbon emissions reduction goals. Praxair leaders joined a U.S. trade mission to China early in 2015, led by U.S. Commerce Secretary Penny Pritzker and Deputy U.S. Energy Secretary Elizabeth Sherwood Randall.

Government agency awards for corporate citizenship in 2015 included:

- Praxair Mexico and Central America were recognized as "Clean Transport" companies by SEMARNAT and the Secretariat of Communications and Transport (SCT) for helping reduce greenhouse gas emissions. In addition, the business has earned the organizations' highest rating for having the safest, most efficient and eco-friendly bulk distribution processes each of the past four years.

## Industry Associations\*\*

Praxair is a member of a range of trade associations, business associations, and alliances, including national chemical association and industrial gas association memberships in our key geographies, and manufacturers associations and chambers of commerce. In many cases, these are organizations where a Praxair executive holds a board seat and/or serves on a relevant committee; where Praxair participates in projects; and/or where it views membership as a strategic partnership. Praxair also participates in additional organizations, including many at the local and regional level. See the *SVR Annex* at GRI G4-16.

Industry association awards for corporate citizenship in 2015 included:

- 2016 American Chemistry Council – Energy Efficiency Program – Exceptional Merit Award.

## Responding to Emerging Issues and Additional Stakeholder Concerns

External groups sometimes request that Praxair show its commitment to externally developed economic, environmental and social charters and principles. In most cases, Praxair has processes in place to remain aware of relevant current and emerging external issues, integrate relevant issues into voluntary Praxair policies, maintain policies and related systems to ensure that corporate responsibility policy and practice remains current and relevant and to disclose these in our public reporting. For more information, see the *Policies & Position Statements* area on our website: [www.praxair.com](http://www.praxair.com)

This Report responds to a range of external stakeholder concerns; see *About this Report*. Also during 2015, Praxair actively sought to understand and respond to emerging issues and stakeholder concerns as part of the development of our SD 2020 Targets (see *Outlook*).

\* This section responds to GRI G4-24, G4-25, G4-26 and G4-27

\*\* This section responds to GRI G4-16

# DETERMINING PRIORITIES\*

A consolidated list of current-year internal, external and emerging issues was created in our Sustainable Development Materiality Assessment (SDMA) process reported in the 2014 SVR. The 2015 SDMA focused on our SD 2020 targets and is reported in the *Outlook* section. Praxair's six sustainable development priority factors, 24 related Key Performance Indicators (KPIs) and performance targets (2009-2015) are provided below and in the table on the facing page. Performance against these targets is reviewed in a summary chart on page 3 and in detail in the *Performance Dashboard*.

## Scope and Boundaries

Each Priority Factor is a priority for all Praxair industrial and process gases, and the scope of each related target described in the *Performance Dashboard* section. The PST business does not have air separation units or hydrogen facilities and does not have a significant trucking operation. Consequently, it does not report into the SDMS for ASU energy efficiency, hydrogen GHG efficiency or transportation GHG efficiency. It is covered in reporting for all other metrics. Some priority aspect boundaries are external, or measure aspects outside Praxair's physical boundaries. These include suppliers and external communities. The safety, human rights, sustainable procurement and community engagement performance of our contractors fall within and outside of Praxair's organizational boundaries. Praxair does not have direct control over these areas, but may seek to influence outcomes as appropriate.

## Modifications

As an industrial gases company, Praxair operational NOx, SOx and VOC emissions are modest relative to the chemical industry. Praxair's electricity use has an impact on NOx and SOx emissions, and these are managed through our operational energy targets. For distribution, Praxair had a 2015 target to reduce NOx in driving. However, this is not an internally used target and was therefore removed from the list of material items and not carried into the SD 2020 Targets. Performance against the NOx target is reported through the end of 2015.

\* This section responds to GRI G4-18

Even though air emissions are not major issues in Praxair's business model, they are of interest to key stakeholders and Praxair will continue to report non-GHG air emissions in its *SVR Annex*. For purposes of peer benchmarking, Praxair is placed in the [chemical sector in the S&P Global Industry Classification Standard \(GICS\)](#). Operational NOx and SOx emissions are material issues for chemical companies. For example, the SASB guidance for the chemical sector notes that "production of key chemicals ... generates significant volumes of sulfur dioxide (SO<sub>2</sub>) and nitrogen oxides (NOx). Relative to other industries, the chemicals industry provides a substantial source of some of these pollutants." This view is echoed by the American Chemistry Council's (ACC's) RCMS performance metrics and the DJSI.

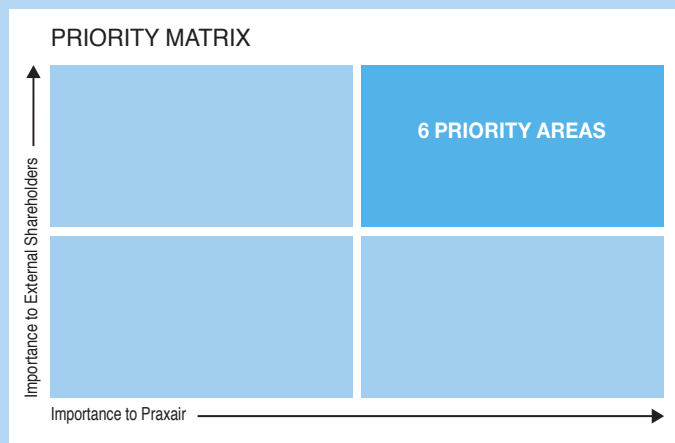
## Mapping Priorities to Targets

The table, *Integration of Sustainable Development*, shows that Praxair's sustainable development Priority Factors and performance targets map to Praxair's Vision and Values, key risks and key nonfinancial elements and the six <IR> capitals.

## Managing Performance

Praxair's Performance Dashboard is presented on pages 22-29. It shows how we performed in 2015 against each target. A related note provides detail such as scope, methodology and source data.







## 2015 Priority Factors and Related KPIs



- **SAFETY**
  - Occupational Health & Safety
- **GOVERNANCE, ETHICS & COMPLIANCE**
  - Governance & Ethics
- **ENERGY & CLIMATE CHANGE**
  - Energy & GHG Emissions
  - Sustainable Transportation
- **ECO PORTFOLIO**
  - Environmental Innovation
  - Product Stewardship
- **SUSTAINABLE PRODUCTIVITY**
  - Eco Efficiency
  - Supplier Sustainability Management
- **PEOPLE DEVELOPMENT**
  - Diversity
  - Employee Engagement
  - Community Engagement
  - Stakeholder Engagement



# Integration of Sustainable Development

Vision, Values	2015 Annual Report: Item 1A Risks	Priority Factors	Targets 2009-2015	Proxy 2015: Non-financial Incentives
 <b>Safety First</b>	Operational risks, including to people & environment	<b>Safety</b>	Outperform the ACC published large member average for Recordable Injury Rate (per 200,000 hours) Outperform the ACC published large member average for Lost Time Injury Frequency Rate (LTIFR), also called Lost Workday Case Rate (LWCR) (per 200,000 hours)	<b>Safety</b> - Zero fatalities - Best-in-class safety rates
 <b>High Integrity</b>	Regulations	<b>Governance, Ethics &amp; Compliance</b>	Maintain global standards of corporate governance, ethics, integrity, accountability & human rights	<b>Compliance Culture</b>
 <b>Environment &amp; Social Responsibility</b>	Energy costs Regulations Catastrophic events Climate change  Sustainable Transportation	<b>Energy &amp; Climate Change</b>	Achieve cumulative energy savings in excess of \$500 million and 5 million MT CO <sub>2</sub> e, 2009-2020 ASU Design: 8.5% energy intensity improvement per product produced from new ASU facilities ASUs: 6% energy and GHG intensity improvement per product sold Hydrogen: 2.4% GHG improvement per product produced Packaged Gas and Bulk Trucking: 9% improvement in GHGs per product delivered • U.S. Bulk Trucking: 3% net reduction in fuel use and GHGs, 2012-15 • South America (SAWM) all trucking (employee and contract drivers): improve GHG intensity 1.5% per year per product delivered, 2012-15 Reduce vehicle NOx emissions 50% per mile driven	Superior performance in SD Environmental stewardship
 <b>Customer Satisfaction</b>	Technological Advances: R&D	<b>Eco Portfolio</b>	Earn 30% revenue from eco portfolio Annually enable at least 2X more GHG to be avoided than were emitted from all Praxair operations Enable delivery of safe drinking water to millions of consumers, particularly in China Product stewardship targets • By 2020, offer 100% chrome-free slurry product alternatives to the market • By 2017, provide an alternative to cadmium plating. Comply with the Responsible Care® Global Charter by 2020	Productivity: More output from fewer resources with less environmental impact Continuous environmental innovation
 <b>Results Driven</b>	Raw materials and energy costs	<b>Sustainable Productivity</b>	Achieve \$500 million in cumulative environmental savings from productivity Achieve a cumulative \$10 million in greening the supply chain (2012-15)	Productivity: More output from fewer resources with less environmental impact
 <b>The Right People</b>	Retaining qualified personnel	<b>People Development</b>	Source and retain top talent, particularly in emerging economies Continuously improve employee engagement results in corporate engagement survey 200 Zero Waste sites Achieve a cumulative 1.5 million beneficiaries Achieve and maintain a positive net benefit ratio of 10 beneficiaries per employee Plant or preserve one million trees with major conservation organizations (2012 - 2016)	People development - Attraction - Retention - Engagement

# PERFORMANCE DASHBOARD

## LEGEND

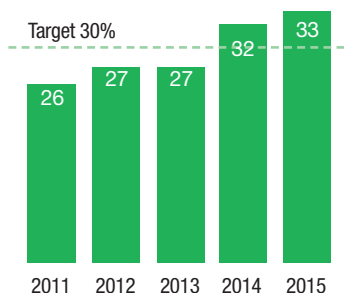
All targets are 2010-2015 with a 2009 baseline unless otherwise stated.



