



Höganäs AB

Sustainability Report 2018

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This is Höganäs

At Höganäs, we are convinced that metal powders provide endless opportunities, starting with – but also far beyond – their traditional use in powder metallurgy (PM) for automotive components. Metal powders can help our customers (and their customers) reduce material and energy consumption or prolong lifetime of their products. Metal powder can also enable new and better technologies that make final products more efficient and with lower lifecycle impact.

Indeed, in our opinion, metal powders can be an important tool towards improved industrial sustainability. That is why our vision is to “Inspire industry to make more with less”.

Höganäs' origins date back to 1797, when coal mining started in the fishing village of Hyggenäs on the south-west coast of Sweden. Coal mining, bricks, refractory materials and salt-glazed pottery have played important parts in the company's history. In 1910, the first process for metal production was invented, and now we focus mainly on metal powders and powder technology.

Today, we have a global presence, even though our headquarters remain in the municipality of Höganäs. With almost 2,500 co-workers and a product portfolio that contains more than 3,500 products, we serve about 3,000 customers in 75 countries. (All numbers include newly acquired companies.)

Höganäs short facts

(All numbers include newly acquired companies)

- 18 production units in 11 countries on 4 continents
- Sales offices and/or operations units in 17 countries
- About 3,000 customers in 75 countries
- A total production capacity of about 500,000 tonnes of metal powder
- About 950 valid patents on processes and products
- More than 3,500 products, mostly customer specific
- 2,500 co-workers
- Established in 1797 as a coal mining company
- Turnover 2018: 10,361 (8,223) MSEK
- Equity 2018: 9,046 (8,405) MSEK
- Net debt 2018: 6,235 (4,167) MSEK
- Höganäs is a private limited company owned by FAM and Lindéngruppen

Countries of operation		
Americas	APAC	EMEA
Brazil	China	Belgium
USA	Hong Kong	France
	India	Germany
	Japan	Great Britain
	South Korea	Italy
	Taiwan	Russia
		Spain
		Sweden
		Switzerland

Engagement in associations and initiatives	
Type of engagement	Organization
Höganäs holds a position on the governance body	European Powder Metallurgy Association (EPMA)
	Metal Powder Industries Federation (MPIF)
	Powder Metallurgy Association of India (PMAI)
Höganäs participates in projects and committees	Japan Powder Metallurgy Association (JPMA)
	Jernkontoret (Swedish steel producers' association)
	Eurofer (European steel association) represented by Jernkontoret
	Korean Powder Metallurgy Institute (KPMI)
	American Water Works Association
	China Powder Metallurgy Alliance (CPMA)
Höganäs is a signatory	UN Global Compact

Introduction – about this report

- This report presents the sustainability performance of Höganäs Holding AB, also called Höganäs Group, for the full year of 2018. As the operational responsibility for the Höganäs Group is delegated to Höganäs AB's Board of Directors, the sustainability report focuses on Höganäs AB and its subsidiaries. The owners of the Höganäs Group are represented in Höganäs AB's Board of Directors.
- The report has been prepared in accordance with the GRI Standards: Core option and in accordance with Swedish regulation (Årsredovisningslag) regarding disclosure of non-financial information.
- The report consists of a descriptive part and a GRI index with references. Data presented includes in general all companies within the Group, i.e. Höganäs AB and its subsidiaries. Where exceptions are made, this is commented on. Management approach, boundaries, omissions and additional explanations are found in connection to each topic.
- The report has been approved by the Höganäs Board of Directors. The report has not been subject to external assurance.
- The previous report was published April 12, 2018. The reporting cycle is annual.
- The list of entities included in the consolidated financial statements is found in the Höganäs Holding AB's Annual Report 2018. Sustainability data for Alvier AG PM-Technology, Alvier Mechatronics GmbH, Metasphere Technology and H.C. Starck Surface Technology and Ceramic Powders GmbH is not included in this report, as the integration process is still ongoing. Where exceptions are made, this is commented on.
- There are no significant re-statements of information from the previous report further to what is included under Highlights during 2018.
- Boundaries and management approach is reported under each chapter for relevant material topics.

For questions regarding the report, you are welcome to address them to: Senior Vice President Sustainability Nicklas Lång at nicklas.lang@hoganas.com or Sustainability Manager Raissa Kruse at raissa.kruse@hoganas.com.

Highlights during 2018

Höganäs acquires H.C. Starck division and Alvier PM-Technology

During 2018, Höganäs closed two acquisitions – H.C. Starck Surface Technology and Ceramic Powders division and Alvier AG PM-Technology.

H.C. Starck Surface Technology and Ceramic Powders GmbH is a leading global manufacturer of metal powders for surface coating and additive manufacturing, as well as advanced ceramic powders. End-markets are for example industrial gas turbines, aviation, welding, thermal management and clean energy. The entity operates two production facilities in Germany and has 430 co-workers. Their broad product portfolio and strong trademarks will expand our existing product portfolio, and add significant product development capabilities and knowhow to Höganäs. The transaction was subject to the approval of relevant authorities and was closed at the end of February 2018.

Alvier AG PM-Technology is Europe's largest powder metallurgy (PM) tooling manufacturer and was founded 30 years ago in Buchs, Switzerland. It is today regarded as the world's leading independent provider of PM and SMC (Soft Magnetic Composite) tooling solutions. Alvier PM-Technology operates on behalf of customers across four continents and in more than 20 countries and has collaborated with Höganäs since 2005 in projects advancing what is possible within PM technology. The majority of the customer relationships are long-term. The acquisition was effectuated in January, 2018. All Alvier's customer relationships continue as today.



Alvier Mechatronics broadens Höganäs offering

Alvier Mechatronics GmbH was established as a new entity within the Höganäs Group in autumn 2018. Focus will be to design and develop future proof mechatronic drive solutions for next generation automotive applications and to create more efficient, compact and light electric drive systems. During late Q1 2019, a new Head Office will open in Bad Dürkheim, Germany. The mission is to have an impact in the electrification of the automotive industry by creating new standards for electric drive units, powertrain and components.

Inauguration of the world's first renewable energy plant for the steel industry

On June 19 2018, Cortus Energy and Höganäs inaugurated the world's first plant for demonstrating, on an industrial scale, fossil-free steel production based on gasification of biomass by using a new technology, the Woodroll® process. Cortus Energy has delivered, installed and will run the plant on Höganäs' site. The investment is based on a combination of grants from Klimatklivet and the Swedish Energy Agency and capital from Cortus and Höganäs. Industrial partners are ABB, Calderys, SSAB and Södra. When the pilot plant is in full operation, the potential reduction of our carbon dioxide emissions is 10,000 tonnes yearly.



The Crown Princess Couple’s visit to Höganäs

On Friday 16 November, The Swedish Crown Princess Couple visited Höganäs to learn about our efforts to make our steel production more sustainable. The programme for The Crown Princess Couple included both presentations about our sustainability strategy, an exhibition at which our co-workers described and demonstrated different metal powder applications, a tour of the facility for producing green energy gas and a visit to our subsidiary for additive manufacturing, Digital Metal®.



Höganäs celebrates 25th anniversary in China and upgrades mixing station

In November 2018, Höganäs not only celebrated its 25th anniversary in China but also inaugurated an upgraded and state-of-the-art mixing station, which will bring new opportunities for the metal powder industry in China. A large number of honorary guests, including representatives of the local government, industry associations and customers, attended the ceremony that took place in Shanghai.

In 1993, Höganäs began a joint venture with a Chinese partner and later on took full control of the company, becoming one of the first foreign enterprises to establish itself in Qing-Pu. It was a commitment from Höganäs that showed it has long-term ambitions to stay in China. Over the years, we have made numerous investments in China; the new mixing station in Shanghai is now the most modern plant in the Höganäs Group. The plant has a high level of automation and a substantially upgraded material handling process, from when the powder arrives from Sweden to when it is delivered as finished product to the customer. The new equipment that has been installed uses the latest technologies and will significantly increase capacity and improve safety.



Höganäs’ Cleanit® technology receives conditional approval in California

Höganäs received conditional approval from the California Environmental Protection Agency (EPA) for its Cleanit® LC technology, a process solution created to purify drinking water, removing contaminants such as hexavalent chromium, arsenic, lead, selenium, phosphates and radioactive isotopes. Following the independent evaluation of a two-phase conditional acceptance challenge study, California’s EPA determined that Cleanit® LC is a cost-effective, safe technology for hexavalent chromium treatment and that it can be used by public water systems in California.

For the study, we demonstrated the effectiveness of Cleanit® LC at the difficult to treat Well 14 in Los Banos, California from May 2016 through February 2017. During testing, the cleaned water showed invariably non-detect levels of hexavalent chromium and arsenic.



Renewed environmental permit secures continued growth

Höganäs received a renewed environmental permit covering the operations at Höganäs Sweden AB, the company's largest production site. The environmental permit provides long-term conditions, allowing a continued capacity growth in the years to come. New is our possibility to operate pilot scale production, a foundation for fast-tracking time to market. A new set of environmental conditions limit the impact of production and secure protection of the local community and the environment. The limiting conditions address emissions, noise, effects of transports through the local community and more. We monitor the operations through an environmental monitoring programme and file an annual environmental report to the competent authority.



Höganäs and sustainability

From our CEO



The year 2018 was characterized by high demand for our metal powders, organizational changes and integration of new acquisitions.

Even though high demand is positive, it also brings challenges. We have done our utmost to balance our customers' needs and deliver according to plan. Our co-workers have accomplished great results despite the high workload.

The organizational change was necessary despite the previous change being only 1.5 years ago. This was because we had the opportunity to clarify roles and responsibilities and amend identified weaknesses. The outcome of the People Satisfaction survey carried out in 2017 served as great input for our work on upgrading the organization. We will now let the new structure settle.

The acquisitions of Surface Technology and Ceramic Powders and Alvier PM-Technology have enriched Höganäs with new colleagues, competences and a range of products and services that add additional value to our business. We are happy to welcome 450 new co-workers and our efforts to integrate them and the business into our Group are ongoing.

Our climb towards improved sustainability performance continued during 2018, even though we also experienced some setbacks. Of our ten numeric targets in 2018, we are well on track with some, need more information to understand the progress on a couple, and conclude that with some of them there remains work to be done.

The different targets are commented on in each chapter.

Safety has long been our highest priority and we have seen progress in a decreasing number of accidents. Nevertheless, during 2018 we suffered a severe accident at our atomizing plant in Stony Creek, Pennsylvania, USA, where a co-worker lost an arm. The root cause analysis resulted in additional safety precautions at all our atomizing facilities to prevent similar accidents from happening again.

During the year, we strengthened the organization with a new position that will co-ordinate and drive the global safety agenda towards zero accidents within operations. The ongoing lean project will furthermore enhance our safety performance through 5S (Sort, Set in order, Shine, Standardize and Sustain), with an extra S for Safety.

Our initiatives to minimize fossil fuel use, such as the plant for "green" energy gas based on gasification of biomass and the trial with bio-coke, are important steps towards our vision of climate neutral operations. The mapping of carbon emission sources started in 2018 will help us pinpoint the right activities and targets going forward. It will serve as the foundation for our Climate Roadmap.

Our initiative to decrease energy use by 10 percent by 2020 compared to 2010 is on track. The 2018 result was an 8.7 percent decrease. It will be a challenge to keep up the pace and to scale up good energy-saving solutions in the entire organization. The decision to certify our energy intensive operations according to ISO 50001, Energy management, will fuel the progress.

By the end of 2018, the global economy showed signs of instability, which might slow down our ability to make sustainability investments. A recession can also hamper our customers' willingness to invest in new technologies within important areas, such as the next generation of electric drivelines, where metal powder technology could be a game-changer.

Two significant automotive trends during 2018 were electrification and tougher emission regulations. The speed of conversion to electric drivelines will affect us, as around 65 percent of our products go to the automotive industry. High costs for batteries and charging infrastructure can slow down the shift, while tougher emission regulations may have the opposite effect.

Another trend is flexible manufacturing, with short lead times, small batches and customized products, which increase demand for local and regional services.

In the years to come, we will continue to work according to our sustainability strategy as visualised in Mount Sustainability, and to show our support for the UN Global Compact. We stand behind the [17 UN Global Goals as stated by the Swedish Steel Industry](#) and will assess which goals to focus on as an individual company.

As we are convinced that metal powder can improve society, it is natural for us to integrate sustainability in our business. We strive not only to reduce our own negative impact, but also to contribute positively to society through more sustainable solutions. Systematic assessment of our products' lifecycles will help us meet customer expectations and promote the products' sustainability advantages with a knowledge-based approach.

The sustainability challenges society faces are real. Everyone – government, business, academia, NGO's – must join forces and do what we can for our world. We acknowledge the complexity and, as the biggest player in our field, our responsibility to drive the industry development forward by investing resources and time. In this report, we aim to be transparent and truthfully describe our performance and challenges ahead.

Best regards,

Fredrik Emilson

President and CEO, Höganäs Group

Our place in society

Höganäs' contribution to society is to provide metal power products and solutions that enable improved industrial sustainability by making our customers' final products more resource and energy efficient, with lower negative impact during their lifecycle.

Looking at the whole steel industry, Höganäs is a relatively small player, which means that the possibility to influence the industry is limited. We are however big in our niche – metal powders – where we take the opportunities to inspire improvements in our sphere of influence.

Our position in the value chain, several steps upstream from the end users, makes demands from consumers slow to reach us. We need to proactively listen to the signals coming from our customers' customer and further downstream to be prepared for future demands.



Global trends that will impact Höganäs' business

Electrification is a trend in the automotive industry, aimed at creating the next generation e-drivelines. This will in turn mean lighter cars without combustion engines, hence a lower amount of metal powder components. On the other hand, there is an opportunity for Höganäs to widen the use of soft magnetic composites.

Sustainability means that both customers and industries are looking for more sustainable solutions, that do not waste resources but rather improve society. In society at large, we see an increased interest in the sharing economy, such as car pools. This will influence the car industry going forward, and therefore us too.

