



global

Corporate Responsibility Report
of Messer 2019

Messer key figures at a glance

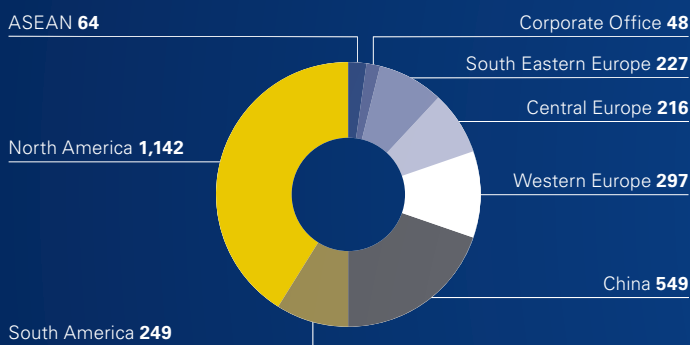
As of 31.12.2019

		Messer Group	Messer Industries*	Total**
Net sales	in million Euro	1,104	1,688	2,792
EBITDA	in million Euro	322	373	695
EBITDA margin	in per cent	29	22	25
Investments	in million Euro	178	249	427
Employees	Contractual employments	5,116	5,821	10,937

* Messer Industries GmbH is an at-equity investment of Messer Group GmbH; the financial year commences 1 March 2019.

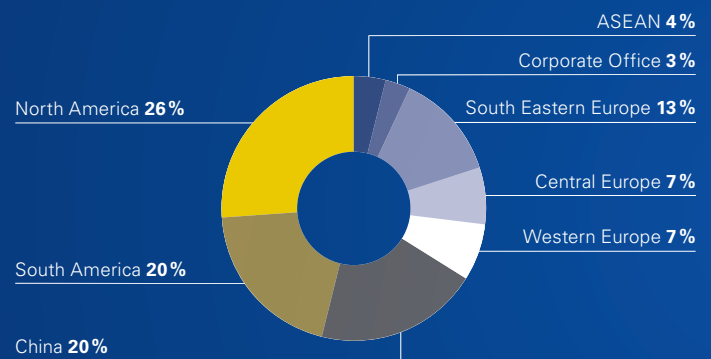
Net sales (consolidated) by region**

in million Euro



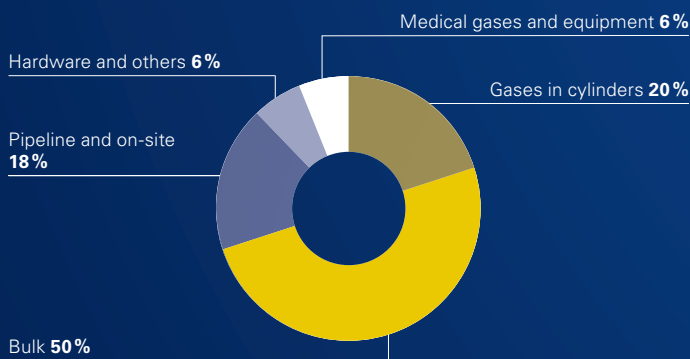
Numbers of employees by region**

in per cent



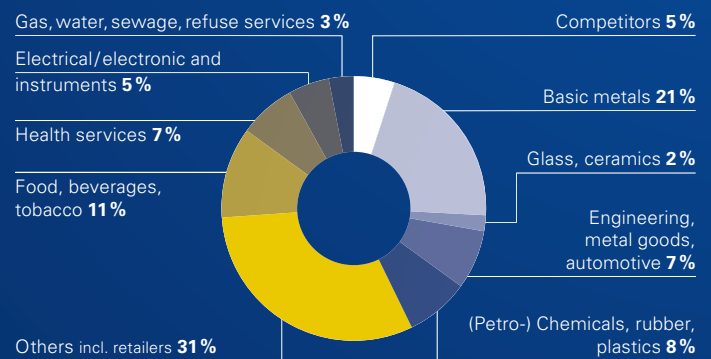
Net sales by product groups**

in per cent



Net sales by industry segments**

in per cent



** Messer Total is a purely mathematical sum of Messer Group and Messer Industries that includes 100% of the at-equity investment in Messer Industries.

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global

With Messer's acquisition of the lion's share of Linde's gases business in North America along with individual Linde and Praxair operations in South America, 2019 marked a milestone in our development as a new global player. As a result, we are now represented in the relevant markets of Europe, Asia and the Americas. The term "global" also applies to our operating philosophy in the sense of "comprehensive and far-reaching." We focus on sustainable business practices, safety and health, team spirit, the environmental and climate protection, and corporate and social responsibility.

We act globally, with prudence and with an open-minded view of the world.



In 2015, under the aegis of the United Nations, the international community adopted Agenda 2030. It lays out 17 global goals together with the call to implement measures to achieve those goals. In essence, they seek to permanently preserve the natural basis of human existence and to enable people everywhere to live in dignity. Messer aligns its business activities with the 17 UN Sustainability Goals, which also form, in turn, the substantive framework of this Sustainability Report.

Strategic integration of Corporate Responsibility

Our sustainable action in economic and social contexts derives not only from our own objectives, traditions and innovations but also from overarching aspirations. The core fields are sustainable business, corporate responsibility, our customers and the markets in which we operate, environmental and climate protection, safety, employees and society. We have set measurable objectives in a wide range of business areas, in order to document

improvements and growth. We are publishing those objectives in the present Sustainability Report for the financial year 2019. The key indicators are transparent and comparable, thereby enabling our stakeholders to follow our development. In so doing, we help our customers verify their own activities and supply chains and ensure their sustainability.

Sustainability commitments

Stefan Messer, owner and Chief Executive Officer: “We fulfill our social responsibility to our employees and to society in a number of different areas. Among other things, we are committed to environmental and climate protection through the continuous improvement of our own processes. Moreover, we also focus on developing technologies that make our customers’ production methods more efficient and eco-friendly. Messer is represented in major markets of the world: We respect the cultural differences and laws of the regions where we do business, contributing to communities and education systems there through a wide range of support activities. Mutual trust and respect for the diversity of people, open communication in collaboration, and the development of our employees are steadfast values that form the unalterable basis of our interaction with one another.”



Dr. Uwe Bechtolf, Chief Financial Officer: “We undertake to follow sustainable business practices and safeguard our autonomy and independence through, among other things, far-sighted investment. In so doing, we provide long-term security to our employees and our business and financial partners in our collaboration with them. Vis-à-vis our stakeholders, we act with the utmost transparency. We view corporate responsibility as a business obligation with strategic utility, whereby we establish well-defined key indicators for control purposes, have implemented them in our management organization, and follow GRI (Global Reporting Initiative) standards in our sustainability reporting. We comply with a specified Code of Cooperation and Conduct toward all of our stakeholders.”



Ernst Bode, Chief Operating Officer Europe: “Our goal is to become one of the best organized companies in our industry. Capital and financial resources are important, but people, knowledge, leadership quality and passion are the ingredients of long-term success. With that in mind, our activities are focused on the safety of our customers, employees and partner companies as well as the safety of the equipment we install and that of our distribution channels. Our continuous efforts to achieve sustainable improvements in the efficiency of our equipment and logistics processes and the resulting conservation of resources are no less part of our core brand identity than reliable product supply at fair prices and our collaborative relationship with our clientele. Product purity and a documented supply chain are second nature to Messer. In our markets, we act mindfully of a sustainable future, in order to ensure further growth together with our customers over the long term. Compliance with all applicable laws and regulations is a matter of course for us worldwide, as is protection of the personal data of our employees and business partners.”



Marcel Messer, shareholder and advisor to the Management Board of Messer Group GmbH: “As the majority shareholder of Messer Group GmbH, the Messer family recognizes and accepts its social responsibility. The aim is to conduct responsible and sustainable business operations at all times, in order to ensure growth within the framework of our social integration in society. In this regard, I would particularly like to highlight the respectful and responsible way in which we deal with our employees, the non-negotiable nature of our open-mindedness and tolerance, the importance of continuity in our tradition and our independence, full compliance with applicable laws and regulations as a minimum precondition of any action, and the responsible and sustainable treatment of the environment, as well as integrity and loyalty.

Many of our employees have been with us for many years or even decades and rightly have a feeling of security in a family-like environment. The success of our company is based, to a large extent, on their loyalty over many years. In our family-run company, respect for the employees and their safety are of paramount importance.

As a member of the fourth generation, I am particularly committed to open-mindedness, diversity, tolerance and respect for cultural differences – without limitation or exception.

Intolerance, racism and sexism are completely at odds with the values of our family and our family business. Our culture offers space for everyone – regardless of nationality, religion, ethnicity or sexual orientation – to develop on a free and equal basis. Diversity enriches us.

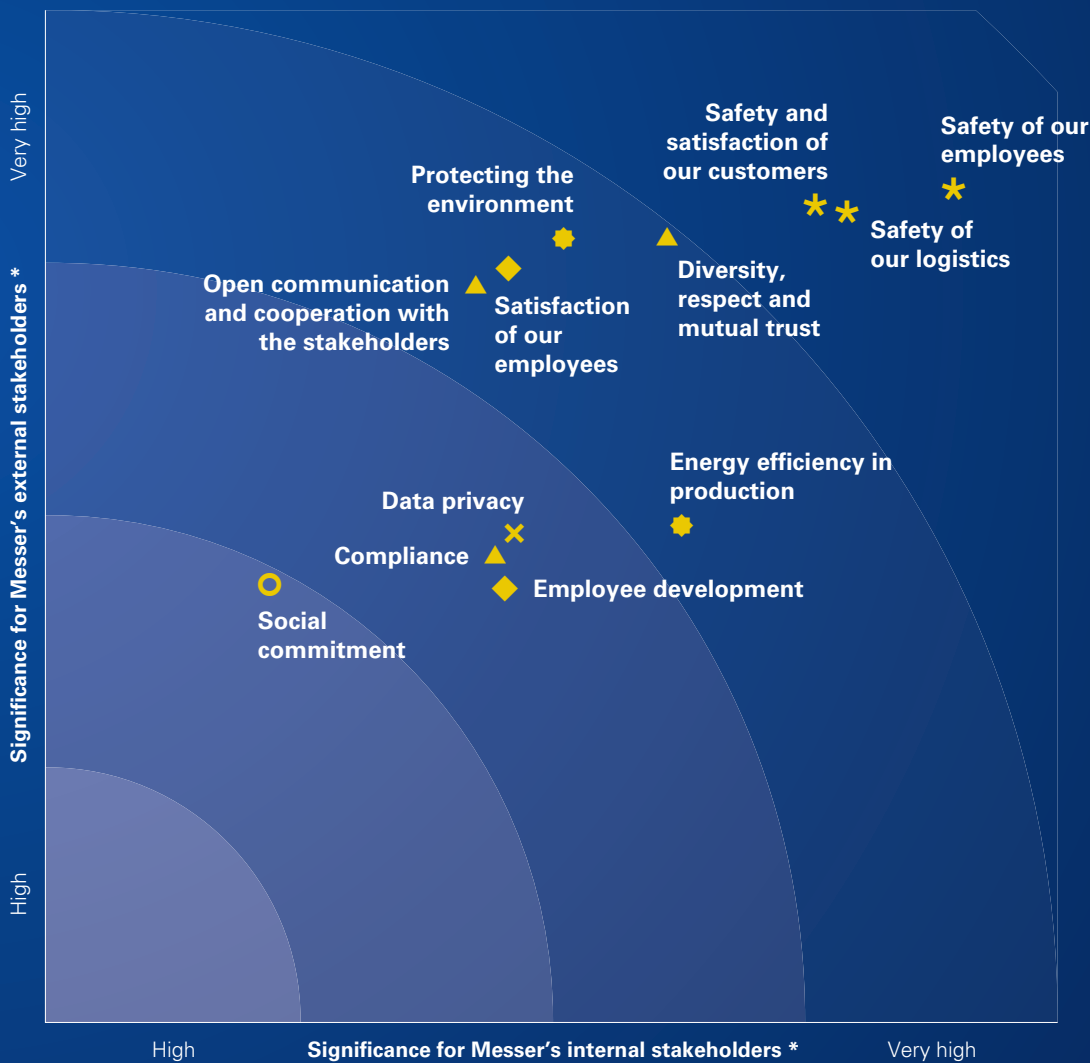
I also declare my support for the tradition and continuity of our history spanning more than 120 years. Our customers and our employees can rely on the family’s continued influence on our corporate culture and strategy. As a value-oriented, family-run company, this is how we lay a foundation for reliability, mutual trust, loyalty and integrity.”