Externally audited information. For audited data reported here normalized vs. baseline, the audit was performed on the underlying net value. Auditor's report is provided in the SVR Annex.

## ECO PORTFOLIO

### 1. ENVIRONMENTAL INNOVATION – PERCENTAGE REVENUE FROM ECO PORTFOLIO



Reports percentage revenue value from eco portfolio as a percentage of total annual revenue. The 2015 target was 30 percent of revenue; Praxair achieved 33 percent, or \$3.5 billion. Praxair's eco portfolio includes sales from applications that bring environmental advantage. Praxair R&D has developed a simplified life cycle-based screening methodology to determine and update which applications are included. A Life Cycle Assessment (LCA) includes the four stages of a product life cycle: raw material acquisition, manufacturing, use/reuse/maintenance and recycle/waste management. A full LCA covers all four stages of the product life cycle; a simplified LCA/screening LCA covers only part of the four stages of a product life cycle i.e., it assesses one or two of the stages completely, or analyzes all four stages to lesser depth. Praxair evaluates 100 percent of products under development in depth in the first three stages, i.e., cradle to gate. Products are evaluated for impacts across Praxair's Environmental Key Performance Indicators (EKPIs): energy (electricity, natural gas, fuel), air emissions and direct and indirect GHG emissions; waste (hazardous and non-hazardous), water and Ozone Depleting Substances (ODSs). Major applications determined to meet the threshold benefit conditions include: oxygen in steel production and non-ferrous metals that improve energy efficiency and reduce air emissions; argon in welding and solar production; process gases for LED production; aerospace coatings for fuel savings; all PST components that extend product life; hydrogen for Ultra-Low Sulfur Diesel; all water treatment; and others.

In addition, a portion of Praxair revenue is earned from applications that bring social benefits, such as oxygen for healthcare and helium used as a coolant in MRIs. The healthcare end-market contributed 8 percent of Praxair's 2015 revenue.

### 2. ENVIRONMENTAL INNOVATION – CUSTOMER GHG BENEFIT

ENABLED AT LEAST

2X

MORE GHG  
TO BE AVOIDED

per year than is emitted  
in all Praxair operations

Praxair is a large user of energy, both electricity and natural gas. In absolute terms, energy use and related GHG emissions have risen over the past years, particularly as we bring additional HyCO Steam Methane Reformers (SMRs) for hydrogen production on-line. Total 2015 Scope 1 and 2 GHG emissions were 20.8 MM MT CO<sub>2</sub>e; see SVR Annex at GRI G4 EN15 and EN16. Praxair takes a range of actions to ensure energy efficiency, including targets for ASU energy intensity (and related GHG emissions intensity) improvement in operations and in design, and HyCO GHG intensity improvements. Many Praxair applications enable environmental benefits to customers or end users. These include energy efficiency and reduced air emissions from oxygen in most industrial applications, and the elimination of sulfur from diesel fuel by hydrogen used for Ultra-Low Sulfur Diesel. However, as climate change is a global concern, Praxair must demonstrate that its applications show a net positive GHG impact. This target challenges Praxair to show that a subset of our applications enables our customers or their end users to avoid twice the volume of all Praxair Scope 1 and 2 GHG emissions from operations. Results reflect conclusions of Praxair White Papers, available on our website: [www.praxair.com](http://www.praxair.com). Krypton used to insulate windows and argon used in welding enabled 1.5 MM MT CO<sub>2</sub>e to be avoided by Praxair customers in 2015. Oxygen used in steelmaking enabled customer energy efficiency and reduced indirect GHG emissions; in 2015, this enabled the avoidance of 11 MM MT CO<sub>2</sub>e. Praxair hydrogen for Ultra-Low Sulfur Diesel helped enable end users to avoid 40 MM MT CO<sub>2</sub>e in 2015, a savings equivalent to the average annual energy use of 4.3 million homes in the U.S. (see <http://www.epa.gov/cleanenergy/energy-resources/calculator.html>), and more than five times all Praxair's direct GHG emissions from hydrogen (7.0 MM MT CO<sub>2</sub>e). We express this target as a 100 percent reduction of twice our 2015 emissions (20,839,000 MT CO<sub>2</sub>e \* 2 = 41,678,000). The hydrogen claim reflects conclusions of a third-party reviewed Praxair White Paper showing that hydrogen used for the manufacture of Ultra-Low Sulfur Diesel, when the tailpipe is fitted with a diesel particulate filter, helps to enable the avoidance of black carbon emissions from the truck exhaust. Black carbon has a global warming potential and can be converted to CO<sub>2</sub>e. See page12.

### 3. ENVIRONMENTAL INNOVATION – CONSUMER WATER BENEFITS

PRAXAIR GASES ENABLE ★  
**> 125**  
**MILLION PEOPLE**  
each day to receive  
**SAFE DRINKING WATER**

Covers all end-consumers served by Praxair water applications. Measures people living in cities where Praxair ozone disinfects water to help make it potable, mainly in China, and Praxair carbon dioxide aids in desalination, mainly in Spain and the U.S. Praxair calculates the number of end-consumers based on market information about Praxair customers, e.g., city water utilities. In 2015, Praxair gases enabled clean, safe drinking water to be delivered to more than 125 million people, see page 38.

### 4. PRODUCT STEWARDSHIP – LOWERING PRODUCT TOXICITY

PRAXAIR GASES OFFER  
CUSTOMERS  
an alternative to  
**SVHCs**  
(substances of very high concern)

Praxair had a 2014 target to introduce at least one major application that offers customers an alternative to substances of very high concern (SVHCs) ahead of REACH requirements (REACH is the EU 2006 regulation for the Registration, Evaluation, Authorisation and Restriction of Chemicals). This target applies to Praxair Surface Technologies (PST). In 2014, after 15 years of development efforts, PST met this target with the introduction of slurry based materials SermaTel™ CF and SermaLoy® J CF, effectively replacing the need for hexavalent chromium in almost all flight coatings applications. Today Praxair continues its research efforts and its work with OEMs in the automotive, aerospace and industrial markets: developing, testing and qualifying new products to ensure the markets we serve have REACH compliant, high performance alternatives for all of their manufacturing processes. PST has issued a new target: By 2021, offer 100% chrome-free slurry product alternatives to the market. PST has also set a second target: By 2017, provide a sustainable alternative to cadmium plating.

### 5. PRODUCT STEWARDSHIP – RESPONSIBLE CARE®

Praxair set a new target in early 2015 to comply with the chemical industry's Responsible Care® Global Charter and its Six Elements by 2020. Praxair is a signatory to the Global Charter. This target is in progress.

## Environmental Innovation: Enabling Efficiencies With Titanium Powder Technology



Praxair has more than 100 university and industry partnerships, and open innovation networks where we actively seek connections with innovators across industries. We have consistently succeeded in leveraging open innovation to bring step change technologies to the world.

One of our innovation connections is with AMES Laboratory, an institute operated by the Iowa State University and backed by the US Department of Energy Office of Science national laboratory. As a result of that connection, Praxair was introduced to a gas atomization technology for fine spherical titanium powder production that had been developed to proof of concept. Praxair recognized this technology as

an enabler to solve a significant industry challenge. As a comparatively strong, lightweight and corrosion resistant metal, titanium has long been a preferred material for the aerospace industry. However, it is expensive and difficult to machine, making its use prohibitive in many applications. Recognizing that the gas atomization technology had the potential to make additive manufacturing and injection molding with titanium a reality for industry, Praxair made an acquisition to its established value stream in the aerospace community and combined it with AMES Laboratory's ground breaking titanium powder technology.

In 2015, Praxair successfully scaled the new technology to build the largest atomization equipment in the world for the production of fine, spherical titanium powder. As a result, Praxair now has unique capabilities for large-scale supply of spherical titanium powders for additive manufacturing and injection molding from our 300,000 sq. ft. facility dedicated to production of metallic and ceramic powders.

Today, because of this new production technology, additive manufacturing and injection molding with titanium powder is a more affordable reality, enabling significantly less manufacturing material waste. In the aircraft industry alone, additive manufacturing and injection molding capability with titanium has the potential to increase the "buy-to-fly" ratio for titanium almost tenfold: from 100 pound purchased / 10 pounds in the plane to 100 pounds purchased/ 98 pounds in the finished product. Ultimately, now that high-volume 3D printing with titanium is possible, Praxair has enabled lower-cost efficiency gains in automotive, aerospace and power production industries. We are helping make possible the design of more advanced components.

# PERFORMANCE DASHBOARD

## GOVERNANCE, ETHICS & COMPLIANCE

### 6A. GOVERNANCE & ETHICS

**100%**  
**EMPLOYEES**

Certified they read and understood Praxair's STANDARDS OF BUSINESS INTEGRITY

Reported for all Praxair employees. High integrity is a core value at Praxair. It strengthens Praxair's reputation and helps us build trust among our customers, suppliers, investors and communities. One hundred percent of Praxair management and required employees annually certify that they have read and understood Praxair's Compliance with Laws and Business Integrity and Ethics policies. Certification is achieved annually for Praxair's Standards of Business Integrity (SBI) and biennially to additional related areas. In 2015, this additional training covered: Doing Business with the Government; Complying with Competition Laws; Understanding the Foreign Corrupt Practices Act; and Best Practices for Email and Written Communications.

### 6B. HUMAN RIGHTS

 **UPHOLD  
HUMAN  
RIGHTS**  
Policy & Standards

Praxair is committed to the recognition and safeguarding of human rights in all the countries in which we operate. Praxair complies with all applicable national laws and international treaties concerning human rights, social rights, and labor rights, consistent with the principles of the Universal Declaration of Human Rights, and referenced elements of the International Labour Organization's Declaration on Fundamental Principles and Rights at Work.