Mass customization is a trend that comes from the manufacturing industry, where demands for shorter series, quicker shifts and increased customizations emerge. Customers are also increasingly asking for shorter lead times, which demands production close to the markets.

Digital transformation means that data is more available to influence how we develop new products. It can also help us understand how our products are used, for instance how the powder mix works in the press and after sintering. Here we must also be on the look out for how new business models may affect our own business.

Sustainability challenges in our industry

Even though metal powders are superior in many applications, they are still made of materials from the earth's crust, which means we have to address the sustainability challenges that are typical for the mining and metal industry as a whole.

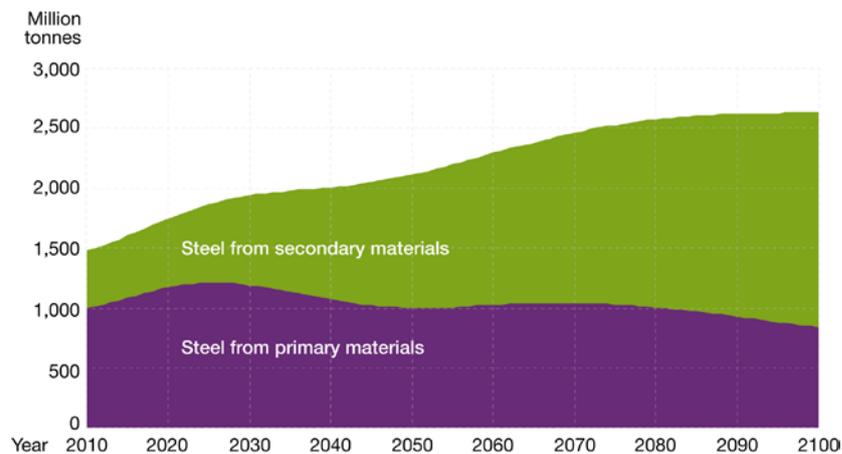
Our industry:

- uses raw materials from the earth's crust
- has production processes that consume energy, of which fossil energy forms the largest part
- incinerates carbon-containing materials to reduce metal oxide into metal, which generates carbon emissions
- has processes that need to be closely monitored and controlled to be safe
- uses substances that could potentially be harmful
- uses water and land
- creates emissions to air and water discharges
- creates waste
- deals with social and ethical issues related to mining

On the other hand, our industry provides the necessary materials for basic needs like infrastructure, buildings, machinery as well as countless other technical, medical and scientific needs. The greatest challenge for the industry is to provide these essential materials in a responsible manner where the benefits overshadow the negative impact. Metals can be recycled and reused innumerable times, making well-functioning systems for managing and collecting end-of-life materials essential for the metal industry.

Global raw steel production

Of all the steel that has been produced to date, approximately 75 percent is still in use. The average life for steel products in infrastructure is 30-40 years. An increased amount of steel products will be needed for infrastructure, clean water and sanitation in underdeveloped regions as part of sustainable development. This means that, even though steel is recycled, iron ore needs to be added into the “steel cycle” for long into the future.



Source: The steel scrap age, Pauliuk et al (2013)

People and communities

The global society, as well as local communities and their members, depend on profitable companies creating stability and prosperity. The metal industry is an important building block in the global economy and we are proud to contribute by running a solid business reflecting our ethical principles and values.

A large industrial facility affects people living nearby. Negative impact like noise, dust and heavy traffic in and out of the industrial compound needs to be managed thoroughly and in response to community expectations. The working environment can also be a challenge, with hot surfaces, high temperatures and exposure to hazardous substances. The working environment must be safe and injuries must be avoided. Our factories must be clean and well-maintained in order to blend seamlessly into the neighbourhood without disturbances.

On the positive side, the local community receives the economic benefits from a strong business that pays taxes, provides job opportunities and contributes financially to various local initiatives. We also generate business for a large number of other companies that provide goods and services.

By listening to our neighbours, co-workers and other stakeholders, and by taking part in the development of the local community, we endeavour to be a responsible citizen and employer wherever we operate.



A global supply chain with a local touch

In 2018, Höganäs Group counted up to 535 suppliers of direct materials and approximately 6,500 suppliers of indirect materials, transportation and other services. We are dependent on a steady supply of raw materials and other goods and services to be efficient, and appreciate the importance of good business relations with our suppliers.

Ethical business behaviour rooted in a common value base builds mutual trust that enables smooth and uninterrupted supply. We choose our suppliers with care, based on their performance and their ability to comply with our demands. Compliance towards internationally agreed principles concerning business ethics, respect for human rights and fair labour standards, as well as environmental precautions, is fundamental.

During 2018, an approach to standardize the sourcing process for Direct Material was initiated by globally implementing common definitions and ways of working. (Direct material consists of raw materials, process consumables and packaging materials.)



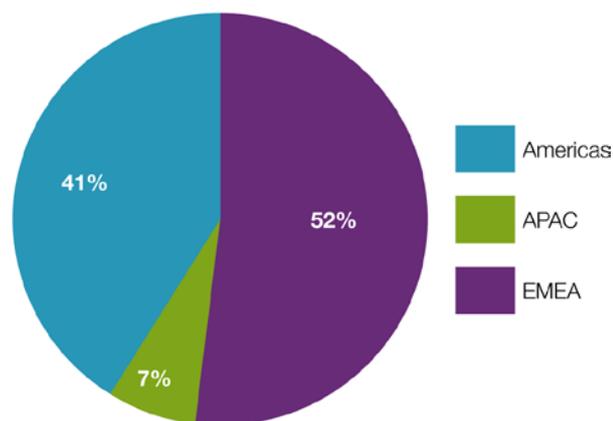
Value creation in the supply chain

We source raw materials globally and coordinate our purchases when this is practical and beneficial, from both a financial and environmental perspective. To minimize transportation, we prioritize local or regional suppliers and try to avoid transcontinental sourcing whenever possible. Our largest direct material spends are iron scrap, nickel and iron ore.

Most external services are purchased locally or within the country of operation. Höganäs is a large and stable business partner to many small and medium sized companies close to our operations around the globe.

Our total spend on external suppliers in 2018 was 7,753 MSEK of which 52 percent was spent in Europe-Middle East, 41 percent in the Americas and 7 percent in Asia-Pacific Ocean.

Spend per continent



Challenges in the supply chain

Our supply chain consists of suppliers of raw materials located around the globe, ranging from upstream suppliers, like mining companies, to downstream suppliers, such as highly technical lubricant suppliers.

We have policies and procedures on how to mitigate risks connected to conflict minerals and artisanal mining in our supply chain. We have also taken a stance against the social challenges in the cobalt industry related to safety, labour standards and human rights. We systematically work to ensure that our suppliers follow internationally agreed principles and comply with our Code of Conduct.

Conflict minerals are natural resources extracted in a conflict zone where armies or rebel groups sell the minerals to finance continued armed conflict. The four most commonly mined conflict minerals are tin, wolframite (for tungsten), coltan (for tantalum) and gold ore. These minerals are essential in the manufacture of a variety of devices, including consumer electronics such as mobile phones, laptops and MP3 players. The most prominent contemporary example has been the eastern provinces of the Democratic Republic of the Congo (DRC), where various armies, rebel groups and outside actors have profited from mining while contributing to violence and exploitation during wars in the region.

Artisanal mining is small-scale mining of metals, minerals or stones carried out independently by enterprises or individuals that employ workers for mining, but generally use manually-intensive methods, work with hand tools and without the necessary safety precautions and social responsibility. As a result, artisanal mining is connected to human rights risks as well as substandard and unsafe working conditions. Child labour and a large number of fatal accidents have been reported in artisanal mines.

Approximately 15 percent of our raw materials are sourced through distribution channels or traders, which is an increase of 3 percent in comparison to 2017.

Sourcing safe and sustainable transportation

We source transportation while well aware of this sector's environmental impact, safety issues and even labour conditions that may not live up to standards. Suppliers of

transporting services are contracted on at least an annual basis after an approval process where commercial, environmental, safety and social aspects are considered. Performance is evaluated annually and a new approval process takes place before contracts are renewed.

We carry out monthly spot-checks on vehicles arriving to our sites, where for example quality and safety issues are inspected. The direct contact with the drivers gives us insights and sends a strong message about the importance of complying with our requirements. In 2018, no serious deviations were discovered. The few minor non-compliances found were mainly linked to vehicle maintenance and road safety.

Read more about how we work to minimize environmental impact from transportation in the section on Carbon footprint from transportation (see page 61).

Supply chain development

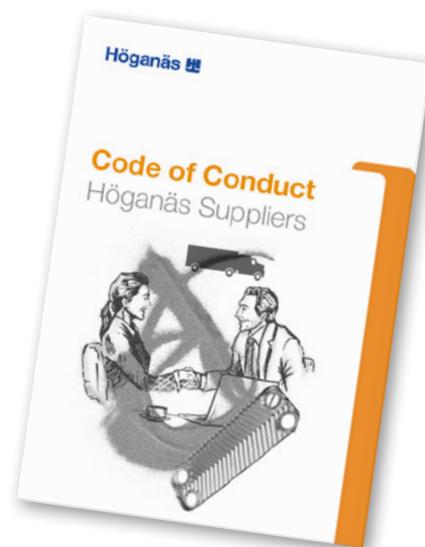
We assess the risks of violation of human rights and unethical business behaviour in the supply chain. We do this by looking at inherited risks connected to the supply category and the country where the suppliers operate, and by evaluating the individual supplier according to criteria based on our Code of Conduct for suppliers. It is a challenge to evaluate and monitor supplier performance, but we see it as a long-term commitment where we continuously work together with our suppliers to achieve improvements.

To date we have communicated our Supplier Code of Conduct, including our statement against corruption, to approximately 16 percent of our direct material suppliers. Our objective is to communicate our Supplier Code of Conduct to all new suppliers and to existing suppliers in connection to renewed agreements. 8 new suppliers of direct materials and 4 new suppliers of indirect materials came on-board last year, and of those, 100 percent were evaluated using our Supplier Code of Conduct, which includes both environmental and social criteria.

We also reach out to a number of prioritized existing suppliers each year and ask them to fill in a self-assessment based on our Code of Conduct for suppliers. In 2018, 50 suppliers responded to this self-assessment. The objective is that 100 percent of our prioritized suppliers shall respond before year-end 2020.

Incidents, non-compliances and identified increased risks concerning for example child labour, forced labour or freedom of association are reported through the group-wide reporting system. During 2018, no such cases were reported.

When we find non-compliances of our Code of Conduct, or circumstances that indicate elevated risk for deviations, we carry out supplier audits. During 2018, we identified reasons to carry out further assessments on some suppliers, whereas there were no identified needs to carry out audits.



Supplier partnerships lead to efficient shipping solutions



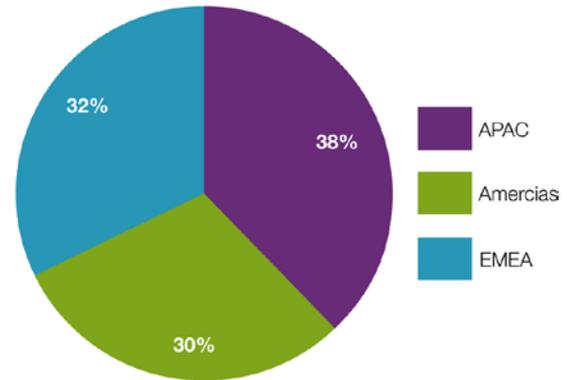
In Sweden, the sea freight for inbound raw materials (iron ore) was improved by a 16 percent increase in payload, which saved a total of seven ship journeys of 1,500 km each. Careful planning and supplier partnerships made this possible.

Solutions that create value

Despite their minute size, metal powders have astounding powers. Particle shape, particle size distribution and chemical composition can be adapted to fit a wide range of different needs. For example, press-ready mixes that easily flow and fill cavities in the mould, enabling pressing of intricate components, or powder-based cleaning media with huge surface area, which allow for efficient reaction with contaminants in air, water and soil. All of this is our home turf. We have developed metal powders and adapted their properties to various customers and markets since the 1950s.

Today, our product portfolio contains more than 3,500 products, and we serve about 3,000 customers in 75 countries. Metal powders enable efficient production and prolonged product life in many different markets ranging from automotive, construction and mining, consumer goods and processing industries to agriculture, food fortification, water and soil treatment and the energy sector. Our metal powders are used in a wide range of applications:

Sales per continent



Powder metallurgy components

The design of structural components as pressed and sintered powder-metal parts has many inherent advantages over competing metalworking technologies. Using powder metallurgy (PM), complex parts that are close to net-shape, and with good part-to-part uniformity, can efficiently be mass-produced with few production steps. This leads to high material utilization, low energy consumption and reduced waste. PM components can also be engineered with unique value-adding features, such as wear and corrosion resistance, thermal properties and filtration capability.

How we helped a customer reduce their scrap rate



One of our Powder Metallurgy (PM) customers experienced problems with surface defects, when producing automotive PM components. The defects caused scrap rates of 3-5 percent of parts produced. Only a scrap rate below 0.5 percent was acceptable. Several samples, both rejected and accepted parts, were sent to our tech centre in Shanghai, China for investigation. With our extensive PM experience, and access to the tech centre's state of the art investigation tools, our engineers were able to determine the root cause.

Agglomerates rich in lubricant and graphite were formed and pressed into the surface of the components during compaction, later seen as surface defects after sintering. The agglomerates are more prone to be formed in hot and humid conditions, such as a tropical climate. Based on advice from our tech centre, the customer improved shop-floor housekeeping and introduced more frequent cleaning of critical equipment, like the hopper, filling hose and fill shoe. As a result, scrap rates were reduced to well below the acceptable limit.