Development of our materiality matrix

The key elements of our strategic sustainability process are the product of our daily and long-term actions and activities. When evaluating these topics, we consider it important to include representatives of all stakeholder groups. For this reason, we have compiled a transparent list of twelve core topics. In order to differentiate the priorities of our internal stakeholder groups, 36 senior managers and 534 employees voluntarily completed an anonymous online survey where they ranked the topics on a scale of one to ten, with one being important and ten extremely

important. Selected journalists and followers of our social media channels also participated in the anonymous online survey. As in previous years, the safety of our customers and employees is of utmost importance to our company. Our decisions can affect all key issues and also have potential impacts on stakeholders outside the organization as well. For this reason, all major projects, both in-house and external to the organization, are relevant.



*internal stakeholders: internal stakeholder groups such as general managers and employees

external stakeholders: external stakeholder groups such as customers, suppliers, journalists and social media followers

The responsibility of the company

Customer and employee orientation, responsible action, corporate responsibility, open communication, trust and respect: all of these are embedded in Messer's mission statement.

In order to make those values – along with the developments relative to sustainable action – measurable and comparable, Messer first introduced sustainability Key Performance Indicators (KPIs) in 2014. Because sustainability and the associated topics are not static, however, the KPIs were revised this year.

The present Sustainability Report outlines the activities and CSR key indicators of the Messer Group GmbH (Central and Southeast Europe as well as Asia), the Western European companies of Messer Industries, and the American companies of Messer Industries. Except where stated otherwise below, the information relates to all of Messer as a Group.

This report is based on the UN Sustainability Goals and follows the G4 guidelines of the Global Reporting Initiative (GRI). At our customers' request, we also report on third-party agents, such as EcoVadis and the Carbon Disclosure Project, as well as on the worldwide "Responsible Care" initiative of the chemical industry.

	Unit	2018	2019 Combined KPI	2019 Messer Group incl. Western Europe	2019 Messer Industries excl. Western Europe
1. Safety of our employees					
Number of Lost Time Injuries (Messer employees)	number	14	44	26	18
Lost Time Injury Frequency Rate (Messer employees lost time injuries)	per million working hours	1.3	2.0	2.4	1.6
Lost Time Injury Severity Rate (Messer employees lost days)	per million working hours	64.0	45.6	69.6	21.6
Number of Recordable Working Injuries (Messer Employees)	number	23	97	47	50
Recordable Working Injuriy Frequency Rate (Recordable injuries)	per million working hours	2.2	4.3	4.3	4.4
Fatalities (Messer employees)	number of persons	0	0	0	0
2. Safety of our logistics					
Cylinder fleet: Number of preventable incidents	number	9	-	6	NA
Cylinder fleet: Frequency Rate (Number of preventable incidents)	per million driven kilometers	0.41	-	0.28	NA
Bulk Fleet: Number of preventable incidents	number	14	130	10	120
Bulk Fleet: Frequency Rate (Number of preventable incidents)	per million driven kilometers	0.19	-	0.14	NA
Development of the distance travelled per ton (payload) of liquid industrial gas or cylinder gases delivered (Index 2019 = 100)	index	-	100	100	100
3. Customer safety and satisfaction					
Ratio: Number of technical reviews/Number of Messer owned customer instalations	Ratio	1.06	-	1.07	NA
Ratio: Number of safety audits at customer sites/number of Messer owned customer instalations	Ratio	0.24	-	0.15	NA
Total number of customer training participants	number	5,273	-	4,392	NA

	Unit	2018	2019 Combined KPI	2019 Messer Group incl. Western Europe	2019 Messer Industries excl. Western Europe
Number of participants in customer satisfaction surveys across the Group	number	1,522	-	607	NA
Percentage of credit notes in relation to number of invoices issued	% of invoices	1.4 %	-	1.4 %	NA

4. Diversity, mutual trust and respect

Proportion of women overall	%	-	29.5 %	22.9 %	36.1 %
Proportion of women in first and second management levels	%	-	26.2 %	26.1 %	26.3 %

5. Energy efficiency in production

Energy coefficient (Index 2018 = 100)	index	100	-	98.4	NA
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6. Open communication and cooperation with stakeholders

Number of items of customer feedback regarding the content of the digital customer magazine "Gases for Life"	number	-	-	NA	NA
Total number of attendees at employee assemblies (townhall meetings) and international network meetings towards strategic integration and know-how transfer	participants	-	8,369	7,932	437

7. Protection of the environment

CO ₂ Footprint of plants and logistic	Mio. t CO ₂ e	3.38	4.82	3.07	1.75
Specific CO ₂ Footprint of plants and logistic	t CO ₂ e / ,000 Euro	2.50	1.55	2.10	1.06
Number of production/filling companies certified to ISO 14001 / RCMS	number	23	57	24	33
Water consumption	Mio. m ³	-	-	NA	7.9
Proportion of sale contracts concerned with applications whose overall impact is positive for the environment	% of signed contracts	-	-	26 %	NA
Estimate of avoided CO ₂ -emissions through installation of on-site production units replacing bulk supplies	thousand t CO ₂ e	-	-	4.3	NA

8. Employee satisfaction

Average length of service	years	10.6	9.8	10.6	9.0
Staff turnover rate	employee turnover rate	7.4 %	10.7 %	7.8 %	13.5 %
Lost days due to sickness per employee (Number of working days per employee, long-term sickness > 6 months excluded)	days	4.1	-	4.3	NA

9. Employee development

Average expenditures on training programs per employee	Euro	243 Euro	-	234 Euro	NA
Training hours per employee per year	hours per employee	2.8 (days)	-	18.7	NA
Proportion of apprentices and trainees in total workforce	%	-	-	0.6 %	NA

10. Compliance

Number of inquiries to the „Ask us help desk“	number	1	5	3	2
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**SUSTAINABLE
BUSINESS**

Messer's strategic orientation

Acquisition of parts of Linde's and Praxair's American business

Messer Group acquired the majority of Linde AG's gases business in North America and certain Linde and Praxair business activities in South America effective March 1, 2019 in a joint venture – called Messer Industries GmbH – with CVC Capital Partners Fund VII ("CVC"). Messer Industries invested a total of around 3.6 billion US dollars (3.2 billion euros). Messer Group contributed the majority of its Western European companies to the joint venture.

Over the course of the next few years, the joint venture will be fully integrated into the family-run Messer Group, thereby establishing a global gas group under the leadership of the

Messer family. Messer Group's regional operations are currently focused in Eastern Europe and Asia. Asia already represents the largest industrial gases market and is expected to have the highest growth rate in the medium term. Also with Messer Industries' participation, in 2019 strategies were developed for the Americas and Western Europe, in order to sustain business success in the coming years. The common aim that they all share is to achieve safety, customer focus, profitable growth and fair payment for our products through a team culture focused on efficiency, success and motivation in combination with innovation and a highly satisfied workforce and clientele.

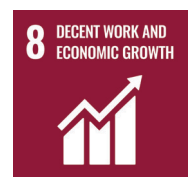
Efficiency increase through operational improvements

Messer Group is planning to implement improvements, especially in the areas of plant automation, sales, energy efficiency and logistics. Enhanced sales operations will contribute to positive earnings by implementing required pricing measures and by focusing on on-site projects, cylinder and special gases, and the sale of bulk gases in China. Cross-selling with MEC Group products and new medical gas products will be promoted. A higher number of customer visits will increase customer loyalty and sales. Customer satisfaction analyses are a valuable tool and an important metric of target achievement. We will also continue to expand the use of digital communication with the customer and networking within Messer such as video conferences. Alongside this, improving the procurement practices we follow when acquiring goods and services will cut costs. Moreover, the transport of cylinder gases and bulk products will be optimized through more efficient loading and higher payload

transport vehicles. The development of a digital solution to support cylinder gas logistics is nearing completion. Using historical data, it will combine anticipated short-term customer needs with existing orders and planned deliveries in order to eliminate unnecessary haulage.

In the area of production efficiency, an initiative to automate the remote monitoring of air separation units has been launched. In 2019, Aspen DMC3 advanced process control software from Aspen Technology was successfully put into operation in two Messer Tehnogas air separation units in Smederevo. They will enable energy savings, higher yield, and more stable plant operation.

Launched in 2019, the project to implement the level monitoring of mobile containers has entered the test phase. Results of long-term testing are expected by the end of 2020.



Marcel Messer is advisor to the Management Board

Marcel Messer, fourth generation Messer shareholder, has been serving as Advisor to the Management Board of Messer Group GmbH since February 1, 2019. In that function, Marcel Messer reports directly to the Management Board, providing it with support and consultation concerning, among other things, corporate strategy. In particular, Marcel Messer will contribute

his experience from the finance industry in order to help Messer Group manage the planned exit of financial investors from the Messer Industries joint venture. In the function of owner (observer), Marcel Messer has also been named to the Supervisory Board of Messer Industries where he has been appointed Company Secretary.

Sustainable growth through investment

Characterized by its long-term operations, the industrial gases sector is establishing a solid basis for sustainable growth, espe-

cially through investment projects. The following projects, for example, were initiated or completed by Messer in 2019.

Germany – Cornerstone for new air separator

In June 2019, the cornerstone was laid for Messer's third air separation unit in Germany. Together with the gas manufacturer basi Schoberl, Messer is investing some 32 million euros in the production of oxygen, nitrogen and argon. Construction on the grounds of SAINT-GOBAIN ISOVER G+H AG in Speyer is

scheduled for completion in spring of 2020. Messer has already been supplying gases to the customer by trailer since May 2019. In the near future, the new on-site air separation unit will minimize those gas shipments and the accompanying carbon footprint.

Hungary – Investments reinforce market position

In the past three years, Messer invested 37 million euros to build up its Hungarian market. With gas production units and plants at twelve major customers, Messer is the market leader in the on-site atmospheric gases business in Hungary. In 2019, Messer signed an agreement with MOL Petrochemicals, a leading petrochemical group, for the construction of a new on-site unit to supply nitrogen and instrument air for a new polyoil complex in Tiszaújváros in northern Hungary. When the unit

goes into operation in 2021, it will be one of Messer's largest on-site units in southeastern Europe. Messer also built two new nitrogen generators in Hungary – one in Dunavarsány and one in Hatvan – and a third one is currently under construction. In response to the growing demand, the construction of two additional CO₂ plants has tripled the utilization capacity of the carbon dioxide field near Ölbő, Hungary, over the past two years.

China – Growth driver for the Messer Group

In 2019, Messer achieved another breakthrough in the electronics industry and put gas supply plants into operation in Sichuan at Truly and BOE for, among other things, high-purity nitrogen. BOE and Truly are leading companies in the electronics market in China. In addition, Messer China signed a supply contract for ultra-high-purity industrial gases with HKC Mianyang Photoelectric Technology Co., Ltd. HKC is a leading supplier of large-format LCD displays.

In March, another CO₂ recovery unit of Messer China began producing food-grade CO₂. Located on the grounds of Yunnan Dawei Ammonia Producing Co., Ltd., it is Messer's fourth CO₂ unit in China and its second in Yunnan Province. Through purification and liquefaction, it converts the excess carbon dioxide generated by Dawei's production process into quality products for use in food, pharmaceuticals, and industrial and agricultural applications.