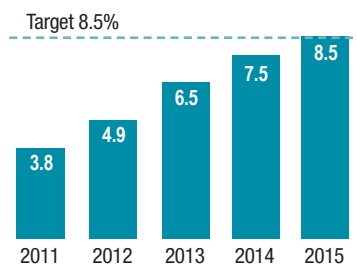
## ENERGY & CLIMATE CHANGE

### 7. ENERGY & GHG EMISSIONS – CUMULATIVE ENERGY SAVINGS (2009- 2020)

 **\$260**  
**MILLION**  
2.1MM MT CO<sub>2</sub>e avoided  
(cumulative)

Measures performance against Praxair's long-term target: From 2009-2020, achieve cumulative energy savings in excess of \$500 million, 8MM MWh and 5 million MT CO<sub>2</sub>e. Covers all Praxair operations and reports cumulative dollars and MT CO<sub>2</sub>e savings. At the end of 2015, Praxair achieved a cumulative \$260 million savings in energy efficiency, 1.4 million MWh electricity and 2.1 million MT CO<sub>2</sub>e avoided, which is on track with the 2020 target. Note that these savings are measured in operations and are separate from productivity savings (see Note 18).

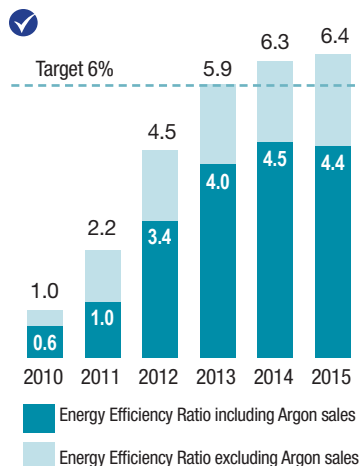
### 8. ENERGY & GHG EMISSIONS – AIR SEPARATION UNITS (ASU) DESIGN ENERGY INTENSITY



Covers energy intensity improvements made in the design of new ASUs each year by Praxair's R&D and Engineering organizations. Measures projected energy cost per molecule of gas produced versus baseline year. The 2015 result was 8.5 percent energy intensity reduction, achieving target.

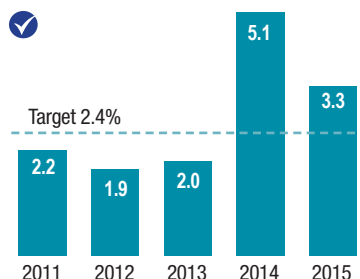


## 9. ENERGY & GHG EMISSIONS – ASU ENERGY & GHG INTENSITY



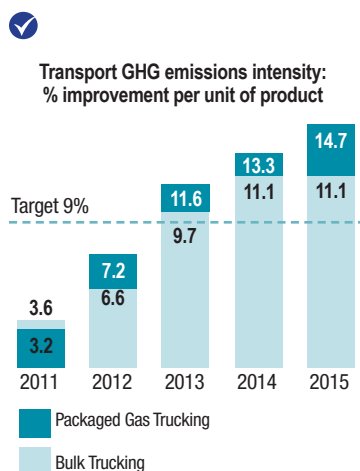
Covers all Praxair worldwide ASUs. ASUs split the air into its atmospheric gas components – Oxygen (O<sub>2</sub>), Nitrogen (N<sub>2</sub>) and Argon (Ar). ASUs are our largest users of electricity, and therefore our largest source of Scope 2 GHG emissions. Target was to improve energy and GHG intensity from ASUs by 6% by 2015, from a 2009 baseline. This equates to an average of 1% per year. For this target, we measure energy per molecule of gas sold vs. baseline year, normalized to gaseous oxygen equivalent (GO<sub>2e</sub>). Praxair achieved 4.4% energy intensity over its base, short of the 6% target, as shown in the dark blue bars in the chart. 2015 performance was affected by an overall decrease in production worldwide, as well as a strong market demand for Argon (Ar) in the U.S. and Canada. Ar constitutes less than 1% of air by volume. When the market demands Ar, the ASU co-products O<sub>2</sub> and N<sub>2</sub> are vented back to the air. This has no negative environmental impact except that producing Ar on its own without co-products is more energy intensive. Energy efficiency measured vs. production, i.e. eliminating the distortion caused by Ar sales, shows Praxair achieving 6.4% energy intensity improvement and exceeding target, see combined dark and light blue bars on the chart. For the ASU GHG intensity target, Praxair applies a constant emission factor to translate the energy efficiency results to Scope 2 GHG intensity.

## 10. ENERGY & GHG EMISSIONS – HYDROGEN GHG EMISSIONS INTENSITY



Hydrogen target set in 2009 for five major Steam Methane Reformers (SMR) facilities; excludes plants that started operating after that. Target measured GHG intensity per molecule of gas produced versus baseline and targets a 2.4 percent GHG intensity improvement by 2015. Hydrogen is Praxair's principal source of Scope 1 emissions and one of our most significant growth drivers. In 2015, the five SMRs achieved a 3.3 percent GHG intensity improvement over base, substantially exceeding the 2015 target. Strong results were achieved principally from energy efficiency initiatives and from byproduct sourcing of hydrogen at the largest of these SMRs, which replaces the need to produce on-purpose hydrogen. In 2009, these plants accounted for about 75 percent of Scope 1 emissions from hydrogen, by 2015 this had dropped to 42 percent of 2015 Scope 1 GHG emissions. Praxair also invests in renewable energy, see page 37.

## 11. SUSTAINABLE TRANSPORTATION – BULK & PACKAGED GAS TRUCKING GHG EMISSIONS INTENSITY



Covers all Praxair driving operations where the driver is a Praxair employee. The target measures the GHG intensity per product delivered versus baseline (2009) and measures annual fuel efficiency. This is calculated by multiplying the number of miles driven in each geography by local GHG emissions factors and product volume delivered. Drivers transport Praxair product around the world about 30 times a day, and half of this is done by contract drivers. We track and manage GHG emissions in trucking for both Praxair drivers and contract drivers, to help us improve distribution efficiency around the world.

### SUSTAINABLE TRANSPORTATION - BULK GAS TRUCKING GHG EMISSIONS INTENSITY

The target for Praxair Bulk drivers was 1.5 percent annual GHG intensity improvement, 2009-2015, or 9 percent improvement by 2015. Bulk driving GHG emissions intensity remained largely stable from 2014 to 2015, and improved 11.1 percent from 2009, exceeding the 2015 target.

### SUSTAINABLE TRANSPORTATION – PACKAGED GAS TRUCKING GHG EMISSIONS INTENSITY

The target for Praxair packaged gas drivers was 1.5 percent annual GHG intensity improvement, 2009-2015, or 9 percent improvement by 2015. Packaged gas GHG emissions intensity improved 10.5 percent in 2015 and 14.7 percent from 2009, substantially exceeding its 2015 target. The improvements included strong fuel efficiency programs in Canada and Mexico.

# PERFORMANCE DASHBOARD

## 12A. SUSTAINABLE TRANSPORTATION – U.S. BULK TRUCKING NET GHG REDUCTION (2012-2015)

### ✓ Reduce fuel use and GHG EMISSIONS

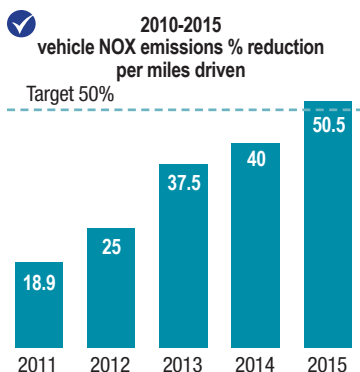
Target is 3% reduction in GHG emissions, 2012-2015. Between 2012 and 2015, Praxair improved fuel efficiency by 3.4%. Despite this fuel efficiency improvement, absolute GHG emissions in U.S. bulk trucking were 2% higher in 2015 than in 2012. In 2015, total mileage was over 6% higher than in 2012. This increase in mileage, negated the net GHG emissions reduction we saw in 2013 and 2014. While we were not able to meet our target, we did make significant improvements in GHG emissions intensity from bulk trucking worldwide, see Note 11.

## 12B. SUSTAINABLE TRANSPORTATION – SOUTH AMERICA EMPLOYEE & CONTRACT DRIVERS GHG EMISSIONS INTENSITY REDUCTION

### ✓ 2.2% % improvement per unit of product South America (SAWM) employee and contract drivers Transport GHG Intensity

99% of our drivers in our South American business (SAWM) are contract drivers. SAWM extended our global driving target to improve GHG intensity 1.5% per year, to their employee and contract drivers. In 2015, this combined group improved GHG intensity by 2.2% and achieved a net GHG reduction of 6.9% in absolute GHG emissions, 2014 to 2015.

## 13. SUSTAINABLE TRANSPORTATION – AIR EMISSIONS - NO<sub>x</sub> INTENSITY REDUCTION

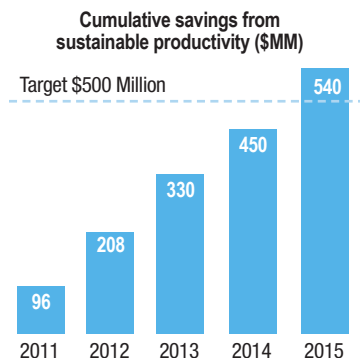


Covers all NO<sub>x</sub> emissions from Praxair truck driving. The metric is calculated based on U.S. Department of Transportation (DOT) studies of engine improvements in regards to NO<sub>x</sub> emissions in the transportation fleet over time. These positive results were achieved through the continual upgrading of the fleet of trucks to keep it modern. The target was 50 percent reduction in fleet NO<sub>x</sub> emissions per mile driven by 2015. In 2015, NO<sub>x</sub> emissions were reduced by 50.5 percent, exceeding target. In addition, absolute NO<sub>x</sub> emissions from driving decreased by 37%, 2009-2015. Praxair's 2014-2015 SDMA determined that NO<sub>x</sub> emissions are not a key priority going forward. Praxair's total global NO<sub>x</sub> emissions have been less than 2,000 MT since 2010, which we consider to have a relatively small environmental impact. This target has been discontinued for the next generation of SD targets (2016-2020).