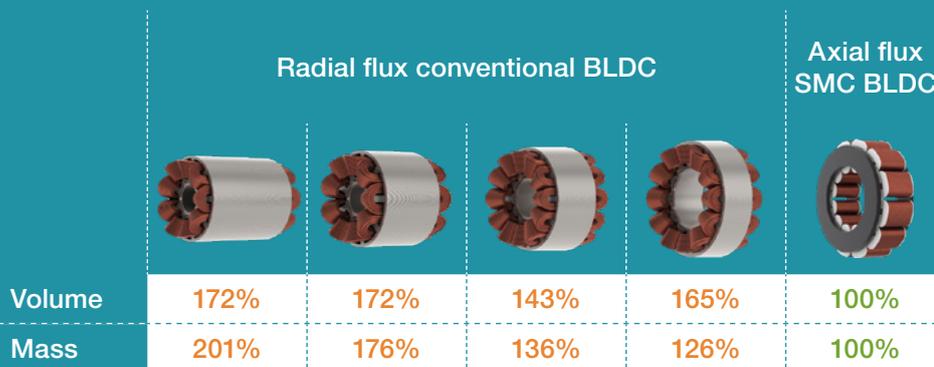
Electromagnetic applications

Rotating and linear machines, sensors, fast-switching solenoids and inductive components can be optimized by using metal powders such as soft magnetic composites (SMC). The uniformity of the powder's electromagnetic properties in all three dimensions enables maximized utilization of the electromagnetically active materials, thereby minimizing the amount of copper windings and permanent magnets needed.

Raw material optimization solutions for electric applications

A robust axial flux brushless direct current (BLDC) motor for integration with the impeller of an electric water pump for automotive applications exemplifies the advantages using soft magnetic composites (SMC). Simplicity in manufacturing and application integration have been key for this technical concept, which our tech centre in Sweden has

developed and tested for demonstration purposes. The stator is a single tool component and the sealing surface between the dry and the wet parts of the pump is flat. Moreover, this machine outclasses conventional radial flux BLDC motors regarding mass and volume, and thus raw material need.



Impeller and stator of an electric water pump

Surface coating

The primary aim of thermal surfacing techniques utilising metal powders, is to improve a component's resistance to, for example, wear or corrosion, and thus increase its lifetime. This is done in a cost-effective and sustainable way, as the component itself can be made in a low-alloyed material, and only the surfaces exposed to wear and/or corrosion are coated with a high-alloyed material.

Coated feeding screw multiplies service life



Wear resistant coating by Höganäs on a screw segment

A local workshop in Sweden contacted Höganäs as it needed help to extend the lifetime of one of its customized products, a feeding screw for clay transportation. The clay contains minerals which are highly abrasive. This in turn caused frequent maintenance stops and material waste as the threading had to be replaced and renovated after only 170 hours of use. In addition, as the thread was

worn down, the function of the screw deteriorated resulting in increased energy consumption.

Our tech centre developed a solution by Plasma Transferred Arc (PTA) welding a wear resistant layer containing carbides on the winding. The component was installed in autumn 2018 and was still in service five months later (when this report was written), thus extending service life significantly.

Additive manufacturing

Even though it is a relatively new technology, we believe that additive manufacturing has sustainability benefits. One potential advantage is improved resource efficiency in both the production and use phases due to the added design freedom. Another potential advantage is extended product life because of the stronger person-product affinity of customized goods. Industry can influence at least some of the possibilities within this emerging area, such as the optimization of both materials and processes for maximized resource utilization.

Water and soil treatment

As water shortage has become an urgent matter in many places across the world, we are happy to offer metal powder-based solutions for drinking water purification that can improve the lives of millions of people worldwide. Our portfolio also includes a process for industrial wastewater treatment, and media for soil and groundwater remediation.

Technical support and services

Höganäs is also a strong partner in offering application development capabilities, technical support and logistics solutions. Our customers can tap into our vast expertise, both in metal powders and their subsequent treatment in powder-based production processes, and in the design of a broad range of powder-based products.

As a world-leading supplier of powder materials, we want to contribute to our industry reaching its full potential by sharing our knowledge. Our tech centres around the world offer places where we can join forces, in close cooperation throughout the value-chain, to innovate and drive metal powder opportunities forward. Here we have the knowledge and the infrastructure to work with metal powder development, application design and prototyping as well as process optimization – an ideal platform for joint application engineering.

Our services range from straightforward prototyping or mechanical testing, to complete application development as exemplified by soft magnetic composites, where support encompasses material selection, electromagnetic application design and production process solutions. We support our customers with:

- selection of the right material and processing for a given application
- improvements in their supply chain, working environment and material utilization by offering press-ready mixes or ready-to-use brazing pastes in lean packaging, for example
- development, testing and prototyping of new designs and concepts in cooperation with one of our tech centres
- design of materials with specific properties
- troubleshooting – identifying root causes for application failures and indicating corrections to processes and material choice for robust manufacturing
- schools and onsite training

[Read more about our service offers here.](#)

More Höganäs – our values and principles

More Höganäs is our management philosophy. It includes our vision, our values and our principles for how we lead and how we work. The philosophy is there to guide us in our everyday work towards a sustainable business, where everyone can grow and develop. As a company, Höganäs makes a difference through our metal powder solutions and know-how.

Our vision: Inspire industry to make more with less

Metal powder technology provides endless opportunities; not only does it enable our customers to reduce their material and energy consumption, but it also helps them to use new and better techniques that make final products more efficient and less expensive. In short, metal powders are a resource-efficient alternative, suitable for many industries – that’s one of our contributions to a sustainable world.

Furthermore, with metal powder solutions, we can contribute to solving many of society’s pressing challenges, such as resource scarcity, shortage of clean water and the need for renewable energy.

Our vision to “Inspire industry to make more with less” is based on the firm conviction that the inherent power of metal powders can be utilised in industry to a much larger extent than it is today, and that metal powders can contribute to sustainable development.

Grinding the diamond

Back in 1797 Höganäs started as a coal-mining company, which soon moved into pottery and then, in the 1950’s, gradually shifted to metal powder technology. During this long history we have developed a successful global business based on world-class metal powder and know-how.

To remain profitable and grow further, we must future proof our business. It’s time to grind the diamond and become the best Höganäs we can possibly be.



Our values

Our values define what we stand for and what others can expect from someone working at Höganäs. We have four values, one for each key stakeholder: Customers, Co-workers, Owners and Society.

The stakeholders all have vested interests in Höganäs' business and development. To be able to deliver on our vision, "Inspire industry to make more with less", we must understand and balance their needs. Furthermore, when the owners', customers' and society's needs, e.g. for better products and increased profitability, coincide with our co-workers' development, then everyone is a winner

Vision

Inspire industry to make more with less

Management Philosophy

More Höganäs

Strategy

Create demand for metal powders

Goal

Sustainable profitable growth

Customers: We focus on customer success



We listen to and understand our customers' and their customers' wishes and requirements and what value they are looking for. We utilise this knowledge to invent better solutions for existing needs and keep customers ahead of future challenges.

We make sure everyone's competence and ability contributes to our customers' success. To keep finding new improvements and solutions for customers, we are constantly on the move, leading business change throughout the value chain.

Co-workers: We respect and believe in each other



We talk openly and honestly and listen to all ideas and opinions. Feedback is welcome as we see mistakes as opportunities to learn. We acknowledge everyone's talents and encourage each other to contribute to solutions. We understand that we all carry individual as well as team responsibilities and that we, through collaboration, reach greater heights.

We never compromise on our own or others' safety. Each of us helps build a workplace that makes us look forward to getting out of bed in the morning – a workplace that's inspiring and where we have fun together.

Owners: We create long-term value



The Höganäs brand represents long-term, reliable business. As the market leader, we embrace our responsibility to develop and expand metal powder technology. We are relentless in finding new markets for metal powders and new ways to add value throughout the value chain and in society at large. Internally, we create long-term value by improving all our processes and

becoming more efficient in our daily work. We continually reinvent the metal powder business to secure continued growth and profitability.

Society: We walk the sustainable path



Sustainability is a natural aspect of our everyday business, and we encourage and empower all co-workers to create a more sustainable business and society.

At Höganäs, we aim to go above and beyond what regulations require us to do for the environment. We find ways to make every community we're a part of a healthy and respectful place to live. With our profitability, products and know-how, we truly believe that we can contribute to the transition to a sustainable society. Engagement, openness and transparency are our guiding principles.

Our principles: How we lead and how we work

Höganäs aspires to be the world leader in metal powder technology and become an influencer in the markets we target – this is our bold ambition. To succeed, we rely on everyone's leadership and commitment.



Our leadership principles are there to help us build an agile and sustainable organization and leadership, where everyone can be involved and create meaning, not only for ourselves but for all our key stakeholders. Höganäs' success is built on us all taking that responsibility.

Our principles for **how we lead** are founded on how we look upon individuals and teams, as expressed in our co-worker values. We respect and believe in each other. At Höganäs, we have defined four principles for how we lead:

- 1. We are all leaders:** No matter where in the organization we work, we are responsible for leading ourselves. That means taking responsibility for our assignment, our own performance and development, and being a good colleague who supports others to grow and develop.
- 2. We all have potential:** We believe in everyone's potential and ambition to take on responsibility and contribute to both our workplace and our business.
- 3. We learn and develop:** As Höganäs co-workers, we perform and develop our work as individuals and in teams. We understand the importance of learning new things and developing our competence – this benefits both ourselves and the company.
- 4. We are interdependent:** We acknowledge that we are interdependent and understand that we need to collaborate for the good of Höganäs. Therefore, our way of leading aims to inspire everyone to take responsibility, work together and develop competence.



Our principles for how we work guide us in making the right decisions in our daily work. They aim to reduce waste and increase customer value in all processes. Höganäs' work principles are:

- 1. Right from me,** you know what you should deliver and that you never pass on an error to a colleague. When a deviation occurs, we see it as an opportunity to learn and improve. We analyse the root cause and change our standard to make sure that the problem does not reoccur.
- 2. Just in time** is about producing only what is needed exactly when it is needed, and creating efficient flows with minimum waste and maximum value creation. An efficient flow is based on customer demand.
- 3. Continuous improvements and standardisation** flourish where everyone is engaged and taking the lead to carry out their tasks according to agreed ways of working, as well as developing how the work is performed.
- 4. Minimise waste,** which means identifying activities that do not create value and eliminating them. For example, by minimising the use of resources through sustainable ways of working and continuous improvement.

Identifying our focus

Höganäs is a mature business with well-established relationships with major stakeholders and a long tradition of measuring and prioritizing social contribution, environmental impact and economic development. Without considering the environment and the world around us, financial strength and success are unattainable and vice versa. This approach is the core of sustainable development for Höganäs. We have taken the first steps to integrate sustainability into our business planning, but we also realize that this is a journey that will need time and effort before we are where we want to be.

Based on the nature of our business, the input we receive from our stakeholders and the global challenges we are all facing, we have identified the most important areas to focus on. This materiality analysis has been carried out in the light of internationally agreed principles like the [UN Global Compact](#) and the [17 Sustainable Development Goals](#).

Stakeholder dialogue

Our ongoing stakeholder dialogue utilises existing channels and procedures for communication, in order to keep our sustainability strategy relevant. Höganäs' key stakeholders are customers and other business partners, co-workers, owners and society. Society in this context comprises different facets of the community, such as competent authorities, non-governmental organizations and neighbours. An in-depth stakeholder analysis was carried out during 2018, where stakeholder interests were identified and prioritized.

During 2018, a review was made of existing stakeholder dialogues and notes from interactions with stakeholders. The outcome confirmed the results from previous materiality assessments.

People Satisfaction Surveys are carried out biannually among our co-workers, including a section covering sustainability issues, concerns and expectations. We also have polls every six months to monitor our co-workers' net promoter score (eNPS). In addition to that, we use in-depth interviews, polls on our intranet and other means of continuously gathering input from our co-workers.

We regularly carry out customer surveys and the next one will include an updated section on sustainability issues.

We receive regular input from the owners at board meetings. In addition, Lindéngruppen hosted workshops on sustainability both in 2017 and 2018.

Höganäs has joined a collaborative network called "Swedish mining and steel industries for sustainable development" together with the Stockholm Environment Institute (SEI) and several steel, metals and mining industry associations. The network has, among other things, explored the potential of the Swedish steel industry for increased societal value in relation to the UN Sustainable Development Goals (UN SDG).

eNPS – Employee Net Promoter Score

The employee Net Promoter Score (eNPS) is a way to measure loyalty and pride in the organization. It measures the likelihood of whether a co-worker would be willing to recommend your organization as a place to work.

Our first stakeholder dialogue in accordance with the GRI principle for stakeholder inclusiveness was carried out in 2015 as a two-day workshop called Future Search Seminar. We gathered representatives from owners, competent authorities, co-workers present and future, customers, suppliers, local communities, NGOs and academia to help us identify and prioritize the material issues.

The results were used to create our sustainability strategy, Mount Sustainability, which was first communicated in 2016. The input we continue to gather will be used to refine and develop the content in our sustainability strategy concerning prioritizations, focus areas and targets.