In September, Messer China laid the cornerstone for another air separation unit and a condenser in Hunan Province.

In October, a second air separation unit and a condenser were put into operation in the central Chinese city of Chongqing. The

new capacity makes Messer the leading supplier of liquefied atmospheric gases in Chongqing and now also enables us to supply gas via pipeline to other industrial customers and chemical companies in the chemical park.

Vietnam – Significant growth in the steel and electronics sectors

In 2019, Messer put two new air separation units into operation to supply industrial gases to a new Hoa Phat steelworks in Dung Quất, Quảng Ngãi Province. That makes Dung Quất one of our company's largest production sites in the world. In Hai

Duong, Messer Vietnam put the fourth air separator into operation to supply the same customer. In the electronics segment, Messer has been supplying Seoul Semiconductors with oxygen from a generator since June 2019.

Thailand – Second anniversary

Since January 2020 the still-young Messer Thailand has been operating for two years. In 2019, a new head office opened in Bangkok and a bulk tank farm opened in Samut Prakan. The

company expects to have its own production site within the next few years.

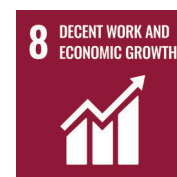
Americas – Messer engages in targeted business expansion of its new operations

In 2019, Messer Industries USA invested in the construction of a new CO₂ plant in Keyes, California. The plant delivers 450 tons of carbon dioxide per day and supplies many companies in northern California and surrounding areas. Carbon dioxide is primarily used in the food and beverage and electronics industries. Messer currently operates two CO₂ plants and two air separation units in California.

Messer Industries USA put a new air separation unit (ASU) into operation in Adel, Georgia, investing more than 40 million dollars in the highly efficient plant. It supplies gases to companies across in the southeastern U.S., strengthening Messer's presence in

that growing region. Our customers there serve the healthcare sector, produce food and beverages, manufacture metal and glass, and operate independent welding and gas centers.

Messer Industries USA is also investing more than 34 million euros (38 million dollars) in the construction of a new air separation unit in Indianapolis, Indiana. Scheduled for completion in early 2021, the facility will produce the atmospheric gases oxygen, nitrogen and argon in technical and medical grades. Future customers will come from the healthcare sector as well as from the chemical, food and beverage, glass and metal processing industries.



Awards for sustainable management

Messer – A winner of the Axia Best Managed Companies Award 2019

In 2019, Messer was honored with the “Axia Best Managed Companies Award.” The honor is awarded to extremely well-managed, medium-sized companies by the audit and consulting services firm Deloitte, the weekly magazine WirtschaftsWoche, and the Federation of German Industries (BDI). According to Deloitte: “As with all of the award recipients, Messer is

also characterized by exemplary management with a unique approach that combines strategic worldview with innovative force, a culture of corporate responsibility, and good business stewardship. In so doing, they help to ensure the economic future of Germany as a manufacturing location while serving as a role model for other companies at the same time.”

Rating Certificate in Switzerland

In 2019, the credit agency Bisnode D&B Schweiz AG granted Messer in Switzerland a “Credit Rating Certificate” with “Risk Indicator 1” (which stands for minimum default risk) for the ninth consecutive time. Only two percent of all companies in Switzerland meet the requirements for that best category. The

certificate sets Messer in Switzerland apart as a trustworthy, reliable, financially healthy and stable business partner. Bisnode D&B is a partner in the network of Dun & Bradstreet, the world’s largest service provider for business-to-business economic data.

Leading sales award for Messer China

The Economic and Technological Promotion Bureau in Foshan, China, honored Messer as a leading company in the manufacturing sector. The award is based on market share, technological innovation and quality. Every company that receives

this award is recognized by the consumers in this sector as a market leader in China with strong technical strengths and good quality.

Engagement in the economic sphere

The owner’s personal commitment

As Vice President and member of the General Assembly of the Frankfurt am Main Chamber of Commerce and Industry (IHK), Stefan Messer holds the office of Chairman of the foreign trade committee. He is also an Honorary Senator of the Technical University Darmstadt, Germany, and Honorary Senator of the Goethe University Frankfurt, Germany, as well as a member of the board of trustees of the Faculty of Economics and on the board of trustees of the China Institute at the Goethe University Frankfurt and a member of the steering committee of the Deutsche Universitätsstiftung (German University Foundation). In addition, he is a member of the board of the German-Swiss Chamber of Commerce, a member of the advisory committee for the FrankfurtRheinMain economic initiative, a member of the advisory committee of Mainova AG, a member of

Commerzbank AG’s advisory committee for the state of Hesse, a member of HDI Gerling’s state advisory committee. He is also a member of the Friends of the German-Vietnamese University and sits on the board of Dachser Group SE & Co. KG. Since January 2009, Stefan Messer has been Honorary Consul of the Republic of Slovenia for the consular district of Hesse, Rhineland-Palatinate and Saarland. Stefan Messer is also involved in the association “Die Familienunternehmer” (The Family Entrepreneurs) and in the foundation “Stiftung Familienunternehmen” (Foundation for Family Businesses), which support the fundamental values of a social market economy, in particular free enterprise. Furthermore, Stefan Messer is a member of the steering committee and board of the East Asian Association (OAV) and Chairman of the inter-state committee on Thailand.

Involvement in industry associations

The Messer Group is a member of the European Industrial Gases Association (EIGA). The Brussels-based association represents nearly all European companies that produce and market industrial, medical and food gases. The association's members cooperate with the aim of achieving the highest possible safety and environmental standards during the production, transport and use of gases. Messer is also a member of the IOMA (International Oxygen Manufacturers Association), the German Committee on Eastern European Economic Relations and the German Asian-Pacific Business Association (OAV). Messer employees are represented on all governing bodies of these associations.

The Messer Group is a member of the German Welding Society (DVS e.V.). The DVS is a non-profit, technical and scientific association based in Düsseldorf. Messer employees are

involved in expert committees, support research projects, and establish and maintain contact with expert groups in technologically advanced fields. The subsidiaries are engaged in various local industry associations. The Messer companies are also involved in organizations in their local regions.

Messer Americas is also a member, inter alia, of the following associations: American Chemistry Council (ACC), Compressed Gas Association (CGA), Chemistry Council of New Jersey (CCNJ), Texas Chemical Council (TCC), California Large Energy Consumer Association (CLECA), Indiana Energy Consumers, West Virginia Large Energy User Group, West Virginia Manufacturing Association, Pennsylvania Energy Consumers Association, Ohio Energy Group und California Large Energy Consumer Association.

Spain – Rubén Folgado named new president of Chemical Business Association of Tarragona, Spain

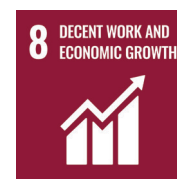
On 19 November 2019, the general assembly of the Chemical Business Association of Tarragona (AEQT) named Rubén Folgado, Technical Director of Messer Ibérica, as its new president. The primary objective of Rubén Folgado's three-year term as president of AEQT is to develop a new strategy to address the current challenges that sustainability, digitalization, energy and talent promotion pose to both the AEQT and the chemical industry in general. The AEQT chemical business associa-

tion was established in 1977 with the goal of promoting the leading position of the Tarragona chemical complex in Southern Europe, in order to help make individual companies more competitive and to contribute to the sustainable development of the area. Messer was one of the founding members of the association at the time. Today all of Messer's major customers in Spain are members.

Americas – Messer is a member of ISBT

In the spring of 2019, beverage industry experts gathered in Charlotte, North Carolina (USA) for BevTech®, the annual meeting of the International Society of Beverage Technologists (ISBT). Messer participated in the meeting for the first time as one of today's leading providers of industrial gases in North and South America with more than 70 production sites in the region. Sal Calandra, in parallel with his role as Head of Quality & Food Safety at Messer in North America, assumed the function of First Vice President on the Board of Directors of

ISBT effective May 1, 2019. ISBT is an international organization whose members exchange information about the business and technical aspects of the non-alcoholic beverage industry. As an ISBT member, Messer provides its beverage industry know-how to support, among other things, the development of guidelines and training materials for the Beverage Institute by ISBT®. Messer is recognized by many members of this organization as a leader in quality and safety. Our company will use its expertise to generate further growth in the region.



CORPORATE RESPONSIBILITY



Global Compliance Management System

The Messer Compliance Management System (Messer CMS) emphasizes our shared understanding of our fundamental values. It constitutes a mandatory framework for resolving conflicts of interest and ensuring compliance with applicable laws, regulatory provisions and the inter-company and company-internal policy guidelines within all divisions of the Messer Group. The managing directors and senior management are

fully committed to the Messer CMS. As a value system, it serves to foster a relationship with our internal and external stakeholders that is based on fairness, solidarity and confidence. It supports those in charge of its establishment and implementation and also seeks to prevent violations of the Messer Code, if possible in advance.

The Messer Code

The Messer Code stands for active corporate governance. Essential to good management practice, it serves as a basic set of rules that govern our daily work in conformity with the Messer's corporate mission statement. Our managing directors must ensure that all employees have unrestricted access to the Messer Code and are aware of where and how it can be con-

sulted. The Messer Code of Conduct is the key document of the Messer Code. It is supplemented and materialized through guidelines and binding internal regulations. We also expect our business partners, customers and other parties who work with Messer to observe applicable laws and the principles of the Messer Code.

Compliance officers

The management of Messer bears responsibility for monitoring the Messer CMS. In accordance with applicable statutory regulations, the managing directors of each country are responsible for implementing this organizational concept in their own national subsidiary and for ensuring compliance with it. They are supported by a Chief Compliance Officer (CCO) and national compliance officers (LCOs). The team of compliance officers is supplemented by the corporate departmental heads in the

Corporate Office who serve as expertise area-specific compliance officers (BCOs). Managers are expected to demonstrate appropriate organization, leadership, communication, judgment, oversight and guidance in their activities. Moreover, they are obliged to protect customers, employees and the environment. In this context, they are clearly committed in equal measure to conducting business in compliance with the law and to preventing illegal practices and punishing those who engage in them.

Messer Code training program

Along with traditional classroom training, webinars and e-learning courses cover specific aspects of the Messer Code. The corporate departments as well as local management and departments generally determine course content and designate which employees receive training. They assume responsibility for the design and implementation of the training courses, supported by external service providers as necessary, and ensure that proper documentation is issued.

In 2019, the Messer Group and its Western European subsidiaries held 686 training seminars and our subsidiaries in the Americas held an updated compliance training course for employees. New e-learning courses were developed in collaboration with Navex.

To comply with statutory requirements in the USA, a training course on combating workplace harassment was introduced in the fourth quarter of 2019. The training course on ethics and the code of conduct, anti-trust law, competition regulations and anti-corruption measures is scheduled to begin in the first quarter of 2020.



Reporting and auditing

Through Group guidelines, statutes, procedural rules, and signature regulations, all important business matters at Messer are regulated by a defined approval process and reporting system. Regular meetings are also held at the local, regional and departmental levels, where participants discuss and coordinate relevant topics, exchange experience, and report on developments. The essential procedures at Messer are defined and often certified (e.g. ISO, GMP). With the support of Corporate Legal and representatives of other departments, Internal Audit conducts regular, multi-day audits of all national subsidiaries. That process also examines matters pertaining to the Messer

Code. Individual departments perform other detailed audits in addition. The CCO regularly informs the Executive Board of Messer Group GmbH and the Supervisory Board – and promptly on request in specific cases – about any serious Messer Code violations reported to the CCO; otherwise this report is submitted annually. Likewise, once a year, all local subsidiaries and corporate departments inform Corporate Controlling about any issues of relevance to the risk report. Those issues are discussed by the Executive Board of Messer Group GmbH, which then decides on any further measures that may be required as a result.