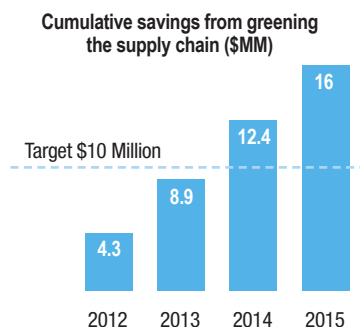
# SUSTAINABLE PRODUCTIVITY

## 14. SUSTAINABLE PRODUCTIVITY - \$ SAVINGS FROM ECO EFFICIENCY



Covers all Praxair operations. Measures productivity projects that bring financial and environmental savings in Praxair's EKPI areas. Sustainable productivity excludes product innovation and operational environmental efficiencies after 12 months (energy savings in operations is captured in the cumulative energy savings target; see Note 7). It excludes ongoing savings from prior years' initiatives. Financial and environmental costs and benefits are pro-rated for partially completed projects. Praxair's target for sustainable productivity was a cumulative saving of \$500 million, 2010-2015. In 2015, the program achieved savings of more than \$117 million, for a cumulative saving of more than \$540 MM since 2010, exceeding its target. Environmental savings include avoiding cumulatively more than 2 MM MT CO<sub>2</sub>e, 2010-2015, and more than one billion gallons of water. See *Sustainable Productivity*, page 37, for additional details.

## 15. SUPPLIER SUSTAINABILITY MANAGEMENT – GREENING THE SUPPLY CHAIN (2012-2015)



This area is a subset of sustainable productivity. Target covers Praxair's GPMM organization and measures financial savings in sustainable productivity from procurement and seeks to achieve at least \$10 million in cumulative sustainable productivity savings from greening our supply chain (base year: 2012). At end of 2015, Praxair achieved \$16 million in cumulative savings, exceeding the 2015 target. This included more than 150 projects from Praxair businesses that saved more than 4 million KWh, more than one million pounds of hazardous waste and nearly a million gallons of water. GPMM has a new target to support women, minority and small business enterprises, see page 39.

# SAFETY

## 16. OCCUPATIONAL HEALTH & SAFETY – RECORDABLE INJURIES

✓ Outperform the ACC published large member average for Recordable Injury Rate

**0.42**  
RECORDABLE INJURIES  
per 200,000 hours worked

Covers all Praxair operations. Recordable injury rate (RIR) target is to outperform the ACC large industry average. Praxair's 2015 RIR was 0.42, versus 0.50 for the ACC large member average and seven times better than the OSHA industrial average. In distribution safety, Praxair reduced vehicle accidents by 22 percent year over year. Tragically, Praxair experienced two contractor fatalities in 2015, one on-site and one resulting from a truck rollover, both in India. Additional employee and contractor safety results are provided in the *SVR Annex* at LA6. Safety in Praxair truck driving is provided on page 36.

## 17. OCCUPATIONAL HEALTH & SAFETY – LOST WORKDAY CASES [LWCs, ALSO CALLED LOST TIME INJURY FREQUENCY RATE (LTIFR)]

✓ Outperform the ACC published large member average for Recordable Injury Rate

**0.04**  
LOST WORKDAY CASES (LWCs)  
per 200,000 hours worked

Covers all Praxair operations. Praxair's target was to outperform the ACC large member average for LWCs. Praxair's 2015 LWC Rate was 0.04 per 200,000 hours worked, versus 0.05 for the ACC large member average and 25 times better than the OSHA industrial average. Additional employee and contractor safety results are provided in the *SVR Annex* at LA6.

# PERFORMANCE DASHBOARD

## PEOPLE DEVELOPMENT

### 18. EMPLOYEE ENGAGEMENT

**83%**  
EMPLOYEE  
ENGAGEMENT RATE  
In Global Pulse Survey

Target is continuous improvement in employee engagement; covers all Praxair employees. Praxair conducts a global employee survey every two to three years. The 2013 survey was distributed to all Praxair worldwide employees and hourly workers. It substantially expanded the number of questions and the number of employee invitees compared to the previous survey. Praxair's target was to outperform its industry peers. Survey responses were received from 73 percent of the respondent pool. Overall Engagement Index "score" was 83 percent, 8 percent higher than benchmark industry peers. In 2015, Praxair employees answered a shorter Employee Engagement Pulse Survey. This was distributed to a subset of 30 percent of employees and confirmed an employee engagement score of 83 percent.

### 19. EMPLOYEE ENGAGEMENT – ZERO WASTE TO LANDFILL



Covers all Praxair operations. Participating sites aim to achieve more than 90 percent process waste avoided from landfill, which can include incineration for energy. 2015 target was for 150 sites to achieve Zero Waste. From a start in 2011 with 11 sites participating, 343 Praxair sites participated in 2015 and 216 achieved Zero Waste, exceeding the target. This represents almost half our employees worldwide, who apply productivity tools to eliminate waste, reduce risks and costs, and earn revenue. In 2015, Zero Waste avoided more than 112 million pounds of waste from landfill.

### 20. DIVERSITY – EMERGING ECONOMY LEADERSHIP

**94.7%**  
LEADERS  
in emerging economies  
are local nationals

Covers all Praxair operations in our emerging economy countries of operation, i.e., South and Central America and Asia. As an international business and with a local footprint and with emerging markets as part of our growth strategy, Praxair needs diverse leadership as well as local leadership. Metric focuses on the "local" component and counts all country leaders or, if there is no country leader, the next level above. "Local" leader is defined as a citizen of the country or of that Praxair business region. In 2015, 94.7 percent of Praxair emerging economy leaders were local.

### 21. STAKEHOLDER ENGAGEMENT – STRATEGIC PARTNERSHIPS

 **900,000  
TREES**  
PLANTED OR PRESERVED

Covers all Praxair operations. Praxair's target is to plant one million trees (2012-2016). Praxair is collaborating with several environmental conservation organizations to plant or preserve one million trees by 2016. At the end of 2015, 900,000 trees had been planted or preserved. This tree planting contribution is designed to multiply the environmental value created by its employee Zero Waste program; see Note 23. Praxair's Global Giving Program provides a "match" per waste avoided from Zero Waste sites, to amplify the sustainability benefits provided to the company by the employee Zero Waste program.



## 22. COMMUNITY ENGAGEMENT – EMPLOYEE \$ CONTRIBUTED



**>\$775,000**

cash excluding in-kind contributions

FROM **EMPLOYEES  
AND FACILITIES**

(not including support from  
Praxair Global Giving)

Covers all reported employee volunteering in Praxair-organized community engagement events. Measures annual cash and in-kind contributions from employees and facilities. Many of these projects are also supported or matched by Praxair's Global Giving Program, which reports those contributions (so they are excluded here). In 2015, in addition to their time, our facilities and employees directly contributed and raised more than \$775,000 in cash and in-kind contributions. There is no target for this measure.

## 23. COMMUNITY ENGAGEMENT – NET BENEFIT RATIO

**12:1**

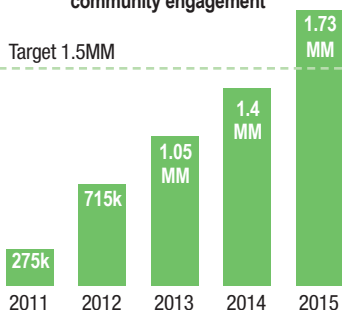
**NET BENEFIT RATIO  
OF BENEFICIARIES  
PER EMPLOYEE**

Covers all reported employee volunteering in Praxair-organized community engagement events. Target was to achieve and maintain a positive net benefit of 10 beneficiaries per employee. Metric is summed from project-level estimations of the number of beneficiaries from Praxair community engagement activity. In 2015, Praxair achieved a ratio of 12 beneficiaries per employee for the second consecutive year.

## 24. COMMUNITY ENGAGEMENT – CUMULATIVE BENEFICIARIES

Cumulative beneficiaries from  
community engagement

Target 1.5MM



Covers all reported Praxair Community Engagement activity. Metric counts reported direct beneficiaries from these activities and a cumulative result from a 2010 baseline. The 2015 target was a cumulative 1.5 million beneficiaries. In 2015, Praxair Community Engagement benefited more than 346,000 people, up from 335,000 in 2014. Cumulative beneficiaries were more than 1,730,000, exceeding target. In 2015, 385 sites participated in 304 projects, and employees contributed 53,000 hours. See Praxair's 2015 *Community Engagement Report* in the Sustainable Development Reporting Center area on our website: [www.praxair.com](http://www.praxair.com).



# OUTLOOK: SUSTAINABLE DEVELOPMENT 2020 TARGETS

## Future

Praxair's leadership expects that the company's sustainable development non-financial aspects will continue to drive value. Praxair's innovation pipeline has shown that it can deliver applications today that meet customer needs into the coming decades. Praxair's competitive advantage has never been stronger. As one of the world's leading industrial gas companies, our strategy of building geographic density through integrated supply of on-site, merchant and packaged gas distribution and disciplined capital investment has produced high-quality growth and industry-leading return on capital. Continuous growth is driven by Praxair's strength in delivering innovative and resource-efficient solutions for our customers.