Below we have listed our prioritized stakeholders in 2018, how we mainly communicate and what their top interests in the company are:

Stakeholder Group	Type of dialogue	Identified interests
Customers	Customer satisfaction surveys, complaints, interviews	Competence, highest quality, customer focus, life-cycle perspective on products' climate impact and efficiency, innovation
Owners/Board	Board meetings, owner inquiries	Risk/opportunity management, financial results, business ethics, sustainability performance, strategy adapted to climate change and challenges of today
Finance institutes	Individual meetings, surveys	Risk/opportunity management, strong focus and adaption of sustainability challenges, climate strategy, ethical business behaviour
Co-workers	People satisfaction survey, performance and development talks and input from formal forums with union representatives	Fair and equal treatment, good labour terms, personal development and satisfaction, safety, social security, good leadership
Suppliers	Meetings, evaluations	Reliability, good customer, fair business behaviour, timely payments
Authorities	Inquiries	Legal compliance, integrity, open dialogue
Neighbours	Public consultation meetings at all production sites, newsletters or other local information channels	Honesty, consideration, responsible member of society, good employer
Industry organizations	Participation in working groups, response to call for information	Model, good example for the industry, knowledge sharing, innovation
Local communities	We devote time and resources to a number of non-profit projects	Building communities by contributing where we operate, reliability, open dialogue, responsible member of society

Key topics for future success

Our stakeholder dialogue and the subsequent materiality analysis identified a number of key areas essential for our future success. The areas are sorted according to the perceived ranking of stakeholder expectations:

Topic	Approach
High ethical standards	Code of Conduct, anti-corruption training, whistleblowing, values
Zero accidents	Systematic health and safety work, safety culture, high priority for safety when investing
Proactive, transparent dialogue	Stakeholder inclusion and transparency
Engagement in supply chain	Responsible sourcing programme, supply chain development
Risk/opportunity management	Mitigating risks and realizing opportunities into business advantages
Right competence	Competence development, succession and career planning
Industry leadership and customer focus	Leading change by being proactive and innovative, and setting new standards
Product development towards sustainability	Use of Life Cycle Assessments (LCA) and Sustainability Life Cycle Assessments (SLCA*) to improve product performance
Climate neutral portfolio	Monitor and minimise climate impact from production and transportation
Meeting the challenges of society	Compliance and mitigation of negative impact
Highest quality	Control systems and lean, right from me and just in time
Social engagement	Contributions to foster progress in society and the communities where we operate
Energy efficiency	Energy management, improved efficiency
Reduced emissions	Best available technology, precaution, monitoring
Everyone's commitment	Promote and encourage personal development
Attract & recruit	Being a responsible and attractive employer, fair labour terms and respect for human rights
Use of renewables	Actively work to substitute non-renewables
Zero waste	Turning process side-streams into products
Partnerships for sustainable development	Co-operation with external expertise and organizations
Strong leadership	Leadership skills programmes, building culture
Value-based workplace	Culture centred around values, respect for human rights and ethical behaviour
Agreed ways of working	Lean implementation, standard operating procedures
Sustainable project processes	Sustainability aspects included in projects and R&D

*The SLCA is a tool developed by The Natural Step that consists of a ten-step process aimed at identifying the degree of sustainability in key areas of a product's life cycle. It helps in performing a quicker yet rigorous qualitative assessment, internal capacity building and communication around product sustainability.

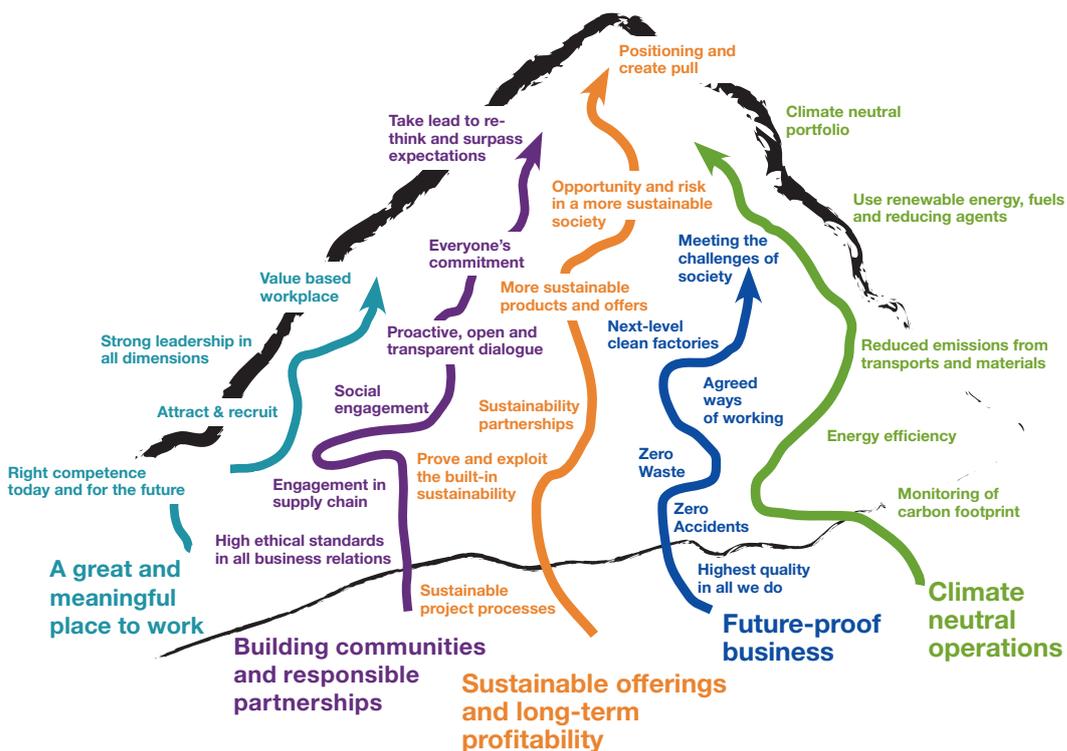
Sustainability as a strategic priority

Sustainability leadership is one of the strategic goals for Höganäs because we – and our owners – acknowledge that long-term profitability requires sustainable business practices within all areas.

As a global player, we set standards for product quality and performance within our niche of the industry. Our objective is to become a sustainability leader, which means creating a benchmark for a more sustainable product portfolio.

The basis for our success is metal powder technology, and our method is close cooperation with customers and partners. By anticipating future needs and being agile to adapt to new demands, we can be a forerunner in sustainability performance and in finding solutions to sustainability challenges.

Our tool to achieve this is our sustainability strategy, 'Mount Sustainability', which is tightly connected to our vision 'Inspire industry to make more with less'. Mount Sustainability was created in 2016 to illustrate our climb towards sustainability leadership. It is based on a thorough stakeholder dialogue and materiality analysis, and serves as our foundation for how we visualize and concretize the challenging paths we have ahead. Together with all other parts of Höganäs' strategy, Mount Sustainability is broken down into objectives, targets and actions in the yearly review of the business plan.



Each path illustrates a journey towards higher maturity and improved performance and all paths together will serve as guides towards best practice.



A great and meaningful place to work

A great and meaningful workplace is safe and enables people and teams to perform, explore and develop their potentials and grow with the company. To be meaningful also means that our people see that we have a bigger purpose and that we want to contribute to improve prerequisites for people, society, customers and owners.

We strive to be an attractive and responsible employer with an inclusive, value-based workplace, with strong and inspiring leadership, as well as great career and competence development opportunities.



Our workplace and how we work

To build the workplace we aspire to be, we integrate More Högånäs (see pages 19-22) in everything we do; how we meet, lead, develop and reward our people. We foster a culture that welcomes new co-workers to quickly become a part of our global organization, with common employment standards and ways of working that promote diversity and inclusion.

Diversity and inclusion

Respect, equal treatment and equal opportunity are fundamental to being an attractive employer and we view diversity as a long-term success factor.

The global steel industry has traditionally recruited more men than women, and we see the potential in encouraging women to discover the opportunities within our industry. Our target is to increase the number of female co-workers to 25 percent by 2021. The result in

2018 shows that we reached a level of 16 percent women, which is the same level as in 2017. During 2018, we have established the principle of 50/50 women and men on the long list of candidates in recruitments. We anticipate that our efforts will show positive results during 2019.

Our Committee for Diversity and Equality, which mainly operates and focuses on our sites in Sweden, continuously highlights these challenging issues in ongoing dialogues with labour union representatives and other key stakeholders. Our internal diversity policy is currently only applicable in Sweden. During 2018 we have not succeeded in making significant progress with regards to establishing a group wide policy, but the dialogue continues and awareness and interest is increasing.

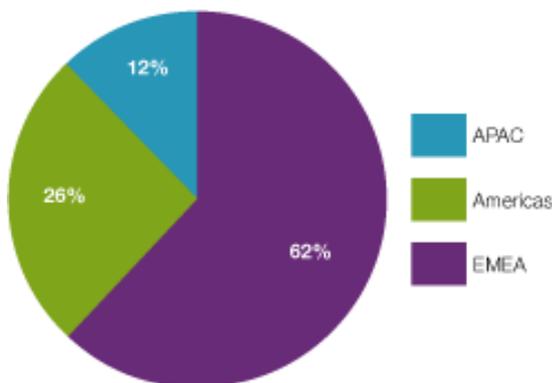
An absolute prerequisite to drive change in the organization is to reach gender diversity at top management levels and in positions where decisions are made. This is why we have set a target for the Group to have 20 percent female managers, and 50 percent female managers at levels 1 and 2 by 2021 (level 1 reporting to CEO and level 2 reporting to level 1). In 2018, we reached 17 percent female managers at level 1 and 26 percent at level 2. We reached 16 percent female managers at all levels.

During the latter years, our primary diversity focus has been on gender diversity due to the reasons stated above. A good example of colleagues coming together to support the diversity agenda is the initiative “More Women” that started in Sweden during 2018. This project aims to do an in-depth evaluation of the Swedish part of our organization, and to identify activities deemed most important for the gender diversity agenda to move forward. The learnings from this initiative will be used to evaluate how to proceed in the rest of the Group.

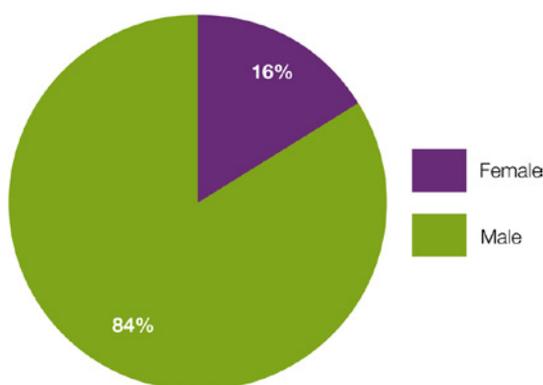
Our people

In 2018, Höganäs had 2,402 (2017: 1,807) co-workers in 17 countries, counted as average full time employees (FTE). The number of co-workers has increased by 470 due to two acquisitions, one in Germany and one in Switzerland, as well as the establishment of Alvier Mechatronics in Germany. The integration of our new co-workers has been on-going during 2018 and will continue in 2019. The total co-worker turnover during 2018 was 4 percent (calculated on total headcount) which is a decrease of 3 percentage points compared to 2017. This is mainly due to a high number of retirements during 2017.

Employees per continent



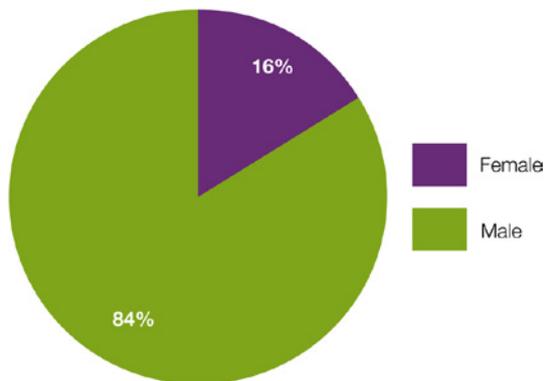
Gender distribution



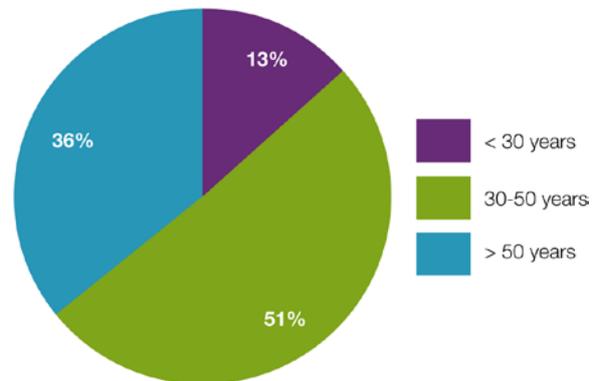
82%
of the Board of Directors are men

During 2018 we had a few cases in the Group where co-workers filed complaints regarding discrimination. The cases have been investigated and closed. None of the cases resulted in legal actions.

Gender distribution, managers



Age groups



More women would like to work for Höganäs



Six percent more women applied for summer jobs at Höganäs in Sweden during spring 2018, compared with 2017. It is pleasing, according to Marie Åberg, Human Resources Manager for Höganäs in Sweden, since the company welcomes more women as co-workers.

"In modern industries, there is no reason why women should not have exactly the same occupations as men, whether they are within production or research and development. At Höganäs, we believe that a balanced representation of men and women benefits us all," says Marie.



Ann-Catrin Hellsén guides and facilitates the discussions in the 'More Women' project.

"Actually, it is not just about gender but about diversity in a broader perspective. The more types of different experiences there are in a workplace, the better", says Ann-Catrin.

One important step is more women in men-dominated industries, and more men in female dominated work places. She adds: *"The response from many of our colleagues, is that they do not understand why so few women are looking for work in our type of industry."*

Building Competence for a successful future

In times of rapid development and continuous change, our capability to grow competence within the company will be a success factor to future proof our business. Through the annual People and Competence Review, we identify business needs and competence gaps, and create a consolidated diagnosis to ensure the right competence is available at the right time and place. Our Competence Development Forum gathers twice a year to follow up on

the competence plan derived from the review, and to align our ways of working, including establishing a common competence development process.

During 2018, our diagnosis identified competence improvement areas within, for example, digitalization, sustainability, safety, go-to-market and core technology competence. We are creating a competence framework, where we gather and align job descriptions, assessment tools, performance & development talks for everyone, as well as a new learning platform. This platform will provide learning offers in a flexible and timely manner to meet both business and co-worker needs. Prioritized topics of competence development are core technology areas and leadership.

During 2018 we estimate that the Höganäs Group provided on average 13 hours of formalized training per co-worker or, in total, 25,800 hours. Due to a lack of routines and system support, we still have difficulties in reporting an exact number of training hours. The learning platform will provide us with the numbers when it is up and running.

Other mandatory trainings are More Höganäs, Code of Conduct, Sustainability, GDPR and Work Place Safety. During 2018, we have focused on Data Protection and GDPR for managers. In 2018 69 percent of our co-workers had a performance and development talk. The goal for 2019 is 100 percent.



Gathering opinions to drive continuous improvement

One important tool to monitor progress, detect problem areas and gather people's opinions is our People Satisfaction Survey, which takes place every second year and is complemented with a condensed "Pulse Check" more frequently.

Our latest big survey was conducted in 2017. In September 2018 we introduced the condensed version of the survey. The reason behind this add-on survey, the Pulse Check, is the need for agility in a dynamic environment, where a 24-month lead-time for the follow-up might be too long.