Compliance violations and cases of justifiable suspicion

The managing directors and senior management must organize their area of responsibility in a way that continuously enables employees to report violations of applicable law or the Messer Code (“compliance violations”), as well as cases of justifiable suspicion, in order to ensure prompt remedial action. In 2019, Messer received five reports through the corresponding hot-

lines. At the Messer Group, including its Western European companies, a total of 91 suspected cases of compliance violations were reported (previous year: 71 suspected cases), one of which was significant for the Messer Group beyond the confines of any one region.

New Declaration of Commitment and new manuals for pharmaceuticals, medical devices and drug safety

In 2019, as part of the Compliance Management System (CMS), the management of Messer adopted revised versions of the manuals for pharmaceuticals, medical devices and drug safety. The new manuals constitute binding CMS documents for the European subsidiaries.

The purpose of the pharmaceuticals manual is to ensure that the basic principles of the regulatory requirements and the need to comply with GxP requirements (“good work practice” guidelines) are known and followed. It helps Messer subsidiaries throughout Europe to meet regulatory requirements relative to pharmaceuticals and to obtain marketing authorizations.

The medical devices manual helps them comply with the basic internal and external requirements for medical devices and those of the customers.

The drug safety manual (pharmacovigilance) describes the specific organization system required for monitoring the safety of medicinal products. Messer has a pharmacovigilance system (PV system) that covers the Group headquarters, all marketing authorization holders (MAH) in the EU, all companies affiliated with the PV system and, to a limited extent, all other companies independent of their location.

Data security at Messer

At Messer Group GmbH, a Group IT Security Officer is responsible for coordinating security measures across all the individual companies, establishing standards, and developing the relevant expertise. By maintaining the crucially important availability of our systems, IT Security supports the sustainability of our digitalization, the physical security of our information, and the essential viability of our business processes. The IT Security services are elaborated by an international team of IT Security experts. With preventive vulnerability scans in nine European companies, we monitor our externally accessible IT communication points. Work to eliminate any identified vulnerabilities is scheduled according to risk category and implemented accordingly. When a thorough internal analysis of the IT system has been conducted in one company, the results are compiled in the context of a continuous improvement process and provided to other companies as best practices or as a basis for comparison.

The IT Security team jointly developed an IT security self-audit checklist that we use to determine the current status and recommend actions to prevent or minimize risk. The analysis primarily concerns the IT systems and applications installed and also examines infrastructure and network issues. These self-audits were conducted in three European companies, the findings were analyzed, and action plans were developed accordingly. This tool also serves to raise awareness and focus attention on the prevention of possible risks in IT operations.

For our production facilities, we work with our IT service providers to define basic network segmentation concepts aimed at increasing the operational reliability of the IT used to control the plants. This takes into account both existing and future concepts for operation, maintenance and evaluation.



Data privacy at Messer

Messer acknowledges its obligation to comply with applicable data privacy regulations. Underscoring that obligation, appropriate structures are being established for the purpose of guaranteeing that a high level of data privacy is permanently maintained. The Group Privacy Officer of Messer Group GmbH is responsible for coordinating corporate Data Privacy and provides managerial support for the implementation of the data privacy policy by the national subsidiaries.

Within the framework of the EU General Data Protection Regulation (GDPR) and the German Federal Data Protection Act (BDSG), Messer can prove at all times that we handle

the data of our employees, customers and business partners in conformance with the law. Moreover, we implement all measures relative to organization and documentation pursuant to data protection law. We conscientiously uphold the rights of those affected.

Moreover, Messer's European national subsidiaries and Messer Group GmbH publish their data privacy statement in their national language on their websites. Employees have modified their e-mail signature in Outlook accordingly with a link to the data privacy statement of their national subsidiary (mandatory disclosure) and to that of Messer Group GmbH (optional).

Sustainable, documented supply chain

A sustainable supply chain is one of the foundations of Messer's economic success.

In this regard, Messer's relationships with its key suppliers play a crucial role. Those relationships are maintained by the Logistics/Sourcing and Engineering/Production departments of Messer Group GmbH in their respective areas of expertise. These central departments take charge of or provide assistance with the Europe-wide purchasing of logistics services and special commodities, merchandise, facilities, machinery, and transport equipment, as well as vessels and containers. They are both ISO 9001-certified and have put in place robust and effective quality management systems as part of the certification process. Periodic audits of key suppliers are an essential part of supplier assessment.

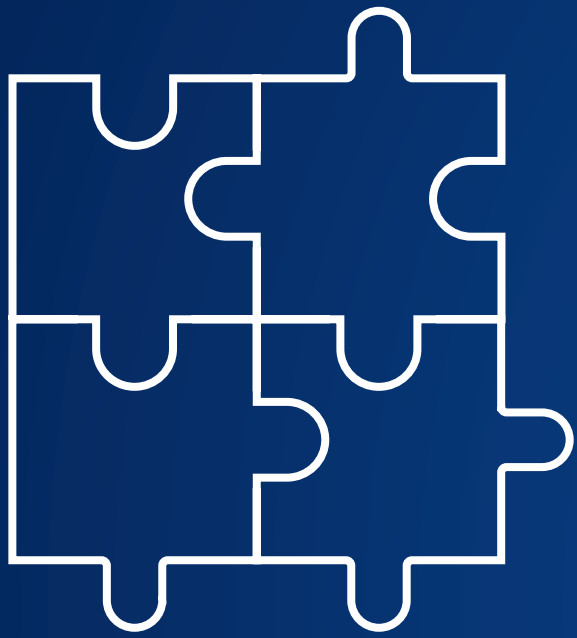
The Production department supports the Messer national subsidiaries in the operation and maintenance of existing production facilities (troubleshooting, maintenance planning, know-how transfer/training, standardization).

The Engineering department is responsible for all technical and procurement-related aspects relative to the implementation of projects for the production of all manner of gases, primarily within Europe. This includes the development and construction or conversion of plants that produce technical and medical gases. In addition to plant design, project management and construction management, this work also encompasses everything from the procurement/purchasing of all required components to plant start-up.

In collaboration with Messer GasPack, Logistics/Sourcing ensures the availability of products (all kinds of gases) and their transportation, for both Messer and its customers. This also includes the development of new logistics concepts and the rollout of optimization and monitoring tools. In addition, the department handles and/or coordinates the procurement of tankers, stationary customer tanks and vaporizers; the procurement, lease and periodic inspection of gas cylinders; the procurement of electricity for the production facilities; and the procurement of gases from external sources. Logistics/Sourcing also helps the national subsidiaries manage transport contracts and organize the transportation of heavy loads. Handling these specialized functions on a centralized basis not only provides economic benefits, it also serves to maintain high quality standards throughout the company.

In 2019, the Logistics/Sourcing department conducted three key supplier audits. These audits focus on, among other things, the production process and the quality of the products manufactured. Since 2018, we now also audit key suppliers' compliance with the principles of the UN Global Compact. The supplier is evaluated on four categories. In the event of an unsatisfactory assessment, measures designed to improve performance are worked out together with the supplier. The results of the supplier audits were very satisfactory. All suppliers, in some cases after having implemented a list of corrective actions, met Messer's requirements.





MESSER-TEAM

Diversity and equality

Diversity and equal opportunity are anchored in our mission statement. Our forward-looking and sustainable Human Relations policies ensure a level playing field for professional success, respect cultural differences, and promote interaction among each other. For Messer, diversity is essential to innovation and sustainable business success. Mutual trust and respect are the foundation of our corporate culture. On December 31, 2019, Messer employed 11,063 people (126 of which are currently inactive employment). Women

accounted for 29.5 % of this figure and the portion of female managers at the first and second levels of management was 26.2 %.

Our salaries are based on function, market, performance, education, experience and number of years of service, as well as any collective wage agreements or comparable collective wage agreements and adjustments for inflation. It goes without saying that our remuneration policy makes no distinction among genders.

Messer Group earns the Total E-Quality award

In 2019, the Messer Group was recognized for equal opportunity in personnel and organization policy for the first time by the non-profit association Total E-Quality Deutschland e.V. The Total E-Quality award is supported and recommended by the German Federal Ministry for Family Affairs, Senior Citizens,

Women and Youth as well as by the German Federal Ministry of Education and Research. Among the 13 new award winners, only four earned the supplementary award for "Diversity" – and one of them is the Messer Group. It is valid for three years.

Made in Germany – Made by Diversity

In 2019, the Messer Group participated in the "Made in Germany – Made by Diversity" initiative, speaking out along with some 50 other German family-run businesses in favor

of an open-minded attitude toward the outside world and against xenophobia.

Messer Group signs Diversity Charter

In November 2019, Stefan Messer signed the Diversity Charter, sending a signal of commitment to diversity and respect at Messer. The Diversity Charter is an initiative that promotes diversity in companies and institutions under the patronage of German Chancellor Dr. Angela Merkel. In signing the charter, the Messer Group undertakes to create a respectful work

environment that is free of prejudice, regardless of gender, nationality, ethnic origin, religion or ideology, disability, age or sexual orientation and identity of the employee. The signing falls within the scope of measures developed and implemented by the Diversity team in the context of the Diversity Management program.

Slovenia – Messer recognized as a family-friendly company

For seven consecutive years now, Messer in Slovenia has been part of the Family-Friendly Companies project, wherein we have implemented various activities designed to create optimal conditions for coordinating professional, family and private life.

We concentrate primarily on families with children and develop opportunities for combining profession and family. Among other things, the children of employees are given the opportunity to travel together during school holidays.



Satisfaction of our employees

In 2019, the average company service of our employees since they joined Messer was 9.8 years. Employee turnover was 10.7 %. Among employees of the Messer Group, including the Western European subsidiaries, we recorded an average of 4.3 lost workdays due to illness (excluding long-term illnesses). The 2020 fiscal year will mark the first time that the corresponding data will be available for Messer in North and South America. In the fourth quarter of 2019, Messer Americas initiated a new, semi-annual employee survey, in order to gather timely,

in-depth findings and ensure the implementation of our mission and strategy. Approximately 45 % of the workforce of Messer Americas – more than 2,400 people – participated in the initial survey. These results will serve as a benchmark for the coming years. Starting from 2020, surveys will be conducted again in North and South America, in order to determine the needs and requirements of employees and to establish appropriate employee development programs.

Education, advanced training, know-how transfer

Messer is committed to the education and training of talented young professionals, who represent an important investment in the competitiveness and capability of our company. The training takes place at various locations, supplemented in part by multi-week assignments abroad. In 2019, the training quota at the Messer Group including the Western European subsidiaries was 0.6%. The 2020 fiscal year will mark the first time that the corresponding data will be available for Messer in North and South America.

For the employees of the Messer Group including the Western European subsidiaries, the local Human Resources departments address the need for advanced training within the framework of annual employee performance reviews and concrete continuing education plans. In 2019, employees received an average of 18.7 hours of training, which represents an average continuing

education expenditure of 234 euros per employee. The 2020 fiscal year will mark the first time that the corresponding data will be available for Messer in North and South America.

Open dialog and in-house transmission of expertise are important to us. That's why we promote the establishment and maintenance of cross-regional and intercultural networks. In 2019, employees participated 8,369 times in site conferences or network meetings for strategic integration or know-how transfer.

As an in-house concept for systematic employee development, the Academy Messer Group provided a wide range of training courses, both on technical topics and for the development of personal skills.

Bosnia-Herzegovina – “Focus on Cylinder Gases” training completed

In February 2019, various departments of Messer in Bosnia-Herzegovina completed a training course developed by the Academy Messer Group. “Focus on Cylinder Gases” concentrated on the strategic improvement of marketing activities. The training course, which started in September 2018, consisted

of six two-day workshops. On the first day, practical exercises were used to strengthen sales skills. The second day consisted of training on various subjects such as welding and cutting, medicine, special gases or the packaging of food under protective gases.

Application Engineering online platform – Messer Innovation Forum

February 2019 marked the launch of Application Engineering's new online continuing education platform “Messer Innovation Forum”. It uses webinars to pass along application knowledge and is oriented toward customers, salespeople, sales managers, applications specialists and technicians. One objective is to transport the know-how from the individual fields to the national subsidiaries. The scope of training covers a broad spectrum and is regularly repeated – also according to individual need.