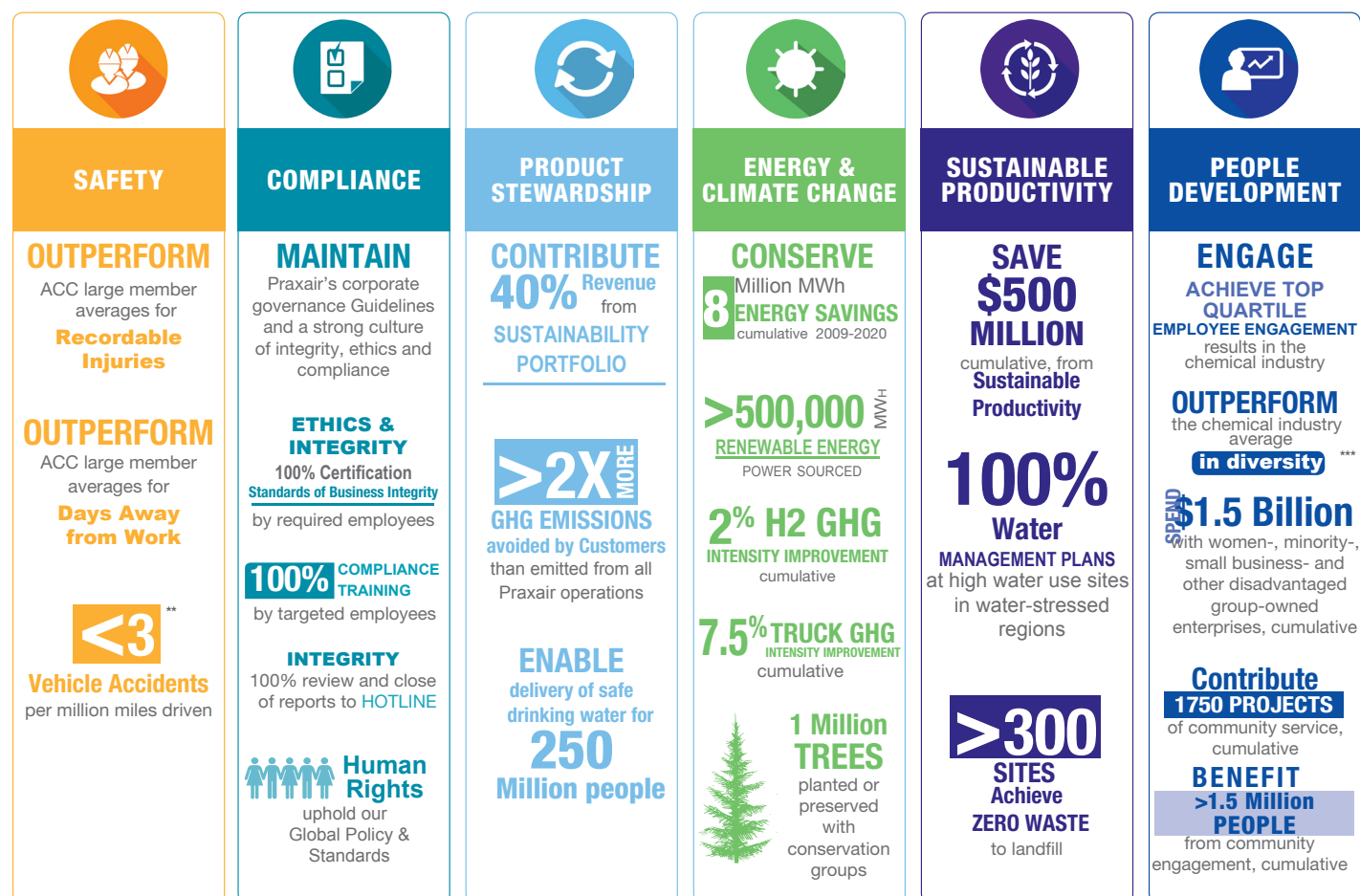
Praxair is committed to high-quality growth and expects continued strong cash flow generation to fund future growth investments and increased dividends. Praxair embraces a high-performance culture that has taken years to build, and the company is proud of its strong track record of long-term sustainable value creation.

## Praxair's SD 2020 Targets

The target-development process, over 2014-2015, represented a significant opportunity to review and build on the experience of the previous six-year targets. It also allowed us to look forward and respond to new and emerging business and sustainability challenges and opportunities, both within the organization and externally. The target-setting process is part of Praxair's SDMS and follows the established SDMA process.

Praxair's SD 2020 Targets identify six Priority Factors (PFs) and 24 KPIs, each with performance targets. Most of the targets run 2016-2020 and are metric-based. They will help drive Praxair's culture and support both short- and long-term value and business sustainability. They are consistent with the 2015 targets and show learning and continuous improvement, but are broader in scope. They are designed to be impactful, scalable, replicable and in many cases to add social, economic or environmental value beyond "business-as-usual." The final SD 2020 Targets were accepted by Praxair's Executive Leadership Team and subsequently accepted and endorsed by Praxair's Board of Directors Committee on Technology, Safety and Sustainability.

## SUSTAINABLE DEVELOPMENT 2020 TARGETS\*



\* All targets run 2016-2020 unless otherwise noted

\*\* Target applies to employees and contract drivers

\*\*\* As per benchmark indexes such as DiversityInc®

## Determining Priorities: The Sustainable Development Materiality Assessment (SDMA)\*

Praxair's SDMA is the first step in a structured process for our SDMS. The process is led by Praxair's vice president, Sustainable Development, who is also responsible for ensuring the fair, reasonable and transparent representation of different stakeholder perspectives and, if necessary, arbitrating between them.

Praxair's SDMA process follows the GRI G4 Guidelines and AA 1000AS (2008) principles of inclusivity, materiality and responsiveness and was externally assured against AA 1000AS (see page 42). Praxair defines a matter as a key issue or Priority Factor if, in the views of the organization and our key stakeholders, it is important to long-term sustainable success; reflects the company's economic, environmental and social risks and opportunities; and could substantively affect the company's ability to create value in the short, medium or long term. The structured SDMA process is described in the following steps.

\* This section responds to GRI G4-18

\*\* This section responds to GRI G4-25

## 1. Assemble a broad universe of externally perceived sustainability risks or opportunities.\*\*

To determine key issues for 2020, Praxair reviewed its 2014 PFs and KPIs against relevant sets of international recommendations, standards and guidelines that together represent the perspectives of our key external stakeholders: customers, shareholders, suppliers and communities. Two new perspectives were added in 2015: those of the UN Sustainable Development Goals (UN SDGs) and those of focus groups of Praxair Socially Responsible Investors (SRIs).

External Stakeholders Represented	Convening Organization	Document / Perspective
Chemical industry: customers, suppliers, peer companies	American Chemistry Council (ACC)	Responsible Care Management System® (RCMS®) initiative
Investors, customers with concerns about climate change and (from 2016) water	Carbon Disclosure Project (CDP)	Water, GHG and supply chain questionnaires
Investors and SRIs	RobecoSAM	Dow Jones Sustainability Index (DJSI) sustainability assessment
Investors and SRIs	Sustainability Accounting Standards Board (SASB), 2014	Exposure Draft for the Resource Transformation Sector: Chemicals
Investors and SRIs (GHG)	Climate Disclosure Standards Board (CDSB)	Climate Change Reporting Framework (CCRF)
Investors and SRIs	International Integrated Reporting Council	<IR> Framework
Five stakeholder groups: business associations, labor representatives, civil society organizations, information users, experts from around the world	Global Reporting Initiative (GRI)	GRI G4 GRI <a href="#">Sustainability Topics for Sectors: what do stakeholders want to know</a> (metrics for chemical companies)
<b>New in 2015</b>		
Government and broad multi-stakeholder groups from around the world	United Nations	Sustainable Development Goals (UN SDGs)
Praxair SRIs	Praxair	Convened a face-to-face meeting with a group of several SRI company representatives, and a few more subsequently, to hear feedback on the draft SD 2020 Targets

## 2. Define how Praxair determines materiality.\*\*

Priorities are determined annually from a review of key internal and external issues. Internally, we review Praxair's vision, mission, core values, strategy and growth drivers; the company's annual list of business risks as itemized in our Annual Report; and our commitment to sustainable development. In 2015, the Board identified seven areas of non-financial performance that merit inclusion in executive variable compensation. These include six that are material to Praxair's sustainable development strategy and ensure that employees have incentives to promote these activities: Safety; Compliance; Strategy; Environmental Performance and Sustainability; Productivity; and People Development. See *Alignment with Compensation* on page 15.

Praxair's historical business strategy has been to focus on our core business model of selling gas and increasing density in our key targeted geographies; and providing an integrated supply; and on our traditional growth drivers of energy, environment and emerging economies. In energy markets, we continue to see growth opportunities in refining and petrochemicals. We are intensifying efforts to grow more resilient end-markets such as healthcare, food and beverage, aerospace, specialty gases and environmental applications. We are confident in our ability to generate productivity improvements well into the future. Praxair's SD 2020 Targets reflect these strategic adjustments, e.g., in expanding the scope of our Eco Portfolio to a Sustainability Portfolio and including applications in healthcare and food and beverage among our growth targets.

## 3. Risk Identification\*\*

Praxair's annual SDMA complements the risk items identified in the Annual Report. Whereas the Annual Report considers the financial aspects of Praxair's business, the SDMA considers the non-financial aspects. Praxair's 2015 Annual Report, Item 1A, identifies risks that the company feels could materially affect the company's future operations and financial performance. Several of these are directly relevant to Praxair's non-financial and sustainable development priorities, including:

- Cost and availability of raw materials and energy
- Government regulations in areas such as environmental protection (including GHG regulations), safety, anti-trust matters and global anti-bribery laws, etc).
- Catastrophic events, including extreme weather
- Retaining qualified personnel
- Technological advances
- Operational risks, including safety and environmental risks

Internally, Praxair gathers employee views from periodic employee surveys (see the *Stakeholder Engagement* section). In addition, the business Sustainable Development coordinators act as the channel for information to pass between business-level employees and corporate. Details on employee sustainable development engagement and any concerns are shared in their monthly meetings with the vice president, Sustainable Development. During 2015, as the SD 2020 Targets were being developed, there were several requests from employees and the businesses to understand what portion they should contribute to global targets, such as the target

to grow the Sustainability Portfolio and the target for community engagement projects. Updates were regularly issued through this channel to the Sustainable Development coordinators and through them to the businesses.

In addition, in 2015, the rollout of SD 101 training helped communicate sustainable development to the entire company; built capacity and understanding at all levels; and allowed employees to be informed contributors to the development and execution of Praxair's SD 2020 Targets.