In the 2017 survey results, the Group's net promoter score, eNPS decreased from 46 to 26. This can be explained by the challenging period, with changes in organization, management and strategy, that preceded the survey. Based on the 2017 results and the following dialogue, we have during 2018 taken initiatives to address weak areas:

- management meetings on a continental level that involve more people in order to improve communication and dialogue and improve the understanding of the strategy and business plan
- new tools for leadership development such as a Dialogue map and 360 tools that will be rolled out in 2019 to enhance self conscious leadership skills and methods
- new organization with clarification on roles and responsibilities
- launch of manager communication support

During 2019 the work will continue with clarification and increased awareness of the business plan through the performance and development talks, with the ambition of breakdown into goals for teams and individuals to improve focus and prioritisations, reduce stress and strengthen the feeling of context.

Despite our efforts, the eNPS 2018 was slightly lower than the previous survey at 22 (26). One reason can be that it takes time for improvement initiatives to reach out and have effect. We will continue to monitor the development regularly and act on results in order to reach our overall goal for co-worker satisfaction, which is an eNPS of more than 50 by 2026.

Sustainability training completed by 74 percent of our co-workers

The mandatory sustainability training was completed by 1,390 co-workers, or 74 percent of the workforce, by the end of 2018.

The estimated time to go through the training is four hours, which means an estimated total of 5,560 hours have been spent on this training to date.

eNPS

The employee Net Promoter Score (eNPS) is a way of measuring loyalty and pride in the organization. It measures the likelihood of whether a co-worker would be willing to recommend your organization as a place to work.

Dialogue map

A kind of “game” designed to create discussion and ultimately awareness relating to different leadership styles and ways of solving dilemmas. Especially intended for leaders of Höganäs.

360 tools

The 360 tool is a process where a person gets structured feedback from subordinates, colleagues and supervisors. This is then compared with a similarly structured self-evaluation. The result helps the person understand how she or he is perceived as a leader and what areas to develop.

We strive to be an attractive employer

We attract and recruit people by being true to our values as a responsible employer and by being up to date in our approach concerning employer branding and tools for seamless candidate experience. Our focus during 2018 has been to strengthen our internal compensation and benefit competence and to strengthen the processes, systems and control functions by establishing standardized ways of working and a joint recruitment system.

Our total offer means that we are taking into consideration both our culture, a safe and healthy work environment, development opportunities, as well as market based compensation and benefits. By meeting different needs depending on family and life situation, and working according to the total offer principles, we can be flexible and meet the expectations that characterize today’s labour market and thus attract and retain the

right competencies. We should always offer at least minimum wage in each country where we operate. When it comes to general employment standards and terms, we acknowledge that we need to do a more thorough assessment, primarily in countries where legislation is weak concerning labour standards and human rights.

Equality and equal remuneration

Höganäs conducts annual salary mappings to identify gender pay gaps and provide a clear picture of how we can improve to reach equal remuneration. On average, men's salaries are 4 percent higher than women's salaries. We have identified some reasons:

- more men than women in leadership positions
- more men than women within key competence areas
- cultural biases to gender diversity

The long-term strategy to change this includes:

- positive attitudes towards parental leave for both men and women
- networking programmes for women
- better succession planning
- improved annual review of people and competence
- taking further steps to create awareness of biases
- continuing with leadership development

We also need to make sure that remuneration processes are consistent and based on fair principles and equal treatment.

One important part of the More Women project (see Diversity and inclusion), is to find opportunities to encourage more women to move into key competence areas.

68 percent of our workforce is covered by collective agreements.



Total offer principles

Total offer principles mean taking into account all aspects of the co-workers' lives, including work-life balance and allow for flexibility and accessibility based on their needs. One achievement during 2018 was the introduction of a new benefit portal in Sweden. The benefit portal makes it possible for the co-worker to choose between available benefits according to personal needs such as insurances, household services and health promotion activities.

Outcome 2018

Target description	Target	Result 2018
Net promoting score (per six months, biannual for leadership)	≥50 points 2026	22 points
Co-workers who have had annual performance and development talks, percent	100% by 2019	69%
Female rate, co-worker	≥25% by 2021	16%
Female rate, all managers	≥20% by 2021	16%
Female rate, managers level 1 and 2	≥50% by 2021	17%, level 1 26%, level 2

Healthcare

We provide occupational health care to our co-workers in all countries where we operate and take initiatives to promote health and well-being.

More than 95 percent of our employees are covered by additional health care services and benefits such as life insurances and disability coverage.



Building communities and responsible partnerships

Höganäs aims to be a responsible citizen wherever we operate, always upholding high standards in human rights, labour rights, anti-corruption and environmental protection. This commitment also extends to our partners.

Our aim is to create a culture of individual engagement, where all co-workers feel supported in their personal ambitions to build communities. We think that each co-worker should do whatever he or she can in their daily work to make Höganäs truly sustainable.



Business ethics and anti-corruption

Höganäs has throughout its history been committed to high ethical standards in all business relations – a strong tradition that we need to protect carefully. We take a stance against all forms of corruption and unethical business behaviour.

Our respect for human rights principles is expressed in our Code of Conduct, which includes commitments for the local society, our own operations and our business partners. Through our Supplier Code of Conduct, we make it clear that we do not accept violations of human rights principles in our supply chain. We make sure that our own operations live up to our Code of Conduct through training and internal control mechanisms, such as self-assessments, audits and whistleblowing procedures. We also evaluate our business partners' performance through supplier self-assessments, in connection to supplier site visits and as part of preparations before contract renewals.

Our anti-corruption policy is included in our Code of Conduct, which was updated at the end of the year. The new Code of Conduct will be communicated to all co-workers, and training will be carried out during 2019 and 2020. In 2018, 10 percent of our co-workers received training on our anti-corruption policy and procedures, whereas communication included 12 percent.

Our whistleblowing procedure has been effective since 2010. Two grievances about breaches against the Code of Conduct, that have remained open since 2017, have been handled and closed during 2018. During 2018, we received one case relating to the Swedish operation which has been resolved. In addition, a forensic investigation in relation to the monitoring and handling of credits has been carried out. An improvement project of the credit management procedures is ongoing as a consequence of the investigation.

There are no incidents to report concerning the health and safety impact of products, product information, marketing, breaches of customer privacy or other socio-economic non-compliances.

During the last five years, we signed contracts with 14 agents in 21 countries. In order to minimize risks, an audit of integrity is conducted with all agents exposed to bribery or other corruption risks before any contract is signed. The audit is expanded if circumstances come to light giving rise to questions about an agent's reputation or capacity to comply with anti-corruption law. Besides the requirement to comply with applicable anti-bribery law and Höganäs' policy, agreements with agents also include permission for us to request an audit of the agent's books and accounting records by an independent auditor to verify compliance.

We make extensive efforts with our suppliers, working together to secure and develop high standards of human rights, labour rights, anti-corruption and environmental protection. Read more about our supply chain on page 61.

Dialogue with local communities

In all locations where we operate, we have a responsibility to maintain an active and transparent dialogue where we inform the community about our activities and listen to their opinions. We also welcome spontaneous feedback from our neighbours and all sites have channels for communication and grievance mechanisms.

In Höganäs and Halmstad, both located in Sweden, where we have our largest production sites, we inform through our newsletter *Insikt* (Insight), which is published and distributed on paper 2-3 times per year. In between the printed issues, we continuously update our blog. In the newsletter and on the blog, we invite an open dialogue and encourage our neighbours to share their opinions or questions with us. Good results from open dialogue with neighbours and the local municipality have been achieved in several projects involving local infrastructure.

Drawing on inspiration from the good examples we already have within the Group, we aim to develop a consistent 'Höganäs way' for stakeholder dialogue at all sites.



More climate-smart together

Höganäs aims to export residual heat and possibly enough CO₂ to supply a 10-hectare greenhouse for food production, through a new partnership. Our partner works to combine waste streams, technology or biological processes with third party sustainable capital to create industries that produce food, feed, fuel and other vital substances. If successful, the cooperation will not only result in a reduced effect on the environment, it will also benefit local entrepreneurs and create more jobs in the area.



Höganäs eases local infrastructure development

We have supported the municipality of Höganäs' city planning and made land accessible. The municipality could then create better links between different city areas by making attractive paths for pedestrians and bicycles. 'Saluhallen',



an old factory building, has been developed into a centre for small craft shops, a restaurant and cafe, a local brewery and other activities. The popular shopping and dining area is now more easily accessible to pedestrians that want to enjoy a worthwhile detour from the city centre.

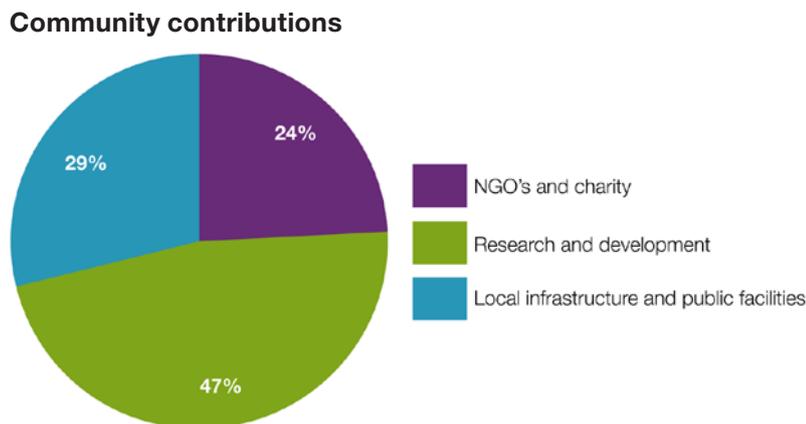
Supporting communities where we operate

In line with our global commitment, we have developed a Group framework for community engagement and donations. The companies within Höganäs Group have the freedom to decide what to sponsor and support locally within the framework of our policy.

During 2018, we attended the Global Child Forum in Stockholm together with Lindéngruppen who made a pledge that we would strive to create a framework for how to incorporate children's voices into our business. A first meeting has taken place to analyse the needs and possibilities concerning children's rights.



The companies within Höganäs Group contributed to the local communities with equivalent to 1.97 MSEK during 2018. The most substantial individual contributions were given to promote education, especially for underprivileged students.



One area for substantial contributions are aid to vulnerable groups in society, such as the poor, the disabled and cancer victims. We also contribute to local sports clubs and facilitation of social programmes motivating young people to adopt a healthy lifestyle, fighting drugs and promoting physical activities.

We support several local initiatives aiming to increase knowledge and develop new technology by giving contributions to scholarships and research projects.

Creating value for society – outcome 2018

As an international company with almost 2,500 co-workers, there comes a responsibility to contribute to the societies where we operate. Our contributions in the form of taxes via e.g. corporate income taxes, energy taxes, employer taxes, indirect taxes as well as employee taxes, is one direct way of contributing to the societies. Managing our tax affairs properly and in line with the rules and regulations across the world is therefore of significant importance to Höganäs. Our obligation is to pay the amount of taxes required by the law in any continent where we operate, in accordance with rules set by the relevant governments and with due consideration to the ethical aspects of tax management. Consequently, we always strive to ensure compliance with transparency requirements and we do our utmost to avoid transactions or arrangements that may be considered aggressive tax planning. Neither do we in any circumstances engage in transactions or structures considered as tax evasion.

For key leaders and specialists, we offer a variable pay programme. This programme is up for review in 2019. The bonus programme for 2018 is based on two parameters – financial performance of the company and individual performance, where the major part (in most cases 70 percent) is based on the financial performance of the company. The financial targets are based on Group Operating Income. The individual targets increasingly comprise of sustainability aspects. In 2018, significant improvement of the safety performance formed part of the bonus requirements for the management team.

Value created	MSEK
Supply chain	7,753
Tax payments	175
Salaries, other benefits and social security expenses	1,810
Investments excluding acquisitions	671



Sustainable offerings and long-term profitability

Long-term profitability requires sustainability. To remain relevant in the future, our business must produce societal value. We understand that this path up Mount Sustainability is the toughest one for us to climb – and we will not be able to do it on our own. We aim to be the partner that enables sustainability and seeks cooperation with suppliers, end users, academia and communities to meet the expectations and requirements of society.



Sustainable offerings and long-term profitability

We are constantly developing new products with future challenges in mind, and we have already identified a number of areas where we can contribute positively to sustainable development by offering our products to the market.

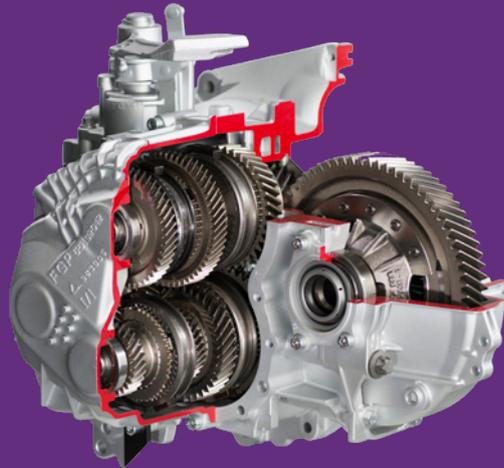
Stainless steel joints without nickel and copper

The environmental standards applied to drinking water applications set stringent requirements on the amount of nickel and copper released into drinking water. However, copper and nickel-based braze joints are traditionally used for heat exchangers. For this reason, we collaborated with a brazing customer and produced a solution based on our iron-based filler metals. The solution enabled a heat exchanger made entirely of stainless steel to be joined without using any nickel or copper braze. The heat exchanger has been installed in a solar energy solution, which will be used for tap water heating.



Powder metallurgy gears save raw materials

In a cooperative development effort initiated and driven by Höganäs, twelve industry-leading part manufacturers, technology and engineering partners have successfully proven the technical concept and design for the manufacture of powder metal gears for a popular European manual six-speed transmission. Through bench testing according to a typical European OEM test standard and test-driving, we have shown that powder metal gears can be designed lighter (1.7kg less for the complete assembly) than wrought steel gears currently practiced in manufacturing processes.