This makes it possible to communicate specialized information quickly and cost-effectively, for example, in preparation for an upcoming customer visit. Additional benefits include reduced travel times along with fast, straightforward training for new employees. During the first two months of the program, the first webinars reached more than 250 participants.
www.messergroup.edudip.com





**SAFETY AND
HEALTH**

Safety and health form an integral part of Messer's business activities. Only a universal, well-organized Safety Management System enables the continuous improvement of operational

processes and performance. Our goal is for our workforce and our customers to be accident-free.

Safety

Safety of our employees

Every year, we give a safety award to the national subsidiaries that have most effectively implemented the safety regulations in order to encourage our employees to remain as mindful as possible. In 2019, Messer reported 44 industrial accidents with loss of working hours. The rate of loss of employee working time per million hours worked (accident frequency rate) was

2.0. The number of working days lost per million hours worked (industrial accident severity rate) was 45.6. We registered 97 reportable industrial accidents; the frequency rate of reportable industrial accidents per million hours worked was 4.3. There were no fatalities among Messer's workforce last year.

International Safety Day 2019

The annual International Safety Day was held in September 2019 at all Messer locations. The companies in Europe focused on work safety through operative discipline, because many accidents occur as a result of habit or indifference. The day featured various programs: In Germany, there was an additional guest presentation entitled "Healthy work in a digital world." Messer in Hungary supplemented Safety Day with a Health Day: A sleep expert gave a talk on sleep habits and the team gained insights into the exciting world of yoga. Study materials and a discussion on safety at work raised the awareness of

Messer employees in Serbia and Montenegro. There were also many improvement suggestions and discussions on the topic of work safety at Messer in Switzerland. Messer employees throughout the Americas gathered for their first Safety Day to reinforce their continuous commitment to safety as top priority and core value. At all locations – from Stewartville to São Paulo and from Montreal to Medellín – teams discussed the value of "safety mindfulness" that involves paying attention to one another and concentrating on the safe execution of the work at hand.

Safety awards

European safety awards from EIGA

At its Summer Session 2019 at the end of May in St. Julian's, Malta, the European Industrial Gases Association (EIGA) presented safety awards to Messer for exemplary occupational safety:

Messer Energo Gaz (Romania) was awarded the "Gold Star Safety Award" for 20 consecutive years without a lost workday injury accident at its acetylene plant in Mintia.

Messer Slovnaft (Slovakia) received a "Gold Safety Award" for 15 years of accident-free work at its Vlcje Hrdlo site.

Messer Ibérica de Gases (Spain) was awarded a "Silver Safety Award" for ten consecutive years of accident-free work at the production site of the air separation unit in El Morell.



Messer France (France) received a “Bronze Safety Award” for five consecutive years without an accident at the Suresnes site. **Messer Hungarogáz** (Hungary) was honored with the “Road

Safety Award 2018” for the lowest accident rate in the Bulk Vehicles category based on an annual fleet mileage of from 1 to 5 million kilometers.

Spain – FEIQUE award for safety

Messer Ibérica, Spain, received the FEIQUE safety award for the seventh time. Companies or production centers in the chemical industry with more than 50 employees earn this award from FEIQUE by going the entire year without a reportable lost time injury accident. Messer Ibérica has been operating the

ASU in Vilaseca without lost time injury accidents for the past 16 years and has been operating the ASU in El Morell and the filling plant in Alicante without lost time injury accidents for the past 10 years.

China – Award for safe production

In 2019, the Chinese Messer company Sichuan Meifeng Messer Gas Products Ltd. (“MMG”) in Sichuan Province was recognized by the government with an award for safe production. In 2018,

MMG received the 2018 “Advanced Production Safety Unit award” for outstanding performance in training, accident prevention and safety.

Safety of our customers

In 2019, the companies of the Messer Group including Western Europe held a combined total of 1,452 customer safety seminars, which were attended by 4,392 people in all. The facilities operated at our customers’ sites underwent technical inspections an average of 1.07 times and they underwent safety audits an average of 0.15 times. The 2020 fiscal year will mark the first time that the corresponding data will be available for Messer in North and South America.

In 2019, we reissued our “Pocket Safety Guide” brochure series. It provides information about the safe transport and handling of gas cylinders, the safe transport of dry ice, and the content of gas cylinders.

Safety of our logistics and vehicles

In the logistics area we work with internationally applicable safety measures and continuously exchange information to improve our safety performance. The transport of gases carries major risks. For that reason, the Messer Group signed the Road Safety Charter and has committed itself to placing a special focus on the area of transportation safety. In addition to the statutory regulations governing the operation of a fleet of vehicles, Messer’s own transportation safety concept has proven effective.

Messer employs external carriers to transport our gases. The carriers are responsible for training their drivers in accordance with the ADR (European Agreement concerning the International Carriage of Dangerous Goods by Road). At the Messer Group

including the Western European companies, six avoidable accidents occurred while transporting our cylinder gases in 2019 (versus nine in the previous year). That means the rate declined from 0.41 to 0.28 accidents per million kilometers driven.

The number of avoidable accidents while transporting liquefied gases also fell from 14 (2018) to ten, thereby lowering the frequency rate per million kilometers driven from 0.19 in 2018 to 0.14 in 2019. The 2020 fiscal year will mark the first time that the corresponding data will be available for Messer in North and South America.

We aim to reduce the number of accidents further by means of appropriate supplier management and driving training programs.

In addition, all drivers receive a driver's manual specific to their work (bulk, cylinders or service vehicles). This ensures that all important information relating to their job is readily accessible. An on-board computer system with a focus on transport safety has been installed in most of our fleet throughout Europe since the end of 2019. In the future, we aim to improve transport efficiency further through even more detailed measurements.

Messer specialists are actively involved in all relevant EIGA bodies and, to a large extent, in national associations too. The findings from that committee work are continuously incorporated into the driver's manual and the driver training curriculum in order to improve transport safety. In this way, Messer is helping to achieve a steady reduction in the number of transport-related incidents.

Healthcare

Messer is a partner in the medical and pharmaceutical sector

Messer is active in the medical business in over 20 countries and provides services ranging from consultation on the delivery of medicinal gases or gases as medical devices to the planning, installation and maintenance of supply systems – a complete service package from a single source. Medical accessories and consumables round out the offering.

this specifically includes the requirements of (European) Good Manufacturing Practice (EU-GMP) and the specifications of the European Pharmacopoeia. Our gases as medical devices comply with the Medical Device Regulation (EU 2017/745), the previously applicable Medical Device Directives, and the corresponding national laws.

As a company that is also active in the pharmaceutical sector, Messer complies with all national, European and international regulatory requirements. For gases as medicinal products,

Internal audits, a standardized pharmacovigilance system, and validated procedures and computer systems ensure our product and supply quality.

New marketing authorizations for medicinal products and increasing marketing of medicinal products, medical devices and medline products

Once again in 2019, Messer expanded its existing product portfolio of medicinal gases and applied for new marketing authorizations for medicinal products. To that end, Messer's own operating facilities are being qualified accordingly and the products are being independently authorized. The completion of the GMP work and the submission of the medicinal product dossiers for the first products will be completed by the end of 2020.

Moreover, Messer continued to intensify its marketing of medicinal gases in 2019, especially for gases used in the treatment of heart disease or respiratory/pulmonary diseases, whereby significant further growth is also expected in 2020.

In 2019, Messer continued its successful development as a complete service provider, thereby further increasing sales. Lastly, Messer maintained its existing Certificates of Conformity for medical devices in 2019 and expanded its portfolio of medline and pharmline products.



Spain – Gas supply for people with cerebral palsy

In the Province of Tarragona, the Spanish foundation “Fundació La Muntanyeta” supports people with cerebral palsy, in order to defend their rights and improve their quality of life. More than 100 people receive care in a school, a day care center and a dormitory. In 2019, Messer actively supported the construction of a day care center and additional dormitory rooms and provided a vacuum system and medical oxygen supply for all

rooms. People with cerebral palsy often suffer from respiratory trouble. According to a concept from Messer, the supply system makes it possible to provide the healthcare in the room that the affected person occupies. They can remain in their own private space, and therefore in a comfortable environment, when they need medical assistance.

Colombia – Messer is the market leader in stationary and home care

The gases business of Messer in Colombia provides our customers the full breadth of medicinal gas solutions as well as specific offerings for the healthcare segment.

In Colombia, Messer is the market leader for stationary and home care, supplies hospitals with medicinal gases and helps them develop their gas supply systems. Although the systems generally run only as far as the hospital rooms or operating rooms, in Colombia the supply is designed for the patients themselves. Along with the permanently installed infrastructure, Messer also supplies inhalers and ventilators as well as other accessories needed for the supply of medicinal gases or breathing air to individual patients. In so doing, Messer supports more than 36,000 people at home, who rely on additional oxygen to breathe. In addition to gas in cylinders, most of them receive

oxygen concentrators that filter oxygen from the surrounding air. Within the framework of its REMEO program, Messer also maintains six clinics of its own for some 350 people whose severe chronic respiratory diseases require continuous care. These facilities offer state-of-the-art care in a friendly, homelike environment. At the same time, this specialized form of care is less expensive for the health insurance system than conventional treatment in a hospital. Furthermore, the REMEO clinics house sleep laboratories for the treatment of nighttime respiratory disorders. In all, Messer employs some 1,200 nurses and caregivers in Colombia, who are specially trained and can develop their expertise considerably through their work with REMEO.

Healthcare programs for our employees

For many years now, Messer’s own facilities have been equipped with sport and relaxation areas for the employees to use. There is also a broad curriculum on offer with courses in

relaxation and in specifically targeted fitness training. In addition, our companies provide various care and therapy options. The following projects, for example, are scheduled in 2019:

Czech Republic – Sport and relaxation for work

Health is about more than just medicine – a positive work environment is also important for one’s well-being. For that reason, Messer in the Czech Republic is furnishing its headquarters in Prague with a new break area that includes a kitchen, a rest zone and two telephone rooms. And the offices of the Czech

joint venture MG Odra Gas in Ostrava-Vratimov have also been renovated and equipped with sport areas. With these investments, Messer in the Czech Republic is creating the right conditions for a satisfying, healthy workplace – and therefore also for a motivated, effective team.

Hungary – Company health insurance for all employees

Through its company health insurance fund, Messer Hungarogáz offers its employees the full range of private medical services. The high-quality healthcare services of Medcover are available to the employees in all medical areas, including examinations, state-of-the-art diagnostics, and hospital care. The agreement

is supplemented by the full spectrum of emergency services throughout the capital city of Budapest. In this way, even in an emergency, employees and their families have ready access to high-quality medical services without waiting periods.

Social commitment to health

Messer companies are committed to a wide range of sporting events that promote health, self-confidence and social cohesion. Moreover, Messer provides regular support in the form

of donations to organizations that promote health and medical care. The following projects, for example, are scheduled in 2019:

Germany – Christmas donation for children with cancer

Once again, this past year, Messer companies in Germany donated some 5,500 euros – profit from the sale of food, beverages and stainless steel art – to the association “Hilfe für krebskranke Kinder Frankfurt e.V.” (“Frankfurt Helps

Children with Cancer”). November 2019 marked already the fifth time that Messer has organized a Christmas market on Messer Square at the corporate headquarters.

Spain – Sporty kids

In 2019, Messer started supporting the “Montbike Messer Kids” mountain bike club, where girls and boys from 5 to 14 years of age practice. They already have competed in mountain bike and cross-country races in Catalonia and other regions of Spain

as well as in international competitions in France and Belgium. Three club members are already classified as Catalonian champions.

Switzerland – Promotion of disabled sports

For many years now, Messer in Switzerland has been supporting the association PluSport Behindertensport Schweiz. That

commitment to the promotion of disabled sports in Switzerland was recognized once again in 2019.