Externally and as a matter of regular business, Praxair reviews issues of concern to customers, suppliers, investors and communities, as well as area of concern to our industry, regulators and social and environmental action groups. This process was described in the *Stakeholder Engagement* section. New issues were fed into the 2020 target-setting exercise.

Additional qualitative stakeholder engagement activity was conducted at corporate headquarters and in certain regional business units. In 2014, two Praxair businesses (Mexico and South America) conducted focus group meetings with selected suppliers and employees. Mexico conducted an employee meeting and a review of inbound Corporate Social Responsibility (CSR) surveys. Results of these initiatives informed the issues reported in their regional sustainability reports and were fed into the corporate materiality assessment. In 2015, Praxair conducted focus group meetings with SRIs to obtain their input into the SD 2020 Targets.

## 3. Systematic evaluation of issues to determine materiality.\*\*

Potential issues were weighed against our business priorities and grouped, promoted or demoted using a systematic process illustrated in the diagram below:



*Based on Lydenberg, Steve; Jean Rogers; David Wood: From Transparency to Performance: Industry-Based Sustainability Reporting on Key Issues. The Hauser Center at Harvard University, October 2010, p 19*

Stakeholder issues that emerged from this process were mapped to the economic (including governance), environmental and social components of sustainable development.

\* This section responds to GRI G4-18

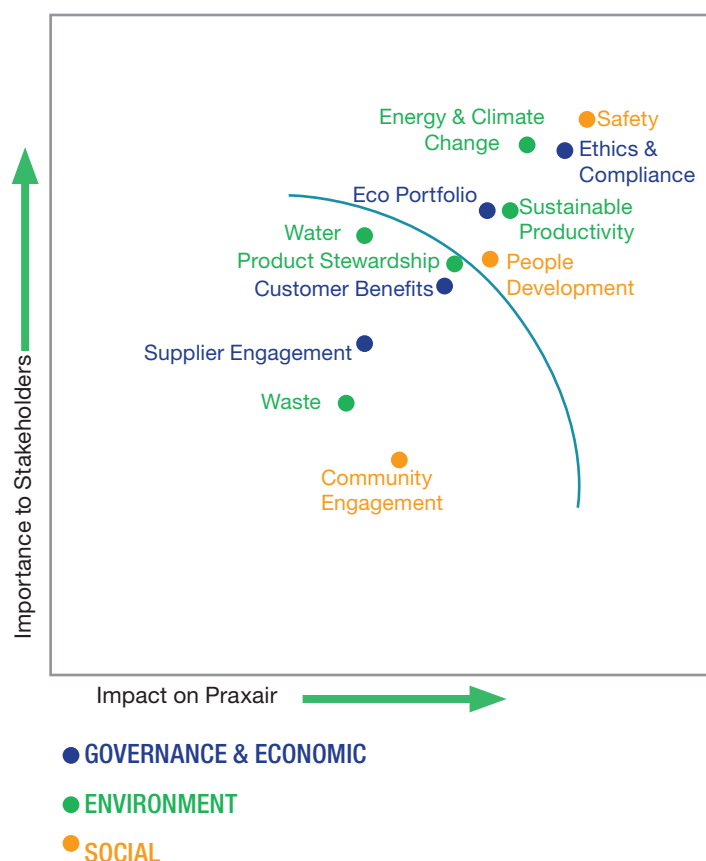
\*\* This section responds to GRI G4-19, G4-20 and G-21



## 4. Select Priority Factors (PFs) and Key Performance Indicators (KPIs).\*\*

Information from the above process was then distilled into 24 potentially significant KPIs for both internal and external audiences.

- For external perspectives, the exercise was coordinated by the vice president, Sustainable Development, with several members of the Corporate SD Council. This group ranked external priorities based on the materials reviewed. Attention was paid to ensuring that the process of selection was inclusive of all perspectives presented and responsive to them, and material or relevant to Praxair's business. The process involved consolidating issues, promoting and demoting others, and seeking to create a finite and credible set of indicators.
- For internal stakeholders, a survey tool was developed for Praxair managers from geographies worldwide, to rank the issues based on importance to Praxair.
- The two lists were combined into the scatter diagram below, to show the relative importance internally and externally of the top 12 items.



The top six items in this chart became Praxair's PFs. The PFs were very similar to those from the 2015 targets.

\* This section responds to GRI G4-18

\*\* This section responds to GRI G4-19, G4-20 and G-21

## 5. Define programs and targets.

KPIs were then developed for each PF and these are provided below

### Priority Factors and Related KPI Areas



#### Safety

Recordable Injuries  
Lost Workday Cases  
Vehicle Accidents



#### Compliance

Governance  
Ethics  
Integrity  
Accountability  
Human Rights



#### Product Stewardship

Sustainability Portfolio  
Customer Benefits – GHG  
Customer Benefits – water



#### Energy & Climate Change

Energy Efficiency  
Renewable Energy  
Direct GHG Emissions Intensity  
Stakeholder Environmental Engagement



#### Sustainable Productivity

Energy Savings  
Water Management  
Zero Waste



#### People Development

Employee Engagement  
Diversity  
Procurement Spend with Minority Suppliers  
Community Engagement

Each of the KPIs was used to confirm or create targets to manage and improve performance. Targets were created on a five-year cycle (2016-2020). Targets and performance are available on our website: [www.praxair.com](http://www.praxair.com).

A crucial step in setting targets was to engage the businesses and functions responsible for their implementation. This direct engagement will be important to the achievement of these targets. It provided an opportunity for all relevant parties to share their views, present challenges and ideas for improvement and endorse the final target in all its detail. A standard process was followed for all targets: managers from each business or function that would be responsible for the implementation of each target worked on the details of their target with all relevant stakeholders, presented it to their business president or functional vice president and informed the corporate team, who presented it to the senior vice president. All targets were benchmarked against best practice and peers. A Standard Operating Procedure (SOP) was developed for each target that documents methodology, assumptions and business plans.

For example, the ASU energy target, to conserve 8 million MWh cumulatively 2009-2020, reflects a continuation of the past target. It was developed by the corporate energy team, obtained comments, feedback and ultimately approval from each of the businesses and then their corporate vice president. The target for fewer than three accidents per million miles driven by Praxair or contractor drivers was an existing internal target in the SH&E organization but is newly added to the SD 2020 Targets. It was set and maintained in the global SH&E organization and approved in all business units.

Once drafted, the set of targets were re-reviewed internally to confirm that they were complete, as well as competitive with our peers and industry leaders. There were several opportunities for continuous improvement. For example, Praxair retained several targets, which effectively extended our commitment for an

additional 10 years. The GHG emissions intensity reduction target in distribution was retained at 1.5 percent per year, or 15 percent GHG intensity improvement over 10 years. The commitment to \$500 million in savings from sustainable productivity will represent \$1 billion over 10 years. We retained Praxair's commitment to a 0.4 percent GHG intensity improvement per year (4 percent over 10 years) and broadened it to include all HyCO facilities. We also introduced improvements to specific targets. For example, we expanded our 2015 target that 30 percent of Praxair revenue should come from environmentally beneficial customer applications to a target that 40 percent of 2020 revenue should come from applications that bring environmental and/or social benefits.

To be more comprehensive, we developed targets in new areas such as safety and diversity. In several areas, we sought to establish or maintain industry leadership. For example, in the past, our safety target for Recordable Injury Rate was a number: 0.52 against a target of 0.6 per 200,000 hours worked, but only a specialist would understand what those numbers mean. Our SD 2020 Target was formulated to exceed our sector best-practice average – the ACC's large member average for recordable injuries. We did the same for our targets for employee engagement and diversity, aiming in both cases to perform at industry-leading levels. We will still report the actual result, but the target is something that has clear meaning to everyone.

Target-setting also provided an opportunity for innovation and leadership. For example, we mapped the SD 2020 Targets against the newly issued UN SDGs, which lay out challenges for all of society, to confirm that achieving Praxair's SD 2020 Targets would contribute to solving major global challenges. This is described in the *Delivering Sustainable Value* section.

External engagement provided an opportunity to challenge our assumptions and demonstrate responsiveness to external concerns. Key members of the sustainability community and SRIs were eager to see commitments in these areas, and Praxair accepted that these issues merited a target.

- **Renewable energy:** Praxair believes that the most effective action we can take to reduce our energy use is energy efficiency, and we have issued and updated a White Paper on this matter. External SRI investors at our face-to-face meeting remained eager to see Praxair adopt a target for renewable energy sourcing, which we ultimately did. We agree with the SRI community that the use of renewable energy is an important component of responding to climate change concerns and enhances energy security. A renewable energy target addressed direct stakeholder requests and also allowed Praxair to show support of an SDG target; see page 40.
- **Water management:** While concerns about water quality and water availability create markets for Praxair, water has not been identified as a material risk in Praxair's annual enterprise risk assessments. Although Praxair is an industrial-level water user, most of the water used is cooling water, which is often recycled multiple times before being discharged into the body of water it came from. The only additives to the water are the small amount of chemicals used to improve the water's recyclability. In addition, water is not a key cost in any Praxair location. Nevertheless, in response to consistent external interest in this

issue and in recognition of emerging water stresses in areas like California, Praxair began measuring water savings as part of sustainable productivity, and we added a water target to Praxair's SD 2020 Targets: to have water management plans in place at 100 percent of sites that are high water users in areas of water stress.