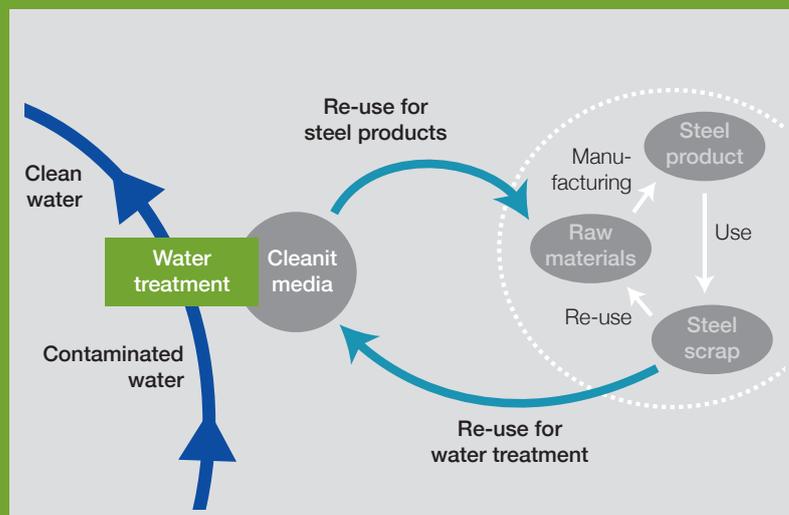


Due to the near-net-shape benefit of powder metal gear technology, the manufacturing process chain is shortened considerably. The results are substantial savings in machining steps, waste and metal chip formation. The disposal of machining fluids and coolants has also been reduced drastically. Thus, environmental benefits could be shown both for the production and the use phases of the gear.

Circular approach for drinking water treatment

Our business area Environmental Solutions offers Cleanit®, an iron-based media for, amongst other things, the purification of drinking water of carcinogenic hexavalent chromium. The water treatment media is produced from steel scrap using hydropower. The powder particles are engineered for high porosity, large surface area and high reactivity, leading to improved contaminant absorption and longer media life. No hazardous by-products are released during the production process, and only an absolute minimum of well-established chemical additives is needed for the water treatment.

Spent media is taken back and recycled into valuable products at our facilities, e.g., stainless steel powders for automotive powder metal parts.



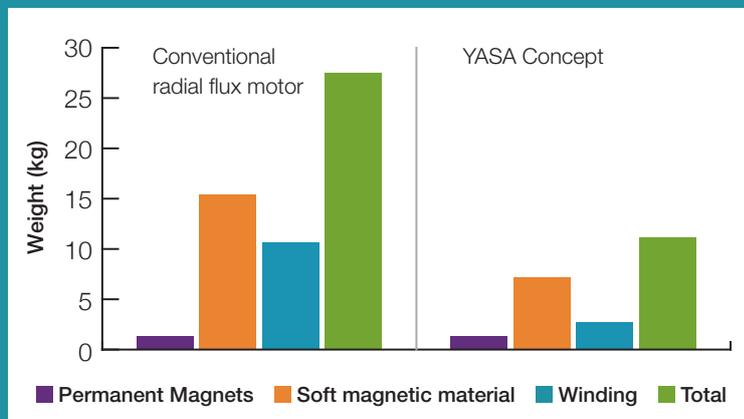
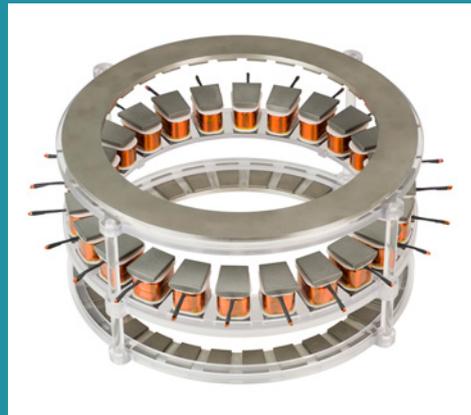
Replacing hard chrome plating

Roof support cylinders used in coal mining, like many other hydraulic cylinders, require a smooth surface with wear and corrosion resistance and are conventionally treated by hard chrome plating. As hexavalent chromium itself is carcinogenic, and the plating method produces several rest products that are considered hazardous waste, industries are looking for viable alternatives. In close cooperation with a customer, the Höganäs tech centre in Shanghai has shown that laser cladding with our iron-based surface coating powders offers superior properties compared to conventional hard chrome plating, as well as extended service life for the cylinders.



Soft magnetic composites reduce weight and raw material use

The so-called 'Yokeless and Segmented Armature' motor (designed by our customer YASA Ltd) takes full advantage of the additional design freedom from powder-based soft magnetic parts, compared to the use of laminates. The motor is optimized for traction applications and reaches a power density of more than 5 kW/kg. Due to this very efficient use of key magnetic and structural materials, the motor needs less raw material than conventional motors. The amount of permanent magnets and copper windings in particular, has been drastically reduced.



Life-cycle assessments and product footprint

All stages of a product's life cycle must be considered for sustainable industrial development. Detailed, reliable and transparent data is available for some environmental aspects in parts of the lifecycle. For environmental areas with good data availability (e.g. green-house gases), quantification of the product footprint is necessary to channel activities towards sustainable development. This data can give useful input for qualified decisions on changes and improvements in production or supply, as well as new product developments. We therefore run two initiatives with the goal of mapping metal powders' environmental performance.

Internally, we have kicked off a systematic work with life cycle assessments (LCA) focusing on cradle-to-gate analysis covering the parts of our products' life cycle that we can directly influence. Moreover, we have started an industry-wide initiative on life cycle assessments within the European Powder Metallurgy Association (EPMA), starting with a lighthouse project to quantify the complete life cycle impact of a specific powder metal part.

However, where complete data is missing, both for parts of the lifecycle and for some entire footprint areas (e.g. social footprint and recyclability), traditional life cycle assessment does not give us the whole picture. To get a more complete overview of our products' footprint, we are therefore also running a qualitative analysis of our product portfolio based on the four sustainability principles (see fact box). The results from this study will be used to strengthen our development processes and to clarify our products' sustainability goals.

The Four Principles of a Sustainable Society

In a sustainable society, nature is not subject to systematically increasing...



concentrations of substances extracted from the earth's crust



concentrations of substances produced by society



degradation by physical means

And, in that society



people are not subject to structural obstacles to health, influence, competence, impartiality and meaning making

These principles are often referred to as The Natural Step "System Conditions for a Sustainable Society" after the international non-profit organization promoting their development and application since 1989. The principles are part of a Framework for Strategic Sustainable Development that is openly published in peer-reviewed journals.

Use of slags to capture phosphorus



At the United Nations Ocean Conference – held in June 2017 at the UN headquarters in New York – Höganäs signed a voluntary commitment on the use of by-products from the steel industry for water purification. We are now engaged in a research partnership in Sweden (Minrent) to explore the possibilities of removing phosphorus from water by using tailored filter materials made from slags. Lab and pilot-scale studies have shown that close to 100 percent of phosphorus can be removed from water by using slag.

Phosphorus is present in many anthropogenic waters, and causes eutrophication in lakes and oceans. The fact that large and important agricultural

areas are often close to the sea, poses a potential conflict between the need to keep farmlands fertile and the possible phosphorus leakage into the sea from these areas.

Small, privately-owned sewage facilities are another major sector causing leaks of phosphorus into lakes and oceans. When using our by-products for water purification, it will contribute to decreased eutrophication. At the end of their life, the saturated filter materials can be used both as a fertilizer and a soil enricher, or as a slag former in steel and metal production.

Read more about the [Minrent project](#) (in Swedish only) and about the [UN Ocean Conference](#).

Researchers at Luleå University of Technology help Höganäs to become fossil-free

The Swedish Energy Agency has awarded a four-year research project worth more than SEK 5 million to Höganäs and the Luleå University of Technology.

“The project will develop knowledge of bio-coal in order to replace as much fossil coal as possible in our manufacturing processes and at other companies in the industry,” says Ryan Robinson, project participant and engineer at Höganäs.

Höganäs is working in several parallel tracks in order to phase out fossil coal and reduce its climate impact. To replace the biggest element, fossil coal, more basic research is needed into bio-coal and its properties. This is where the Luleå University of Technology will offer its help in a joint research project, which

is now being supported by the Swedish Energy Agency.

“Most of the aid will go to the university to finance the team of researchers who will be working on the project. Without the money, we wouldn’t have been able to carry out the research project, so we’re really grateful for this,” says Elin Hernebrant, project participant and engineer at Höganäs.



Sustainable development needs partnerships

In our experience, sustainable development needs partnerships and knowledge sharing, and Höganäs has a long tradition of working on projects with customers, universities, research institutes, and other industry partners. The projects' scopes often include both our and our customers' technology areas at all technical readiness levels. In most cases, projects are funded by governmental authorities, with Höganäs as a co-funding partner, together with other companies with similar interests. Besides these projects, we are also active in several centres of excellence and competence, focusing on, for example, materials science and raw materials. Below are some examples.

Senad Dizdar bridges separate worlds

To have one foot in industry and one in research creates valuable exchanges of knowledge both ways. Senad Dizdar, a research engineer at Höganäs, divides his time between Höganäs and The Royal Institute of Technology in Stockholm (KTH).

On a daily basis, Senad works as a researcher in the field surface coating at Höganäs. During 2014, he became an associate Professor at KTH and since June 2018 he has been employed as an Adjunct Professor.

His research is about Tribology (the science of interacting surfaces in sliding or rolling motion – it includes the principles of friction, abrasion and lubrication) with a special focus on powder metallurgy coatings and additive manufacturing.

“It is a mutual interest and knowledge exchange between KTH and Höganäs. Through the adjunction, Höganäs increases its contact area within the research front in tribology with a special



focus on coatings, and KTH will at the same time get a valuable contact area within the material development front in the industry,” says Senad.

His research in this area is also important from a sustainability perspective.

“By coating components, they both last longer and reduce operating energy losses. You can also repair and refurbish them, instead of discarding, re-melting and making new ones. It saves a lot of energy and eliminates unnecessary carbon dioxide emissions. Let the energy saved instead be used for something else,” he says.

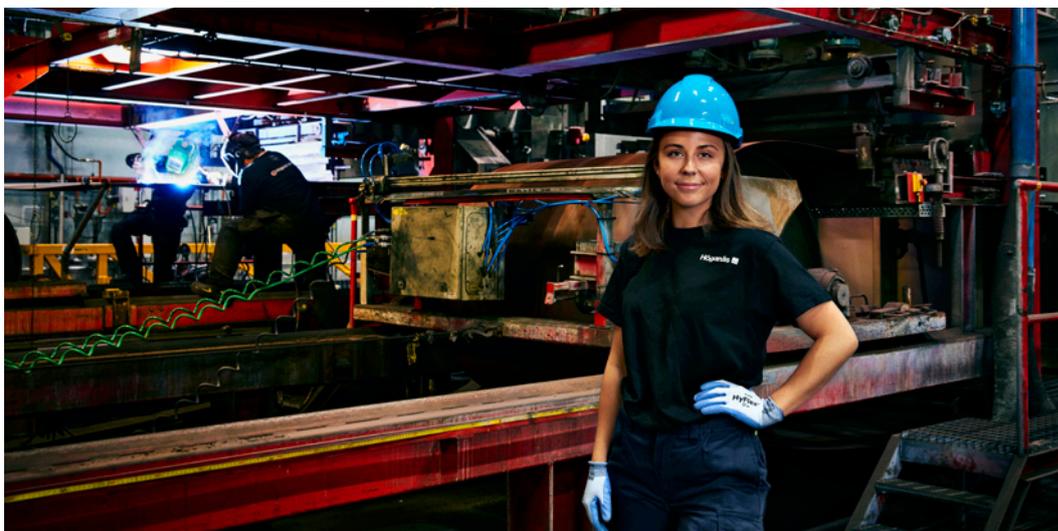
Both set-backs and steps forward

Despite all efforts, success is not always granted for cooperation projects. The ERMAT-project focused on creation of a platform for increased usage of residual materials as a complement to virgin raw materials within Europe. As the project did not reach its goals, it was a joint decision within the project team and EIT Raw Materials that it should be terminated before the closing time. The main reason for the closing was that – due to a change in project pre-conditions – there was no solution for ownership and financial sustainability of the web tool. More information about the project can be [found here](#).

In the Buspro project, potential concepts for re-use and recycling of residual products between steelworks and other industrial sectors, so-called industrial symbiosis, have been evaluated. The intention of this cooperation between a research institute and the metal and mining industry was to increase resource efficiency and reduce environmental impact. Sadly, the project showed that re-use and recycling technically and practically is feasible, but to find a solution that is also commercially viable is today more complicated. Read more about this project [here](#).

In contrast, the investigations of a consortium of Swedish steel companies and a research institute on “Enhanced use of slags by online monitoring of slag processes” showed very positive results and will be followed up with a continuation project. The challenge is to develop a fast method for chemical analysis of slag and similar side stream products, applicable in-situ without sample preparation. The purpose is to provide the possibility for increased re-use of side streams. Positive side effects are increased process control capabilities and better control of the slag and steel composition, which could also potentially lead to energy savings.





Future proof business

Future proofing the business means meeting the requirements of our future society everyday by ensuring high quality products, operational excellence and safety, while at the same time meeting higher demands concerning environmental performance and resource efficiency. Our ambitions are clear: The highest quality in all we do.

To become that company, we need to bring the whole organization on board and we all need to be diligent, target-oriented and persistent in our efforts.



Zero accidents

'Safety first' summarizes our safety culture where dialogue and risk-elimination are key, and where the rule is to never compromise safety. Our vision is Zero Accidents and the interim target for 2019 is a lost time injury frequency (LTIFR) less than 3 per million hours worked (LTIFR values are inclusive of recently acquired companies). In 2018 the LTIFR was 8.2. This was a decrease compared to last year's result of 9.7. Even though we see movement in the right direction concerning decreased number of injuries, we still think the development is too slow. We will intensify our efforts to drive improvements within this area in the years to come.