Slovenia – Support for running events

Messer in Slovenia supports regional sporting events in which employees of Messer Slovenija also participate. One of them is Dani Bastašič, who works as a warehouse clerk in the cylinder gases area. Each year he runs in more than ten races

throughout Slovenia – including the 2019 edition of the “Vetrov tek” race, which was the 11th time it has been held in Ruše. Supported by Messer, the competition attracted many running enthusiasts of all ages.



ENVIRONMENTAL AND CLIMATE PROTECTION



Environmental protection through energy management

Messer develops and builds its own air separation units. Energy efficiency is just as much a key factor in their design as in the inexpensive acquisition of the energy used to operate these production plants.

Messer's goal is to reduce the specific energy consumption of our air separation units over the long term by an average of 0.7 % per year. This will be achieved through better utilization of our production plants, continuous investment in even more efficient plants, and projects specifically designed to increase energy efficiency. Since 2014, our own Global Energy Officer (GEO) has been in charge of energy management in the Messer organization. Specific energy consumption at the Messer Group including the Western European subsidiaries was reduced by 1.6 % compared with 2018. The 2020 fiscal year will mark the first time that the corresponding data will be available for Messer in North and South America.

In 2019, our production facilities consumed 10.2 TWh of electricity worldwide. In 2019, the electrical power consumption of the Messer Group including Western Europe was 5.8 TWh, versus 5.2 TWh in 2018. That 0.6-TWh increase (+11.2 %) was attributable to the start-up of new air separation units and the improved utilization of existing plants, especially in Asia (+0.3 TWh) and Europe. Messer in North and South America consumed 4.4 TWh of electricity in 2019. Optimizing electricity procurement includes calls for tenders throughout Europe, long-term framework agreements, and the continuous monitoring of futures and spot markets. A central electricity procurement unit at Messer Group GmbH supports and advises our national subsidiaries on buying electricity and carries out regular checks of their electricity costs as part of a comparative analysis. The use of renewable energy is also checked on a regular basis.

Switzerland – In-house energy production by water turbine

Messer in Switzerland produces its own electricity via a water turbine. The new turbine is a double-regulated, vertical-axis Kaplan turbine for a directly driven synchronous generator.

The turbine output is 250 kW, resulting in a maximum electrical power output of 235 kW. Unneeded power is fed into the power grid, especially on weekends.



Greenhouse gas emissions

Air separation units process the surrounding air and produce no toxic or environmentally harmful emissions. Even in the event of a shutdown or a malfunction, only natural components of air are released. We supply our gas products either in gaseous form via pipelines, in cryogenically liquefied form via tank cars for transfer to customer tanks, or in compressed gaseous form in steel cylinders. Only cylinder gases are packaged products. Steel cylinders are usually rented out to customers and returned empty after use. As a result, they are 100% reusable after the requisite cleaning and inspection and generally remain in service for at least 20 years.

We document our total greenhouse gas emissions as CO₂ equivalents (CO₂e). Since 2018, we have been converting the quantity of emissions for each production facility. Our calculation of greenhouse gases is broken down into direct emissions (Scope 1), indirect emissions from procured energy (Scope 2), and other indirect emissions (Scope 3), in accordance with the GHG (Greenhouse Gas) Protocol.

Scope 1 includes all direct CO₂ emissions from our production facilities, especially in connection with the manufacture of hydrogen, carbon dioxide and nitrous oxide, as well as direct emissions from the combustion of fuel in logistics operations. For 2019, the value for the Messer Group including Western Europe was 78,300 metric tons of CO₂ equivalent. The comparable value in 2018 was 74,700 tons. The increase essentially corresponds to the growth in sales plus 1,300 metric tons of additional CO₂e emissions due to logistics in the bulk business.

Across the Messer Group including Western Europe, our bulk and cylinder fleet consumed 32.3 million liters of diesel fuel in 2019. In 2018, that figure was 30.2 million liters. In 2019, our fleet traveled a total of 106.2 million kilometers, versus 97.2 million kilometers in 2018. The significant increase in the number of kilometers traveled was due to the strong demand for liquefied gases in China and Vietnam. The average consumption of diesel increased slightly by 2.0%: from 0.304 liters per kilometer in 2018 to 0.310 liters per kilometer in 2019.

Messer operates N₂O units that produce nitrous oxide in Croatia, Czech Republic, Serbia and China. That gas is used in medical applications and in the electronics and food industries. In Switzerland and China, Messer operates a total of six company-owned hydrogen plants. Three other hydrogen units that we

operate for our customers in Austria and Hungary (on-site units) are excluded from the calculation of our own CO₂ footprint. In its gaseous state, hydrogen can be used in many industrial sectors, including as a food additive in hydrogenation or fat-hardening, in heat treatment processes, as an energy source, or even as an emissions-free fuel.

Despite efficiency improvements, the Group's indirect CO₂ emissions (Scope 2) increased as a result of sales growth in new air separation units, including the newly acquired units in North and South America, as well as due to higher utilization of existing plants. Through reduction of specific electrical energy consumption, which is documented by energy coefficients, and minimization of the emissions factor relative to the purchased electricity mix, however, the absolute emissions increase remains disproportionately low. Indirect CO₂ emissions under Scope 2 comprise the production of the purchased electricity throughout the Group and totaled 4.57 million metric tons in 2019, 1.75 million metric tons of which were allocated to Messer in North and South America. The average emissions factor for North and South America's purchased electricity mix was 18% below the value in Europe and Asia. For Messer Group including Western Europe, indirect emissions fell from 3.02 million metric tons in 2018 to 2.82 million metric tons in 2019. This improvement was partly due to updated emissions factors in China and the Czech Republic.

The emissions we listed under Scope 3 include all indirect emissions unrelated to the purchase of electrical power. This includes the purchase of product from our competitors, for example, as well as our business travel and our employees' daily commute to their place of work. In 2019, our subsidiaries in Spain, Switzerland, Croatia, Serbia, Austria, Slovakia, Poland and Romania determined the distance our employees travel from their place of residence to their place of work and the mode of transport they use. The value determined for greenhouse gases emitted during their daily commute to and from work resulted in an overall average of 1.6 metric tons per employee. For the Messer Group including Western Europe, the CO₂ equivalence value for Scope 3 greenhouse gas emissions, including industrial gases purchased, totaled 175,157 metric tons, which was lower than the previous year. For 2018, we calculated a comparable CO₂ equivalence value of 199,493 metric tons.

CO₂ emissions intensity is measured as the ratio of CO₂e per euro of sales revenue. For the Messer Group including Western Europe, it was 2.1 kilograms of CO₂e per euro in 2019 versus 2.5 in 2018. Firstly, the Messer Group achieved a significant in-

crease in sales revenue and a dramatic improvement in energy efficiency. Moreover, CO₂ intensity fell by 18 % as a result of the purchased electricity mix, partly due to the updated emissions factors.

Water consumption

In 2019, our air separation units consumed a total of 17.3 million cubic meters of water, most of which was used to cool the ASUs' compressors.

Messer's main manufacturing processes – air separation, CO₂ purification and liquefaction – do not require any direct use of water, as solvent, for example. Therefore, no process water requirement exists.

However, the processes do generate large quantities of heat, mainly during the compression of the gases. That heat is usually discharged via a cooling water system.

Most units use an open cooling loop that circulates cooling water, which absorbs heat from the relevant sources and discharges it to the atmosphere in an open cooling tower. These open cooling towers evaporate part of the circulating water while removing another part to prevent insoluble components – the sludge – from thickening. The sum of evaporation losses and the volume of sludge removed must be reintroduced to the system as fresh water. That added water is the only direct water consumption in the production processes. Directly dependent on the unit's power consumption, the quantity of additional water required is around two to three cubic meters per hour per megawatt of electrical output.

Non-toxic and hazardous waste

All together, the Messer Group including Western Europe disposed of 29,011 metric tons of non-toxic waste in 2019, as compared with 24,707 metric tons in 2018. The total quantity

of hazardous waste disposed was 478 metric tons, versus 496 metric tons in the previous year.



Energy management system certifications

Our obligation to protect the environment is also reflected by our quality management system, which applies for Messer worldwide. We are certified according to ISO 14001 in 57 consolidated companies. ISO 14001 is an internationally recognized standard developed by the International Organization for Standardization (ISO). It defines requirements designed to help

organizations establish, implement, maintain and continuously improve their environmental management systems. In 2019, for example, Messer France obtained certification for four of its locations: the headquarters in Suresnes, the filling center in Mitry-Mory, the air separation unit in Ugine, and the CO₂ recovery unit in Lavéra.

Commitment for a clean environment

Germany – Cleaning up the banks of the Rhine

Under the motto “Rhine Clean-up to Go,” Messer in Germany worked together with the City of Krefeld and Krefeld’s municipal waste management service GSAK to organize a spring clean-up campaign along the banks of the Rhine. And for the official international “Rhine Clean Up Day” on September 14th, 2019,

Messer employees gathered up trash from along the banks of the Rhine and brought it to a collection station set up specifically for that purpose. Germany’s longest river, the Rhine flows from Switzerland to the North Sea.

Germany – Earth Hour 2019

“Earth Hour” – it’s the hour for nature. For the second time, industrial gases specialist Messer also switched the lights off at all its locations in Germany. Millions of people participated in

the worldwide initiative of the WWF on March 30th from 8:30 p.m. to 9:30 p.m.

Hungary – PET Cup race with boats made of plastic trash

The Tisza River in Hungary is polluted every year by a vast deluge of tons of household waste – mainly PET bottles and plastic bags – washed down from upriver areas in Ukraine and Romania. Every spring, the wave of pollution sweeps across the full breadth of the river, depositing its plastic waste in the floodplain forests along the Slovakian and Hungarian river banks. That’s why a team of wildlife filmmakers from the Filmjungle

Society (Hungary) initiated the PET Cup: With strong support from local communities, the PET Cup starts with a social event to collect PET bottles. Several teams then use them to build PET boats for a race. Every year, Messer Hungarogáz supplies dry ice to stabilize the PET bottles, because dry ice generates high pressure inside the bottle. In 2019, PET Cup participants collected more than three tons of trash in three days.

Environment and Energy Awards

Switzerland – Environment certificate

Messer Switzerland received an Environment Certificate from the association PET-Recycling Switzerland (PRS). In Lenzburg, the Messer team collected 216 kilograms of PET beverage

bottles for recycling. This saved about 648 kilograms of greenhouse gases.

Poland – Commitment to a stable energy system

Messer Poland joined the DSR (Demand Side Response) program and received the label “I Support Poland’s Energy Security” as a confirmation of its commitment to the establishment of a stable energy system in that country. The DSR is one of the tools that the Society of Petroleum Engineers uses

to ensure the equilibrium of the national electrical power grid in extreme situations. It maintains the right balance between the demand for electricity and the available options for its production and transmission.

China – Environmental Integrity Award

In 2019, the Chinese company PMG in Panzhihua received the “2018 Sichuan Environmental Integrity Enterprise” award, which specifies 22 criteria encompassing the avoidance and control of environmental pollution, environmental management, social oversight, and three other categories. Only firms that

have achieved at least 95 points can earn the Environmental Integrity Award. Of all the companies that received the award, PMG was also the only one based in Panzhihua, a city in Sichuan province with a population of over one million.





**CUSTOMER LOYALTY THROUGH
INNOVATION**

Sustainable technologies

One of the ways our gases and applications benefit our customers is by helping them make their products and processes more environmentally friendly. In so doing, the sales and marketing functions align with the needs of the clientele. Our bulk, pipeline and cylinder gases not only help render process-

es safer, more cost-effective and / or of higher quality, but also make them more sustainable, whether by reducing greenhouse gases, raising production efficiency, preventing waste, increasing yield, or generating direct energy savings.