Other changes made from the 2015 targets:

- Two targets were moved to different PF themes: Zero Waste was moved from People Development into Sustainable Productivity and tree planting with conservation organizations was moved from Employee and Stakeholder Engagement to Energy and Climate Change. Reporting in these items remains unchanged.
- Zero Waste remains a metric that is principally about employee environmental engagement. However it also has an impact on embedding a culture of resource productivity and circular economy thinking in all levels of the organization; thus Zero Waste fits better in the Sustainable Productivity theme for the SD 2020 Targets.
- Tree planting remains a metric about partnerships with environmental organizations and contributing to community, environmental and economic resilience where trees are planted. Because tree planting is commonly connected with environmental stewardship and helping mitigate climate change, it was moved to Energy and Climate Change.
- Two PFs were renamed and additional targets developed:
  - "Governance, ethics and compliance" was renamed "Compliance" and targets developed for compliance, ethics, integrity and human rights. Compliance has always been a top priority at Praxair. Human Rights is an emerging issue of concern for external stakeholders, including investors and governments.
  - "Eco Portfolio" was renamed "Product Stewardship." The new term is broader and captures Praxair's activity over the life cycle of our products, from sourcing and development to innovation and growth.

## 6. Review and improve.

In line with the SDMS review, the full set of potentially significant sustainability issues is annually reviewed by the sustainable development practitioners at Praxair and by colleagues that help respond to these issues, and the priority list is confirmed/modified. The set of KPIs is reviewed each year along with performance, and adjustments may be made at that time if needed. Absent major business or external changes, we anticipate that our next formal priority review will be conducted early in 2018.

## 7. Communicate.

For performance management purposes, the results of Praxair's SDMA and related performance against targets are communicated internally through the Sustainable Development Council and global Sustainable Development coordinators; and to the OOC and the Board Committee on Technology, Safety and Sustainability. For external Praxair stakeholders, they are published at least annually in Praxair's annual *Sustainable Value Report* and on our website: [www.praxair.com](http://www.praxair.com).

<sup>\*</sup> This section responds to GRI G4-18

# DELIVERING SUSTAINABLE VALUE

Praxair's SD 2020 Targets were designed to deliver on Praxair's mission; to help drive positive business and contribute to solving some of the world's greatest challenges; and to show how, and how much, Praxair creates long-term business value in the six capitals of Integrated Reporting: natural, human, intellectual, social, manufactured and relationship.

## Praxair's SD 2020 Targets and the UN Sustainable Development Goals (SDGs)

On September 25, 2015, governments around the world officially adopted a set of global goals to end poverty, protect the planet and ensure prosperity for all, by 2030. These are called the Sustainable Development Goals (SDGs). There are 17 global goals and 169 targets. They include goals such as ending poverty (SDG 1) and hunger (SDG 2); promoting good health and wellbeing (SDG 3); supporting decent work and economic growth (SDG 8); responsible production and consumption (SDG 12); and building peace, justice and strong institutions (SDG 16).



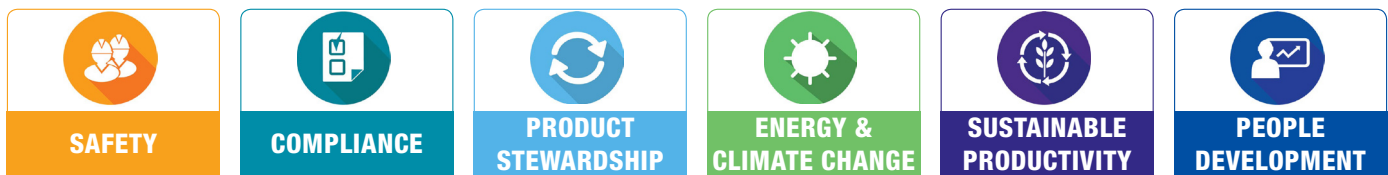
This agenda cannot be achieved by governments and individuals alone. SD 2020 Targets will guide our activity in these areas for the next five years, and they will also help us contribute to solving some of the global challenges laid out in the SDGs. We can show how what we do helps to meet global challenges by lining up our SD 2020 PFs with the SDGs.

Overall, Praxair actions can contribute to the SDGs along our whole value chain, both by increasing our positive impact and minimizing potential negative impacts. For example, Praxair's target to build capacity in minority suppliers will contribute to SDG goal 8. With employees, we will maintain strong global standards of corporate governance, contributing to SDG 16. In operations, we can show how our commitment to sourcing >500,000 MWh RE contributes to SDG 7; and how rigorous resource efficiency will save more than 8MM MWh in energy savings - and >5MM MT CO<sub>2</sub> - contributing to SDG 12. In distribution, our target to maintain fewer than 3 accidents per million miles can contribute to SDG 3. And in innovation our target to grow our sustainability portfolio can, among other benefits, enable a quarter billion people to obtain clean safe drinking water and contribute to SDG 9. And our target to provide opportunities for decent work and economic growth for our employees and in our communities, can contribute to SDG 8.

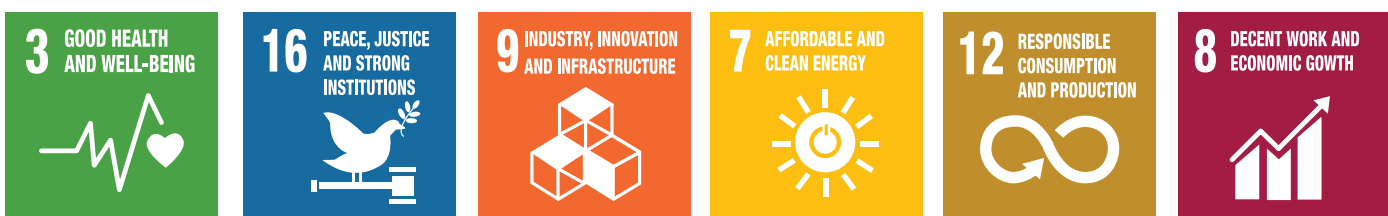
The World Business Council on Sustainable Development (WBCSD) offers definitions for [Measuring Socio-economic impact: A guide for business](#). Their typology identifies actions from inputs (e.g. money spent) through activities (e.g. products or services, training provided) to outputs (e.g. volumes sold, people reached), outcomes (e.g. changes in the lives of the target population) and impacts (i.e. goal-level changes in the lives of the target population or future generations, (e.g. health status, income level, educational level)). Whereas inputs, activities and outputs are clearly within the scope of the firm, the company's influence becomes less direct for outcomes and quite indirect for impacts. Impacts may be what matter most for society and are clearly the aspiration of the UNSDGs, but they can take years to materialize and are difficult to measure and attribute to any one organization. Praxair used this typology to show how Praxair's SD 2020 Targets can help contribute to the UN SDGs, i.e. can help deliver relevant socio-economic impact.

The following pages provide examples of how Praxair targets create positive sustainable development impact and value, and support the SDGs:

## Praxair Non-Financial Priority Factors



## UN Sustainable Development Goals (SDGs)



# SAFETY



Praxair Goal SAFETY	2020 TARGET	SDG Target	SDG Goal
	 <b>Vehicle Accidents</b> per million miles driven (employees and contractors)	By 2020, halve the number of global deaths and injuries from road traffic accidents	<b>3</b> GOOD HEALTH AND WELL-BEING 

## Leading by Example



INPUTS	ACTIVITIES	OUTPUTS	OUTCOMES	IMPACTS
Safety: a core Praxair company value and top priority	Continuous Board and executive review  Embedded safety into Praxair's culture, strategy and performance  Implemented comprehensive set of KPIs and targets, training and technology investment implemented for PX and contract drivers	100% driver safety training, average 40 hours/yr  Global technology investment inside and outside trucks to promote safety  Outreach and training to local communities – emergency responders, schools, driver families	2015 22% reduction in Vehicle Accident rate vs. 2014  >90 fewer vehicle accidents  Fewer truck GHG emissions: >15% intensity improvement, 2009 – 2015  Reduced claim expense on 1st party worker's comp. and 3rd party auto liability incurred losses	Fewer human injuries from accidents  Lower economic and health costs for drivers, their families and communities  Better air quality and related human and community health in regions where Praxair works and drives



# SUSTAINABLE PRODUCTIVITY

Praxair Goal SUSTAINABLE PRODUCTIVITY	2020 TARGET	SDG Target	SDG Goal
	<b>SAVE \$500 Million</b> cumulative, from <b>Sustainable Productivity</b>	By 2030, achieve the sustainable management and efficient use of natural resources	<b>12</b> RESPONSIBLE CONSUMPTION AND PRODUCTION 

## Leading by Example



INPUTS	ACTIVITIES	OUTPUTS	OUTCOMES	IMPACTS
<p>Mature productivity organization</p> <p>Business model consistent with resource productivity</p>	<p>Identify, measure and aggregate natural resource conservation opportunities (air, water and solid wastes and GHG) for productivity</p> <p>Calculated environmental savings, \$ savings and incremental value</p>	<p>Increased productivity projects 7% year-over-year</p> <p>&gt;\$117 MM sustainable productivity savings</p> <p>2,200 projects that avoided 393,000 MT CO<sub>2</sub>e, &gt;215 MM gallons water</p>	<p>2015</p> <p>&gt;17% productivity was SD</p> <p>\$20 MM incremental revenue</p> <p>50% replication rates vs. 30% general productivity</p> <p>Contributed to Praxair's industry-leading operating margin of 23.1% and 12.6% return on capital</p> <p>Competitive advantage: has become part of Praxair's culture and intellectual property</p>	<p>Local community health: 8,800 projects avoided &gt;2MM MT CO<sub>2</sub>e, 1B gallons of water, &gt;500MM lbs waste in our communities</p> <p>Scalable impact: Represents a projected \$1 billion gross sustainable productivity savings 2009-2020, with related community environmental benefits</p>

# PRODUCT STEWARDSHIP



Praxair Goal PRODUCT STEWARDSHIP	2020 TARGET	SDG Target	SDG Goal
	<b>ENABLE</b> delivery of safe drinking water for <b>250 Million people</b>	Develop quality, reliable, sustainable and resilient infrastructure to support economic development and human well-being	<b>9</b> INDUSTRY, INNOVATION AND INFRASTRUCTURE 