Number of reported accidents, co-workers	2018*	2017*	2016	2015
Number of recordable injuries**	164	201	165	167
Number of lost time injuries***	37	39	34	41
Number of high-consequence work-related injuries	1	0	2	0
Fatalities	0	0	0	0
Lost time injury frequency	8.2	9.7	9.8	11.9
Recordable injury frequency	36.5	49.8	47.5	48.4
Incident reporting frequency****	53.0	52.8	53.8	23.2

*Due to the on-going integration process, where safety work is prioritized, the numbers for lost time injuries, fatalities and lost time injury frequency include the majority of our new co-workers from acquired companies.

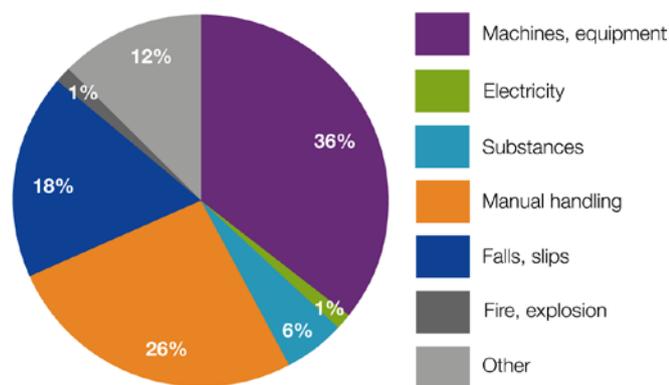
**Including all reported injuries and commuting accidents.

***Including injuries and commuting accidents leading to absence from work.

****Reported risk observations, near misses and accidents per lost time accident.

The majority of work safety incidents occur in production, where operators are exposed to elevated risks. Our most common incidents occur during manual labour. In early October, a serious accident occurred in Stony Creek in Pennsylvania, USA, where a co-worker lost an arm in the atomizing area. After a thorough root cause analysis, a number of corrective actions have been taken. We have also shared the learnings from this accident both within the Höganäs Group and externally to prevent similar accidents from happening again. We have had no fatalities.

Causes of injuries



A preventive approach to managing work place risk

Höganäs deploys a preventive and systematic approach to safety, documented in our health and safety management system. The technical aspects are paired with a zero accidents culture.

In 2017, we implemented a global incident and risk reporting system (MIA). This tool is used by all co-workers to report incidents including accidents, near misses and risk observations. MIA also supports problem-solving, investigation reports and actions. Developing and sharing best practice within the group aids the local initiatives.

We follow a targeted leading indicator to reduce the risk level in all workplaces.

This metric is called the ‘risk reduction number’ (RRN) and is based on the reduction of risk points after the implementation of corrective actions to any identified safety risk. The organization and our co-workers can improve the RRN by:

- being active in identifying and reporting risks
- the quality and speed of eliminating or mitigating identified risks

Thus the RRN reflects our preventive safety approach which also drives our culture towards everyone’s engagement. Our target is to reduce risk by 1.5 risk points per person per year. In 2018 we achieved a score of 3.3 (3.2).

Internal conference strengthens safety culture

In early September, Höganäs in Brazil hosted the second Hot Metal Safety Conference, a global internal conference focused on safe melting operations. Colleagues from Sweden, the United States, Germany, Belgium and India formed the experts meeting. In order to boost the discussions, an external expert in Occupational Safety was invited to give a presentation on how our decisions directly influence our safety.

Jeferson Oliveira, who works in the meltshop in Brasil, comments: “We had the opportunity to stop to reflect on our evolution in the safety culture, and how much we are considering safety as a priority in our routine.” He added: “It was exciting to learn that every day we take around 35,000 decisions and that many of them end up putting us at risk even if they are taken unconsciously. That’s why it’s important to always use the 3 Ps technique: Pause, Process, Proceed.”



A systematic approach to drive improvements

In order to work systematically to reduce risks and prevent accidents, our operations have health and safety management systems that cover all activities and co-workers and our target is to certify our systems with ISO 45001 by 2022.

Our health and safety committees meet on a regular basis up to four times a year and include all levels of the organization, from shopfloor to management levels. All co-workers are covered by the work of the health and safety committees. The purpose of the committees is to create a formalized way of collecting knowledge from all levels in the organization, open a dialogue and create a forum where improvements can be discussed and decided upon.

Health and safety training that is adapted to the individual work-related risk exposure is mandatory for all co-workers and general safety training is part of our induction process for new employees. Even though we want to become the benchmark for the steel industry concerning safety performance, our track record shows that we still have a long way to go and that ‘Safety First’ needs to remain our priority.

We also apply the systematic approach concerning precaution and preventative measures to minimize environmental impact, improve our performance and to avoid environmental non-compliances. During 2018 we had no reported breaches of environmental permits and no significant environmental accidents were reported.

Towards the next level of clean factories

Our co-workers' health is prioritized, which means that we must work to minimize exposure to dust and hazardous substances in the workplace. We also promote good standards and best practice to mitigate adverse health effects within our industry and within our supply chain.

To future proof our operations, we aim to reduce dust exposure beyond current limit values. In our industry, cobalt and nickel serve as targeted indicators as they are representative of the total exposure to substances of concern in the workplace. We currently work with our target to reduce the inhalable fraction of cobalt to less than 0.02 mg/m³ and the respiratory fraction of nickel to less than 0.005 mg/m³ (both as time weighted average) before the end of 2020. This year it is premature to present the outcome so far from our efforts, due to insufficient data, but more measurements will be carried out during 2019.

For priority reasons, the Distaloy® plant in Sweden and the Belgium site have been chosen to identify and develop solutions to reduce dust. Our renewed base line measurements during 2018 include 25 stationary measurements and 27 carry-on measurements that reveal that hot spot areas include sieving, packing and other stations where open handling is possible.

North American sites one of Högånäs' forerunners of 5S



Högånäs has chosen the 5S methodology as a tool to make way for systematic continuous improvements. 5S is a proven methodology with its origins in Toyota lean manufacturing. The main idea behind it is to increase efficiency, reduce risks and increase transparency and pride in the workplace. The five 'S' represent five levels of order that apply to the physical and organizational workplace:

Sort, Set in order, Shine, Standardize and Sustain – and an extra S for Safety. In other words, a method to establish agreed ways of working in a purposeful workplace with everything in a proper place. Some identified benefits that come

with implementing 5S are less waste (i.e. improved efficiency), reduced space used for storage, improved maintenance, more committed co-workers, improved quality and improved safety. Following this year's implementation, Dave Milligan, from Högånäs in North America, reflects "5S is a great philosophy for evaluating large and small processes and eliminating waste and improving efficiency. The team has taken an excellent first step in learning and applying the concepts. They are now poised to spread the philosophy to a broader group. As we implement 5S we will uncover countless opportunities to improve safety, quality and efficiency."

Mitigation of exposure includes technical improvements, such as new dust filters and vacuum cleaners, and more enclosed and automated operations. To date, more than 20 technical improvements have been identified and are under evaluation. However, securing clean factories also includes raising risk awareness, improved ways of working and training. LEAN and 5S (Sort, Set in order, Shine, Standardize and Sustain – and an extra S for Safety) are important to achieve and maintain safe ways of working.

A limited number of co-workers are exposed to thermosetting resins, which pose a risk of allergy and asthma. In order to prevent incidents, the co-workers undergo special training and their exposure is monitored.

Safer emptying of filling tube

When big bags are filled with produced metal powder, 1.5 to 2 kg of powder is lost each batch due to remains in the filling tube. The remains create dust and waste, deteriorate the working environment and make the equipment dirty. The loss of material adds up to 50 tonnes per year.



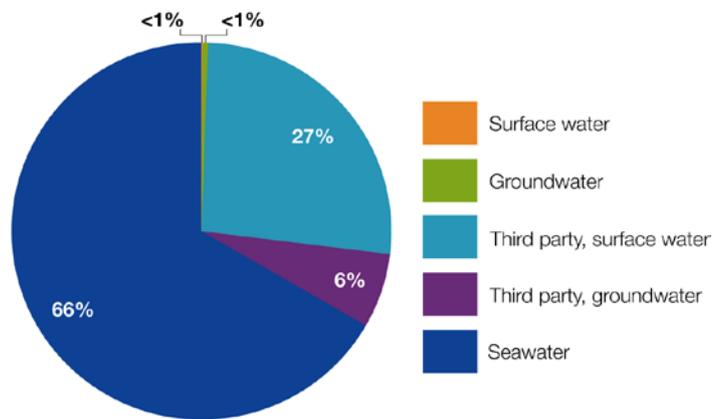
Recently a new installation with a collection funnel for safe emptying of the tube was successfully tested at one of the filling stations in Höganäs, Sweden. The collected powder can now be recirculated as high grade melt stock in Höganäs' own production or externally.

Using water responsibly

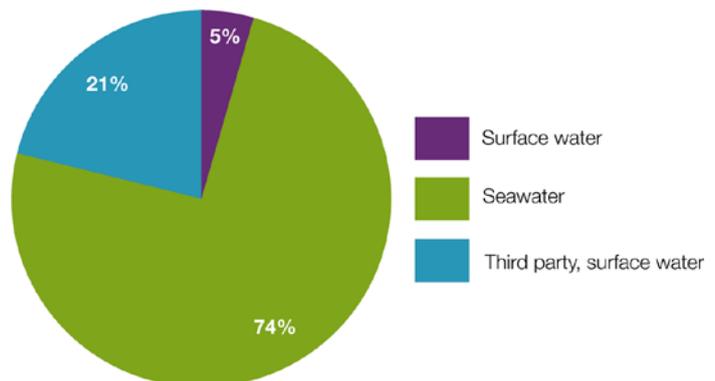
Water is a natural resource that must be used responsibly and with good judgement. Our production sites are generally located in areas where water supply is still plentiful. The exception is our Indian site in Ahmednagar, where there is a water shortage stress at times. Water access and water quality is however not a steady state, which is evident from the drought in Sweden during the summer in 2018. This means we need to continuously assess our water footprint and make sure we do not contribute to a negative development. We monitor our water discharges and measure substances of concern. Terms for water discharges are at most operational sites part of our environmental permit.

The largest quantity of water used, 4,160,300 cubic metres, is sea water for cooling in closed systems. The heat produced in these systems is exported

Water withdrawal by source



Water discharges by destination



as district heating in Sweden. Water is also used in the atomizing process where molten steel is atomized into the desired particle sizes in a controlled 'water jet' process. Again, the water is treated, cooled and largely recycled in the atomizing process. Water for dust binding and slag quenching is treated on site or sent off to external water treatment plants.

Water use, cubic metres	2018
Water withdrawal, sea water	4,160,300
Water withdrawal, freshwater (including collected rain water)	2,100,400
Total water withdrawal	6,260,700
Total water discharges	5,586,500
Total water consumption	674,200



Water discharges, tonnes	2018*
COD (Chemical Oxygen Demand)	9.2
O&G (Oil and grease)	3.0
N-tot (Nitric nutrients)	0.4
TS (Total Solids (TSS+TDS))	5.2

Metal discharges to water, kg	2018*
Iron (Fe)	503
Zinc (Zn)	323
Nickel (Ni)	97
Copper (Cu)	22
Chromium (Cr)	17
Lead (Pb)	2

*Consolidated data from previous years is unavailable.

Water discharges are calculated based on local monitoring carried out to cover the needs for function control and compliance to environmental permit limits. As a result, not all sites report on all substances and the consolidated figures may therefore not cover all actual discharges.

New central cooling saves water

The Central Cooling Project aims to replace seven open cooling towers and two fan heaters currently servicing the production plant in Ath, Belgium. It is a step in the right direction towards both energy reductions and environmental benefits.

“We can now skip the use of harmful additives of antifreeze, anti-wear and fungicides,” says Benoît Gobeaux, head of Environmental Management at the Belgian production site.

“With the new central cooling in place we are aiming for a saving of 9,000 m³ of water per year, not to mention a reduction in maintenance load and cost.”



Rain harvesting in water stressed areas

In 2018, Höganäs in India undertook a project for water conservation at the plant in Ahmednagar.

The potential rainwater available for harvesting is around 5,000 cubic metres per year, corresponding to about 20 percent of the site’s total annual need for fresh water. In 2018, we harvested an equivalent of 10 percent of the total need for fresh water. Yet, the collected water is well into the ground water table and to a lesser extent, used for on-site gardening. In 2019, a storage basin will be installed and in an evaluation phase, the water will be assessed for potential use to replace water that currently is withdrawn from the city water main.

“Being in a rain deficient area, water conservation and harvesting is becoming the need of the hour,” says Kumar Iyer who heads up the operations in India.



The new rainwater collection and storage system is protected from evaporation losses.



Monitoring air emissions

Our production processes generate air emissions both via stack and as fugitive emissions.

To prevent fugitive emissions, all raw materials and products (metal powders) are handled in closed processes, including in in-house storages and sealed transport containers of materials, with a few exceptions. The site in Höganäs, Sweden, uses bulk transport by ship and the unloading is open. Slag handling, including sorting and transporting to internal landfill is generally carried out in open air at all slag production sites. Special procedures including watering, road sweeping, landfill covers, etc, are used to minimize emissions from the open handling. A combination of paved roads and working areas, and a programme for keeping the sites clean at all times, minimises secondary dust emissions.



To minimize stack emissions, all large point sources are equipped with filters. Local environmental control programmes typically include monitoring emissions such as nitric oxides (NO_x), and sulphur oxides (SO_x), metals to air, and other substances of concern, depending on the nature of the process.

Stable production processes and preventive maintenance of process equipment is key in avoiding both fugitive and stack dust releases.

Air emissions, tonnes	2018
Nitrogen oxides (NO _x)	138
Sulphur oxides (SO _x)	40
Carbon Monoxide (CO)	136
Non-Methane Volatile Organic Compounds (NMVOC)	9

Metal and dust emissions to air, kg	2018
Iron (Fe)	12,000
Chromium (Cr)	9,000
Zinc (Zn)	1,600
Nickel (Ni)	100
Copper (Cu)	100
Lead (Pb)	100
Cadmium (Cd)	9
Mercury (Hg)	3
Total dust, including metals to air, tonnes	78
PM10, tonnes	45

Air emissions are calculated based on local point measurements carried out to cover the needs for function control and compliance to environmental permit limits. As a result, not all sites report on all substances and the consolidated figures may therefore not cover all actual emissions. Read more about our GHG emissions on page 58.