CO₂ equivalent savings at our customers' facilities

Year for year, we achieve innovations and process improvements for the benefit of our customers and the environment. Thanks to application engineering projects implemented in 2019 using our gases, our specialists' expertise and our technologies, for example, our customers in Europe and Asia are now emitting a total of 34,300 metric tons of CO₂ equivalent per year less than before. The savings achieved in 2019 benefit our climate.

In the field of industrial process engineering, the condensation of solvents is an important technology for cutting CO₂ equivalent emissions. At one of our customers in Europe, a cryogenic process for "total" condensation of gaseous methyl chloride was developed in 1995. In 2019, we designed and built a new plant for recovering 1,000 kilograms per hour of methyl chloride in batch mode. Each year, liquid nitrogen is used to condense some 300 metric tons of methyl chloride for reuse in production. To recover gaseous methyl chloride for another customer, a process was developed and implemented in collaboration with partners, whereby a cryocondenser is combined with

three nitrogen-regenerated adsorbers. With the Messer Duo-Condex pilot unit, extensive testing was conducted at another customer, eventually resulting in the acceptance of the unit and a supply agreement for Messer gases.

For the recycling of waste from rubber boot production, a Central European customer has been carrying out a series of successful pilot plant tests since 2012. After plant design support was provided, the necessary cold grinding equipment was ordered and the supply agreement was signed. In China, large contracts for the recycling of lithium batteries were signed.

In the field of metallurgical processing, oxy-fuel combustion is helping to significantly reduce fuel consumption in high-temperature processes, especially where non-preheated oxidizing air is present initially. In 2019, Messer converted a number of furnace units in the non-ferrous area and other furnaces in the glass industry to oxy-fuel combustion at customer facilities in Europe, Vietnam and China.



Other process improvements at our customers

Switzerland – Quality equipment for heat recovery

Due to increasing energy prices and the need to cut CO₂ emissions, waste heat has become a valuable raw material. Allenspach Apparatebau in Hermetschwil, Switzerland, builds tailor-made heat recovery systems that enable the efficient use of exhaust gas heat from industrial processes. The materials used must be specified individually for each unit – so they can,

for example, withstand the formation of acids or bases during the condensation phase. The high quality of the units from Allenspach rely on the Messer cylinder gases Ferroline C12 X2, Ferroline X4, Innoxline C2, forming gas and argon. They are used for high temperature in the construction and installation of heat recovery systems as well as other equipment.

Switzerland – Air-assisted gas leak detection

Pergam-Suisse's Airborne Laser Methane Assessment (ALMA) is a state-of-the-art laser-aided leak detection system for natural gas lines. The Zürich-based company uses methane from Messer to test its instruments and train users on its application. Methane is the principal component of natural gas. When released to the atmosphere, its impact on the climate is 25 times

more severe than that of carbon dioxide. In order to prevent gas losses and their harmful effect, European Directives require regular inspection of natural gas lines by helicopter. ALMA can reliably detect even minor leaks at a distance of up to 150 meters. It uses a pulsed diode laser aimed at the pipeline during inspection.

Czech Republic – Nitrogen cools recycling mill

Enviropol is a leading processor of waste electrical and electronic equipment in the Czech Republic. Its plant in Jihlava is capable of recycling up to 95 % of the material, which makes it one of the most modern facilities of its kind in Europe. In

order to raise the mill's capacity, the mill is cooled with liquid nitrogen. Messer installed the necessary piping and a nitrogen control system in the spring of 2019 and supplies the gas.

Hungary – Production benefits thanks to CO₂ snow

The Hungarian company Flex Hungary produces numerous components for the automotive and electronics industry in fully automated production plants. Before coating the plastic parts, Flex Hungary cleans them with a CO₂ snow jet cleaning system using liquid carbon dioxide supplied by Messer in Hungary. Together with our partner acp systems, we also delivered the necessary application technology for regulating gas pressure and temperature. Thanks to four high-efficiency cleaning

effects, the system reliably and reproducibly removes contamination in the form of particles and film from the entire surface or, if necessary, only from a specified area. The process is so gentle on the material that it can also be used on highly sensitive and finely textured surfaces. This enables Flex Hungary to improve efficiency and achieve consistently high product quality while reducing waste at the same time.

Serbia – Welding gases for solar thermal energy

Messer supplies argon, methane, oxygen and acetylene to Master Solar in Šimanovci near Belgrade. The company produces equipment that makes thermal use of the sun's energy. Along with collectors, this also includes stratified charge storage tanks for water warmed by the sun. Master Solar's

high-quality units have proven their worth even under extreme climate conditions. The gases are used for various welding processes, including CMT (cold metal transfer) welding, which produces particularly high-quality, practically splatter-free welds.

China – Neutralizing and saving with CO₂

Messer supplies CO₂ and hardware to Gezhoubu Environment & Engineering to neutralize alkaline wastewater. The company cleans sludge pumped from Dian Lake. The largest inland lake in Yunnan Province is polluted due to over-fertilization. An alkaline, calcareous agent is used to extract water from the sludge. That process wastewater is then highly alkaline and

contains about 500 milligrams of lime per liter. Carbon dioxide, introduced with tubular reactors built by Messer, lowers the pH and softens the water. Unlike the previously used hydrochloric acid process, this method releases no chloride ions. Now the treated wastewater can be pumped right back into the lake. And process costs have also been reduced by more than 30 %.

Satisfaction of our customers

Satisfying the needs of our customers is our top priority. Measuring the satisfaction of our customers and taking their opinion into consideration are intrinsic to our guiding principles as a responsible company. We have anchored our ambition in

our corporate mission statement: We focus on the individual requirements of our customers and help them strengthen their competitive position and performance.

Customer satisfaction surveys

In Europe, we measure the satisfaction of our customers in systematic surveys and integrate the findings in our management processes. In 2019, customer satisfaction analyses were conducted in France, Austria and Serbia. The level of satisfaction is high in the three countries: The average is 89.4 %. Another indicator of good customer loyalty is the percentage of credit notes issued in proportion to the total number of invoices. For the Messer Group including Western Europe as well as Asia, it was – as in the previous year – 1.4 % overall.

One factor that strengthens customer satisfaction is service. With a focus on the technical safety of supply installations at our customers (1.07 inspections per tank farm were conducted in 2019) and the practical safety of our customers when handling gases (4,392 of our customers' employees were trained in 2019), we are continuously building trust and further developing our expertise.



Trade fairs and events for promoting customer loyalty

France – Messer presents Silensnow technology at Solutrans

Messer presented its new Silensnow technology at Solutrans in Lyon, France, on November 19-23, 2019. Together with its partner Frappa, Messer developed the new cryogenic Silensnow technology for the temperature-controlled transport and logistics sector. This patented process for vans uses dry ice snow – carbon dioxide in solid form at -78.5 degrees Celsius – as its source of cooling. The cooling capacity of the dry ice is achieved through an indirect cooling system. This process

meets the environmental and regulatory requirements of transport companies. Moreover, Messer has developed its own service station, which makes it possible to fill the system with dry ice safely and rapidly. As a byproduct of the chemical industry, the CO₂ from Messer is collected and cleaned, liquefied and appropriately certified. It is used in a variety of applications. With Silensnow, it is used as a source of cooling when transporting fresh and frozen products to urban areas.

Germany – Grinding with cryotechnology

At the Powtech trade fair in April 2019 in Nuremberg, Germany, Messer demonstrated the advantages of liquid nitrogen and carbon dioxide in cold grinding and informed visitors about cryogenic equipment for cooling products and mills. In cold grinding, the material to be ground is cooled and embrittled with extremely cold liquid nitrogen or carbon dioxide. This process achieves particularly fine grain sizes and a high throughput of the material being ground. Moreover, by displacing oxygen, nitrogen and carbon dioxide establish an inert atmosphere, thereby providing strong protection against dust explosions. The comminution of composites by conventional milling methods is problematic; cryogenic grinding technology can be used to separate them economically and ecologically into their individual component materials. With spices, the high temperatures due to the

energy applied during grinding can cause the loss of aroma and flavoring. With heat-sensitive materials, the use of cryogenic gases to cool the grinding process keeps the temperature from rising. Messer operates a highly specialized test center in Krefeld, Germany. The design of the entire unit serves as a reference, because it corresponds to an actual production plant. The results obtained here are also of particular interest as they can be applied to large scale production. In addition to the manufacture of grinding samples, manufacturing costs can be estimated under different production conditions and compared with other grinding processes. Existing mills at the customer's facilities can also be optimized. To conduct on-site testing on those units, granulate coolers, nitrogen control valves and the temperature control system can be provided.

Slovenia – Water purification conference in Slovenia

In June 2019, together with the Institute for Environmental Protection and Sensors IOS, Messer Slovenija organized a professional symposium on the purification of process water and wastewater in the paper and metal industries. Experts from

Messer showed participants the possible uses of industrial gases and how they affect the processes of conditioning, purification and neutralization of industrial water, including specific examples from industrial practice.

Hungary – Messer innovation forums: Dimensions of metalworking and new trends in efficient, eco-friendly water treatment

In 2019 in Hungary, professional forums on wastewater treatment as well as gas metal arc welding, laser technology and 3D metal printing were held under the new name “Get into Gases – Messer Innovation Forum.” The purpose of these innovation forums is to present the most advanced and exciting innovation projects and trends from research and technology in a special

gases application field. The two high-caliber events drew more than 260 highly qualified specialists together and ushered in a number of business opportunities. Even the professional media rated the innovation forum on welding as the foremost professional event in this field.

Commitment

Slovenia – Messer promotes student races

Messer provided support to the Formula Student team of the University of Ljubljana with gases and welding expertise. In the Formula Student program, student teams from all over the world compete against one another with race cars they build themselves. In this race series, what counts is more than just the results of the actual races. Technical factors such as

production and cost, design, durability and efficiency of the vehicles are evaluated with points. Formula Student is the largest international competition for mechanical and electrical engineering undergraduates. The races are held in three categories: Internal combustion engine, autonomous and electric.

Hungary – Welding courses also for young professionals

Messer in Hungary gives training courses in welding technology for metal and steel construction companies as well as for technical schools. Among other things, these courses aim to offer the future generation of welding specialists practical training

that addresses the needs of the industry. Participants also get the chance to learn about the benefits of using our three-component mixtures.





COMMITMENT TO EDUCATION
AND SOCIAL JUSTICE

Many Messer companies are committed to social projects and support the fight against poverty and hunger and the struggle for social justice. In so doing, they tailor their efforts to address

the specific needs of their own country and their immediate surroundings.

Commitment to education and science

Spain – Master’s student recognized

Messer in Spain awarded the “Work Experience Prize” to Azeem Tariq, who is studying for a Master of Chemical Engineering degree at Rovira i Virgili University in Tarragona. The award is part of a cooperation that was established with the University in 2013. The award is linked to a work-study program at Messer in the Tarragona chemical complex and collaboration

on a process optimization project in the hydrogen production plant. The close cooperation between the university and companies benefits both sides: students value the opportunity to gain professional experience, while the companies promote the course of study and raise their profile as potential future employers as well as suppliers of the industry.

Spain – Messer prizes for students at the University of Tarragona

In 2019, Messer Ibérica presented the Messer Award for Chemical Engineering Students for the seventh time and established a new award for Food and Bioengineering Students. The purpose of these awards is to combine high-quality education

with industrial experience, the promotion of talent, and the promotion of teamwork. Messer uses this initiative to recognize the best integrated project encompassing all subjects covered in the second year of study toward a bachelor’s degree.

Spain – The chemistry of basketball

How to show ten- to twelve-year-old school children that chemical products and industrial gases are indispensable for many things in everyday life? Our team in Spain found an interesting solution: Together with the Tarragona Basketball Club (CBT) and the Chemical Business Association of Tarragona (AEQT), they visit students in schools near the chemical complex. Taking basketball as an example, the children learn that many of the things that this sport requires would be impossible to make without chemistry and industrial gases: It takes oxygen

to make the plate of glass behind the basketball hoop, the sole of athletic shoes are foamed with CO₂, the basketball hoop is welded with argon, and oxygen is used in the production of synthetic fibers for sportswear. This information was even personally presented by members of CBT’s professional team. Our colleague David Fernández is also really on the ball here: As plant manager of El Morell’s air separation unit and captain of CBT’s A-team, he conducted this program’s first event.