## Leading by Example



INPUTS	ACTIVITIES	OUTPUTS	OUTCOMES	IMPACTS
Praxair gases offer a wide range of applications for drinking water, wastewater and process water, all while maximizing treatment capacity, reducing VOC emissions and odors, improving safety and reducing costs	O2 for wastewater treatment reduces VOCs CO2 can reduce pH in water and wastewater O3/O2 as environmentally preferable water disinfectant CO2 for desalination O3 for water quality improvement Offered these gases to market	VOC emissions reductions: US, EU Reduce pH in water and wastewater: global Water disinfection: U.S., S. America, Asia, EU Desalination in Spain, US Water quality improvement: global	2015 Enabled Praxair customers to provide clean drinking water to 125 million people	Scalable: Commitment to bring clean drinking water to 250MM people: 3% of the projected global population in 2020

# PEOPLE DEVELOPMENT



Praxair Goal SUPPLIERS	2020 TARGET	SDG Target	SDG Goal
	<b>\$1.5 Billion</b> with women-, minority-, small business- and other disadvantaged group-owned enterprises, cumulative	Encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	<b>8</b> DECENT WORK AND ECONOMIC GROWTH 

## Leading by Example




INPUTS	ACTIVITIES	OUTPUTS	OUTCOMES	IMPACTS
<p>Global procurement and supply chain programs are committed to sourcing responsibly and supporting diverse suppliers</p> <p>Multi-tier diverse spend reporting program; encouraging multiple tiers in supply chain to incorporate the use of and report spend with diverse suppliers</p>	<p>Supply Chain Finance program Launched Supply Chain in 2015</p> <p>Supplier capacity building and productivity initiatives</p>	<p>Participants can receive accelerated payments for invoices outstanding; take advantage of PX competitive interest rates</p> <p>Prime suppliers encouraged to incorporate the use of diverse suppliers provides additional economic growth opportunities for diverse and local businesses</p>	<p>2015 40 diverse suppliers took advantage of the supply chain financing program totaling \$30MM in procurement spend</p>	<p>Supports economic growth opportunities</p> <p>Suppliers achieved:</p> <ul style="list-style-type: none"> <li>Enhanced working capital from accelerated payments</li> <li>Enhanced borrowing capacity for business expansion</li> <li>Self-sufficiency; less reliance on external sources of capital to operate their businesses</li> </ul> <p>Supports and creates jobs</p>



# ENERGY & CLIMATE CHANGE



Praxair Goal ENERGY & CLIMATE	2020 TARGET	SDG Target	SDG Goal
	<b>&gt;500,000<sup>MW<sup>H</sup></sup></b> <b>RENEWABLE ENERGY</b> POWER SOURCED	By 2030, increase substantially the share of renewable energy in the global energy mix	<b>7</b> AFFORDABLE AND CLEAN ENERGY 

## Leading by Example



INPUTS	ACTIVITIES	OUTPUTS	OUTCOMES	IMPACTS
Continuous efforts to reduce energy use and GHG footprint and grow applications to support renewable energy (RE)	Helped utility providers to meet their renewable energy goals  Sourced Hydro from Niagara, NY and Brazil  Sought additional RE opportunities  Promoted applications for RE	2009-2015 cumulative savings of 2.1 MM MT CO <sub>2</sub> e from energy efficiency in operations  New sources of solar and wind power in India, Mexico, U.S.  A leading provider of green H <sub>2</sub> for fuel cells (USA)	>300,000 MT CO <sub>2</sub> e avoided from RE sourcing  New R&D for PV markets	Environmental and social benefits:  Equivalent to >30,000 home electricity use for a year , OR  114MW nameplate coal generation replaced, OR  190MW nameplate renewable energy generation sources



# PEOPLE DEVELOPMENT



Praxair Goal PEOPLE	2020 TARGET	SDG Target	SDG Goal
	<p>BENEFIT</p> <p><b>1.5 MILLION PEOPLE</b> FROM COMMUNITY ENGAGEMENT</p> <p>(cumulative)</p>	<p>By 2030, achieve full and productive employment and decent work for all women and men</p>	<p><b>8</b> DECENT WORK AND ECONOMIC GROWTH</p> 

## Leading by Example



INPUTS	ACTIVITIES	OUTPUTS	OUTCOMES	IMPACTS
<p>Praxair Global Giving Program: &gt;\$300,000 to sponsor welding training in the local community in Louisiana to match needs of the state and Praxair customers</p> <p>Praxair businesses: in kind support: equipment, professional development, interview skills</p>	<p>Partnered with Louisiana's Community &amp; Technical Colleges System (LCTCS) to sponsor welding training</p> <p>Provided professional development and resume coaching</p> <p>Hosted career events with industry + hiring managers for career opportunities</p>	<p>Collaborations with three colleges (six classes)</p> <p>87 graduates trained in four cutting processes and four welding processes</p> <p>Professional development and equipment for instructors at each of three colleges</p>	<p>2015</p> <p>&gt;131 welding credentials attained</p> <p>~50% students obtained new fulltime jobs, several with Praxair customers, one with Praxair; typical starting salary \$40k</p> <p>Inaugural LCTCS "Investor Impact Award" to Praxair</p>	<p>&gt;\$12 MM estimated increase in potential earnings over the new welders' lifetimes</p> <p>Improved quality of life for graduates' families</p> <p>Economic benefits to state</p> <p>Replicable: Praxair commits to maintain program and replicate elsewhere</p>



10 East 38<sup>th</sup> Street, 11<sup>th</sup> Floor  
New York, NY 10016  
646-499-0083

[www.CarbonVerificationService.com](http://www.CarbonVerificationService.com)

June 27, 2016

**To the Management of Praxair, Inc.**

Carbon Verification Service, LLC was engaged by Praxair, Inc. to provide assurance of its global 2015 Key Performance Indicators (KPI) and other social metrics. 2015 was the sixth consecutive year that Carbon Verification Service was retained by Praxair to verify its KPIs. Upon being retained, Carbon Verification Service conducted a conflict of interest review to insure that its review would be free of bias and would be done on an independent basis. Carbon Verification Service provides only verification and auditing services to its clients, including Praxair, to avoid conflict of interest concerns. Carbon Verification Service is not owned or operated by any other entity.

The objective of the verification was to provide limited assurance of the reported KPI values and to assess the accuracy, completeness, relevance, consistency and transparency of Praxair's information and assertions. Carbon Verification Service assessed conformance of Praxair's GHG emission inventory with The Greenhouse Gas Protocol. The verification protocol employed for verification of Praxair's 2015 GHG emissions was the AccountAbility Assurance Standard (AA1000AS 2008). Consensus protocols for the verification of the KPI metrics, other than GHG emissions, do not currently exist. Carbon Verification Service utilized the same verification principles prescribed by AA1000AS (2008) to guide the verification of this data.

Carbon Verification Service, LLC reviewed selected quantitative KPIs. The verification was based on site visits to Danbury, CT, Deer Park, TX, St. Charles, LA and Ontario, CA. Review of documentation from seven other locations was also performed. We did not review all information and supporting documentation associated with the KPIs for all of Praxair's global locations and facilities.

Praxair management is responsible for the reported KPIs and for the process of assembling the data upon which the reported KPI values are based.

Based upon the verification work performed from April through June 2015, there is no evidence that Praxair's KPI data assertions, which appear in the table below, are not materially correct and are not a fair representation of data and information and have not been prepared in accordance with accepted standards and practice.

For Carbon Verification Service, LLC

A handwritten signature in black ink, appearing to read "James J. Groome".

James J. Groome  
President

\* For the external audit of the SDMA against AA1000AS, please see the 2015 SVR Annex.



10 East 38<sup>th</sup> Street, 11<sup>th</sup> Floor  
New York, NY 10016  
646-499-0083

[www.CarbonVerificationService.com](http://www.CarbonVerificationService.com)

## PRAXAIR'S ASSERTIONS

Praxair reported the following KPI values:

Metric	2015 Value	Units of Measure
GHG Emissions Scope 1	8,199,000	Metric Tons CO <sub>2</sub> e
GHG Emissions Scope 2	12,640,000	Metric Tons CO <sub>2</sub> e
Proportion of reported Scope 1 and 2 emissions verified	100	%
GHG Emissions Scope 3 - Contractor Driving	260,000	Metric Tons CO <sub>2</sub> e
Electricity Consumption	22,960,000	MWh
Natural Gas Consumption	2,796,000	MWh
Diesel/Gas Oil	354,000	MWh
Steam	806,000	MWh
Distillate Fuel Oil #2	5,000	MWh
Water Use (not including once-through cooling water)	58,000,000	Cubic meters
NO <sub>x</sub> Emissions	1,690	Metric Tons
SO <sub>x</sub> Emissions	29	Metric Tons
VOCs	456	Metric tons
Zero Landfill	112,568,000	Lbs. of waste not landfilled
Chemical Oxygen Demand	817	Metric Tons
Lost Time Injury Frequency Rate	0.042	Lost time injuries per 200,000 hours worked
Lost Time Injury Frequency Rate	0.211	Lost time injuries per 1,000,000 hours worked
Occupational Illness Frequency Rate	0.003	Occupational Illness Cases per 200,000 hours worked
Occupational Illness Frequency Rate	0.015	Occupational Illness Cases per 1,000,000 hours worked
Contractor Lost Time Injury Frequency Rate	0.0	Lost time injuries per 200,000 hours worked
Community Engagement: cash raised or donated by employees and facilities	Approx. 776,000	USD
Year-over-Year Change - Scope 2 Emissions	1	%



© Copyright 2016 Praxair Technology, Inc.  
All rights reserved.

Praxair, and the Flowing Airstream design and Making our planet more productive, are trademarks or registered trademarks of Praxair Technology, Inc. in the United States and/or other countries. Other trademarks used herein are the registered trademarks of their respective owners.

Praxair, Inc.  
39 Old Ridgebury Road  
Danbury, CT 06810-5113  
USA

[www.praxair.com](http://www.praxair.com)  
[info@praxair.com](mailto:info@praxair.com)

The information contained herein is offered for use by technically qualified personnel at their discretion and risk without warranty of any kind.

07-16

P-15-756