France – Messer commitment goes to the head of the class

In 2017, Messer in France launched a collaboration with the Paris school district and the Franco-German Chamber of Commerce and Industry. It was based on the “Schools-Companies” platform, which aims to establish contacts between schools, vocational training centers, and companies operating in France and Germany. Messer maintains a partnership with a technical

high school that offers training courses involving technical skills used at Messer. This includes visits to our filling center in Mitry-Mory and short internships. Our experts lecture on topics related to the curriculum, such as safety and quality in our industry. Students also made a video that was presented at a national high school competition in June 2019.

Germany – International students in the corporate headquarters

In July 2019, Adolf Walth, Executive Vice President of the Messer Group, led 25 international students through Messer’s industrial gases exhibit in Bad Soden. The tour was initiated by Weltweit e.V., a non-profit association that makes it possible for students to carry out development projects in their home

country. All 25 young people were studying for a Master’s degree under a German Academic Exchange Service (DAAD) scholarship. Their visit to Messer offered them insights into Messer’s corporate history and the manufacture and use of gases.

Hungary – Smartbooks bring schoolwork to life

In January 2019, Messer in Hungary directed two short films shot on-location at our plant site and starring the air separation unit and the dry ice production unit. Both short films can be seen on digital smartbooks that students use in physics and chemistry class. Tamás Bándy, Director of Energy Management at Messer Hungarogáz, was also behind the camera,

clearly explaining the complex technical processes in a way that students as young as 13 years old can understand. The project was carried out at the request of the Hungarian Institute for Educational Research and Development at Eszterházy Károly University in Eger.

Hungary – Interactive physics class for the blind

At the initiative of the Hungarian Institute for the Blind, Messer in Hungary hosted an interactive physics class for the blind, so that blind people could personally experience the amazing world of physics. Experiments using touch and voice in combi-

nation with funny stories served to spark interest in the exciting physical properties of gases. The enthusiasm of the audience showed the value of finding new ways to communicate the fascinating message of science.

Vietnam – Sanitary facilities for elementary schools

Messer Haiphong provided support to the An Duong Elementary School in Haiphong for the modernization of its sanitary facilities.

The new 70 m² (750 ft²) sanitary unit was officially opened in September 2019.

Commitment to combat poverty and fight for social justice

China – Donations for the poor

To relieve poverty and support disabled persons, the local Chinese Messer company ZMG donated 30,000 renminbi to

needy families in the area.

USA – Day to help others

In November 2019, the employees at our location in Stewartsville, New Jersey, gathered for a day as volunteers to help deserving members of the community. The employees donated their time and worked together with the nearby Saint Philip & Saint James Church to distribute some 400 Thanksgiving

meals to needy families just in time for the holiday. It was a team-building exercise in the service of a good cause and offered proof of Messer's commitment to mobilize for the well-being of society and of the communities where we work.

Americas – Season of giving

During the Messer "Season of Giving Campaign" in December 2019, employees of various locations in the USA, Canada, Brazil, Colombia and Chile took time out to give something back to their community. From Bogotá to Vancouver, Messer volunteers

donated essential non-perishable goods to local food banks, assisted more than 30,000 families, and worked together with local hospitals and charities over the Christmas holidays, in order to support the neighborhoods around our companies.

Highlights

USA – The employees of the headquarters of Messer Americas in Bridgewater, New Jersey, donated food to feed hungry people in the local community. Just in time for the Christmas holidays, the volunteer helpers gave the donations to the Food Bank Network of Somerset County in New Jersey.

Volunteers in Vancouver, Washington, collected and delivered more than 300 kilogram of food to the Clark County Salvation Army Food Bank, which distributed it to the local community during the holidays.

Colombia – Messer Colombia organized a food drive to collect and donate food to feed many families during the holidays. The employees of Messer Colombia also volunteered at the Food Bank of Bogotá, where they packaged nutritious food to support some of the city's most impoverished communities. Messer Colombia employees also collected Christmas gifts for children receiving care under the REMEO program. A team of

Messer volunteers visited the REMEO facilities, spending time with the children and reading to them. Messer employees from throughout Colombia distributed and donated gifts to young patients in several cities where our REMEO program operates. The gifts brought a smile of delight to the face of many children receiving ventilator support.

Brazil – Dedicated volunteers from Messer Gases Brazil completed a successful holiday food drive, collecting and distributing tons of non-perishable items to feed the needy during the holidays.

The Messer Brazil Industrial Maintenance team also worked together with the Rio de Janeiro-based charity SBA (Anchieta Charitable Society) to collect desperately needed goods and distribute them to needy families.

Chile – Employees of Messer in Chile visited the children of Moritas Garden, where volunteers organized activities such as face-painting, a puppet show and a visit from Santa. In collab-

oration with our logistics services provider in Chile, Red Cargo, Messer employees distributed gifts and were glad to see the beaming smiles on the faces of the children.



The foundations

On April 6, 1978, Dr. Hans Messer and his family established the private charitable foundation now known as the Dr. Hans Messer Foundation. The independent foundation is a shareholder of the Messer Group and promotes education, science and research throughout Germany.

Dr. Hans Messer Foundation

The purpose of any foundation should be to support projects and ideas that are given no or insufficient consideration within the framework of basic state provision. The Dr. Hans Messer Foundation also pursues this idea by supporting and recognizing scientists who gain prominence through special or outstanding achievements, by awarding scholarships and prizes, and by supporting scientific and educational establishments.

The Dr. Hans Messer Foundation's activities encompass support and funding as well as operational aspects. It operates as a charitable foundation with legal capacity established under private law, making a varied and ongoing contribution to the promotion of science and research as well as school and vocational education. This work is becoming increasingly important in this day and age as the state is often unable to provide sufficient funding. In this way, thirst for education, innovation, scientific curiosity and pioneering spirit are rewarded.

The purpose of the Dr. Hans Messer Foundation is to be a driving force for education and science. According to its charter, the Dr. Hans Messer Foundation supports science and research, public and vocational education, and the provision of help to students. In all, more than 20 million euros has been spent for foundation purposes to date. The board of the Dr. Hans Messer Foundation determines the focus of the foundation's work with

Foundation prizes of the Dr. Hans Messer Foundation

To provide specifically targeted support to young scientists and their research, the Dr. Hans Messer Foundation continuously awards foundation prizes. The Foundation Prize 2019, for example, was given to the Technical University of Darmstadt, Germany, for the promotion of outstanding achievements in the areas of natural science and engineering as well as economics, social sciences and the humanities. At 50,000 euros, it carries the highest endowment of any award for young scientists at the

In the social and health spheres, Ria Messer established a second charitable foundation – today's Ria Messer Foundation – in memory of her husband Dr. Hans Messer.

The activities of both charitable foundations are independent of those of the Messer Group.

the aim of defining a specific direction. The focal areas can change, however, or apply for only a certain period of time. The foundation currently focuses on science and research grants primarily in the STEM areas, i.e. science, technology, engineering and mathematics. The field of medicine also receives regular funding. The Dr. Hans Messer Foundation awards a number of different scholarships to students, undergraduates, doctoral candidates and professionals. In addition, special scholarship programs are also set up.

In 2019, the Dr. Hans Messer Foundation funded many projects of non-profit organizations. Examples of organizations supported include Probono School Partnerships for One World of Frankfurt, Germany, the Institute of Physics and the Institute of Mathematics and Computer Science Education of Goethe University Frankfurt am Main, Germany, the Department of Nephrology at the University Hospital Frankfurt am Main, the Eberhard Karls University of Tübingen, Germany, including its Institute of Evolution and Ecology, the German University Foundation in Bonn, the Institute for Youth Management Foundation in Heidelberg, Germany, the Association of the Frankfurt Pharmacy School (Verein Frankfurter Pharmazieschule e.V.) and the Altkönigschule Booster Club (Förderverein der Altkönigschule e.V.) in Königstein, Germany. Various scholarships are also awarded to students and undergraduates.

Technical University of Darmstadt, Germany. The prize is intended to fund material and personnel resources for research projects.

In 2019, the Foundation Prize for the Technical University of Darmstadt, Germany, was awarded to Dr. Bianca Prietl of the Department of History and Social Sciences for the topic "Digitalization, knowledge production and society."

In the wake of advanced digitalization and datafication, digital data technologies and algorithmic decision systems are of growing importance for the production of knowledge in more and more areas of society. The use of data-based (self-)learning algorithms is particularly controversial. In Germany, these are currently found mainly in so-called “decision support systems.” In this case, algorithms advise decision-makers. Thus, knowledge generated by means of digital technologies also participates more and more often in the evaluation of social issues. As a result, these techniques are becoming directly relevant to social participation opportunities and life chances.

Bianca Prietl’s post-doctoral project aims to examine the social preconditions and consequences of digitalization and knowledge production. To that end, Bianca Prietl intends to conduct a comparative investigation in the form of an empirical/qualitative study of the practical application of digital data technologies

in German-speaking countries in three pertinent fields: in the computational social sciences, which, in the manner of the already more successful digital humanities, claim to generate new and better knowledge of essential social factors than the established social sciences do; at employment agencies that organize work automatically with “algorithmic management”; and in the context of political analyses, in which digital sources produce knowledge about attitudes and opinions as a basis for political action. The project falls within the category of basic research, but at the same time it will also provide an analytical basis for the interdisciplinary development of innovative and socially equitable technologies.

A cross-disciplinary awards committee with representation from the foundation and the university board determines the prize recipients.

Ria Messer Foundation

The aim of the Ria Messer Foundation is to support the most vulnerable members of our society. In accordance with the charter, the foundation supports charitable projects and public welfare projects.

Even today, there are many people who are more vulnerable than others. People who are sick or need care, people who do not receive enough support in our society, but desperately need help. This is precisely where the Ria Messer Foundation seeks to provide assistance. In keeping with the times, it fulfills the binding social contract implicit in the will of the founder: helping other people.

The Ria Messer Foundation treats all people with respect and tolerance. Its activities encompass support and funding as well as operational aspects. It has been a charitable dependent foundation established under private law since it was founded. It is held in trust by the Dr. Hans Messer Foundation.

The purpose of the foundation is to provide support to specific individuals within the meaning of § 53 AO (German tax code) and to promote social welfare. This purpose shall be achieved by helping individuals who are dependent on the help of others as a result of their physical, mental or psychological condition (§ 53 No. 1 AO of the German tax code), who find themselves in need through no fault of their own, for example as a result of natural disasters, who are in need according to § 53 No. 2

Clause 3 AO of the German tax code, by providing one-off or ongoing financial support in order to remedy their need in the long term or by financially aiding the work of the leading independent welfare organizations or other tax-privileged bodies operating in the charitable sector or other tax-privileged organizations providing care and treatment to individuals suffering from serious illnesses through no fault of their own.

In 2019, the Ria Messer Foundation funded many projects of non-profit organizations. Examples of organizations it supported include Frankfurter Lust auf besser Leben gGmbH, the German Multiple Sclerosis Society Frankfurt, the Praunheimer Werkstätten, the Diakonie, Care-for-Rare Foundation in Munich and the Support Association of German Children’s Hearts, Perspectives Psychosocial Association for the Promotion of Residential, Work and Leisure Initiatives, the Citizen’s Institute of Frankfurt, the Children’s Future Foundation, the Heydenmühle Foundation and Zwerg Nase gGmbH, all in Germany.



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Our commitment in climate protection also extends to this sustainability report: We support a CO₂ reduction project in the bvdm's (Bundesverband Druck und Medien) climate initiative with the goal of reducing flue gas emissions in Kenya and at the same time support water treatment.

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For further information about our climate protection commitment, please scan the QR code.



The mark of
 responsible forestry