Use of materials

We handled in total 719,000 tonnes of direct materials during 2018 to produce more than 500,000 tonnes of products and 155,000 tonnes of process side-stream materials. Our largest raw materials are non-renewable in the sense that they are extracted from the earth’s crust. These materials are mainly iron ore, limestone and fossil process coal or coke. An initiative is ongoing to replace fossil process coal with renewable alternatives. Read more about our green reduction of iron ore on page 60.

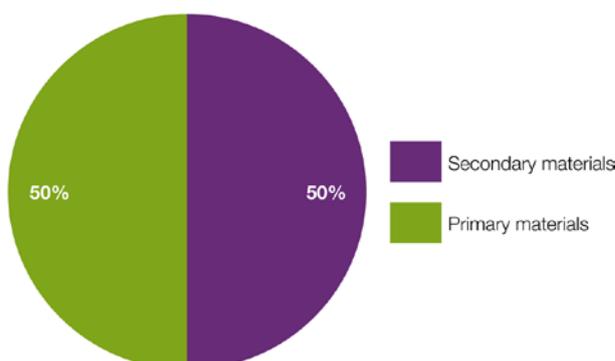
Metals can be recycled innumerable times, and approximately 50 percent of our raw materials base consists of secondary, or recycled materials. Our largest material type by weight is iron-based scrap, which amounted to more than 350,000 purchased tonnes in 2018. Iron based scrap together with other secondary materials represented 29 percent of total purchased materials. Secondary materials include both pre- and post-consumer scrap.

The packaging material amounted to 2,340 tonnes, of which 7 percent was renewable material.

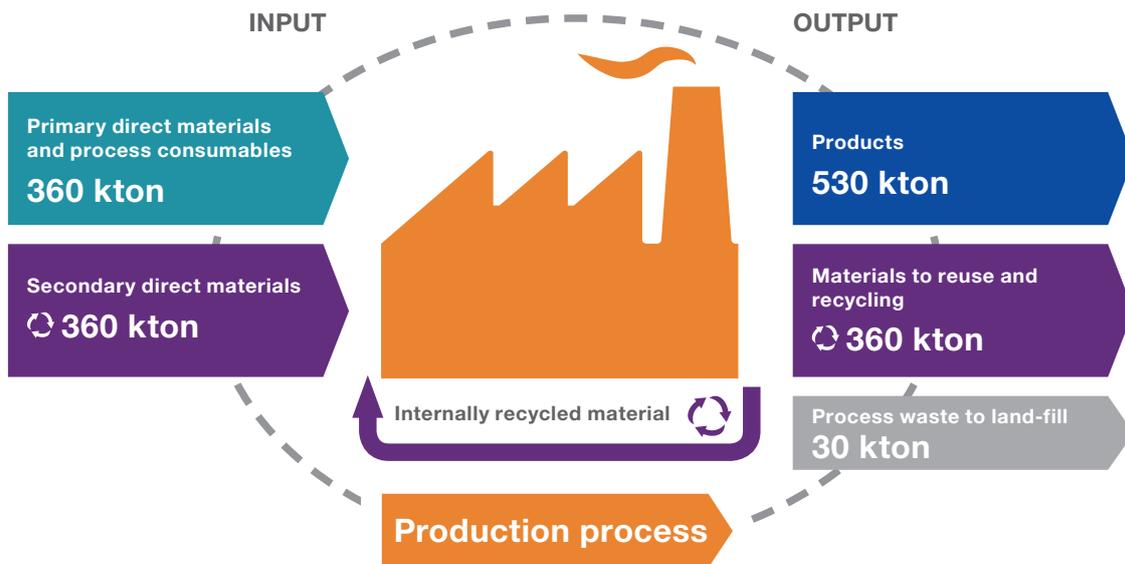
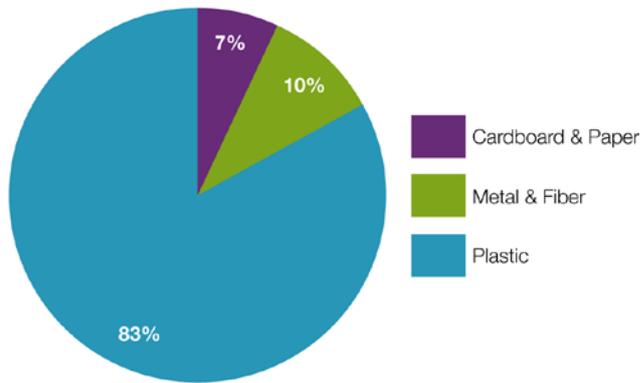
Raw materials, tonnes	2018	2017
Secondary materials, metal scrap	360,850	360,260
Ferrous and ferroalloys	248,470	215,510
Graphites, coke and anthracites	57,650	55,530
Slagforming agents and minerals	36,210	32,480
Non Ferrous metals	12,600	13,690
Organic	3,680	4,920
Total	719,460	682,390

Packaging materials, tonnes	2018
Cardboard & Paper	170
Metal & Fiber	220
Plastic	1,950
Total	2,340

Direct materials



Packaging materials

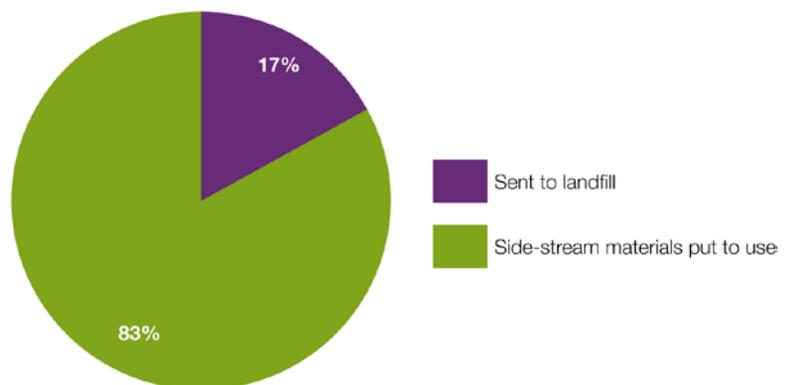


Closing the loop with side-stream materials

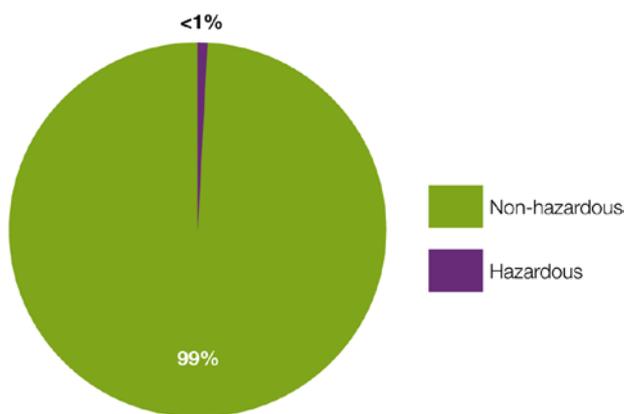
Resource efficiency, environmental performance and financial results all point in the same direction: Do not produce waste. To a large extent, we have managed to avoid creating waste by turning side-stream materials into products, therefore creating closed material loops.

In 2018, 155,400 tonnes or 83 percent of all side-stream and waste materials leaving the production processes were sold as products, sent for external use or reclaimed internally. 0.25 (0.6) percent of the process residual materials were sent to safe destruction or landfill as hazardous waste (classified according to local waste regulation in respective country of operation).

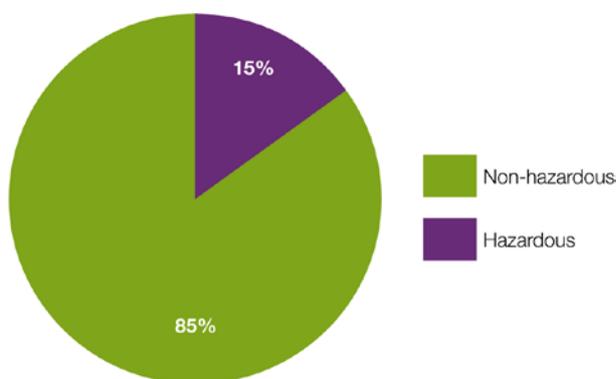
Part of process side-stream materials put to use



Classification of waste sent to landfill



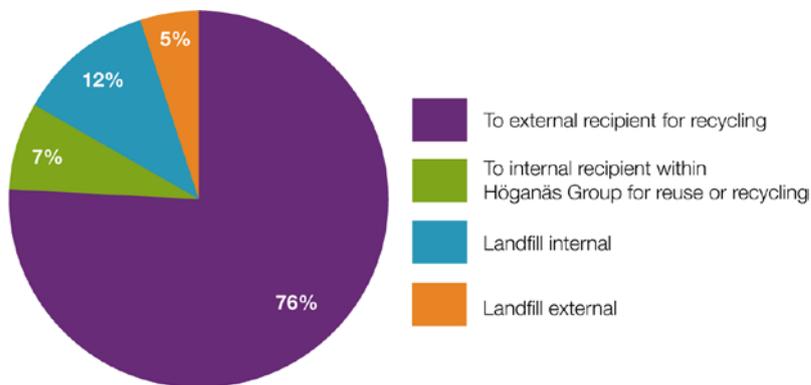
Classification of side-stream materials



From landfill to natural habitat

Waste to landfill is the last option, but when it must be done, it must be done well. In the municipality of Höganäs, Sweden, closed parts of the on-site landfill are successively being restored and opened to the public for recreational purposes. The area attracts not only hikers along the Skåneleden, a scenic coastal walking trek, but also hosts an abundance of wildlife. The area has become an important resting place for migrating birds.

Destinations of process waste and process side-stream materials

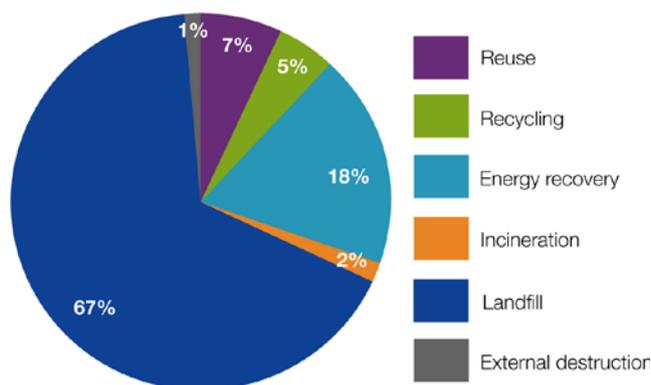


It takes knowledge, creativity and co-operation to find use for the different materials. Two of our most useful REACH registered product developments are Petrit® E and Petrit® T, which are both made of slag. Petrit E can be used to replace gravel in road construction, fillers in asphalt, construction materials and raw material for the production of stone wool. Petrit T functions as a lime replacement and can for example serve as lime additive for structure liming in clay soils, which improves the quality of the soil for agriculture.

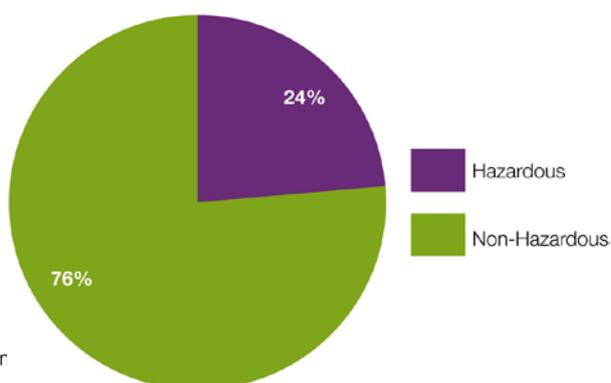
Melting furnace dust is sent for zinc recovery and other forms of dust are processed for iron recovery. Filter materials can find use as a slag former in metal production.

Non-process related waste amounts to 5,100 tonnes, or to less than 3 percent of the sum of all waste and side-streams.

Non-process waste by destination



Non-process waste



India recovers production waste for internal use as metal feed stock

The Indian operations have developed and implemented a way of reusing the waste generated in the production of cutting powders. The recovered waste material is subjected to magnetic separation and briquetted by an external vendor. The briquettes are used as iron feedstock in the melting and atomizing process. With this cross linking of materials between production routes, the amount of material going to landfill from the cutting powder production has decreased from around 10 percent to less than 3 percent. This has also reduced the need for raw materials in the melting process to the same degree.



Outcome 2018

Target description	Target	Result 2018
Lost time injury frequency, rolling 12 months	<3 by 2019	8.2*
Recordable injury frequency, rolling 12 months	–	36.5
Risk reduction number	>1.5 per employee and year	3.2
Fresh water intensity, m ³ per produced tonne	–	1.3
Waste reduction: % side-stream materials put to use	>85% by 2020 >95% by 2026	83%**

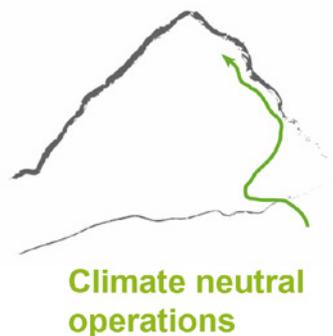
*Due to the on-going integration process, where safety work is prioritized, the lost time injury frequency is calculated on numbers that include the majority of our new co-workers from acquired companies.

**The number is calculated on process materials that exit the production process, either to another recipient or to landfill. Process material recirculated within the gates of the same production facility is excluded. This means the calculation base is changed compared to how the target was constructed. Comparable figures will be presented in the report for 2019.



Climate neutral operations

We have a vision of becoming a climate neutral operation, although we are aware that this is a huge challenge. To minimize our climate footprint, we need to utilize both established and newly developed methods. We also need to invest in research and innovation to make improvements beyond what is possible today. At present we focus on improving energy efficiency, transitioning to use renewable energy in production and transport, replacing fossil process coals and rethinking our materials supply.



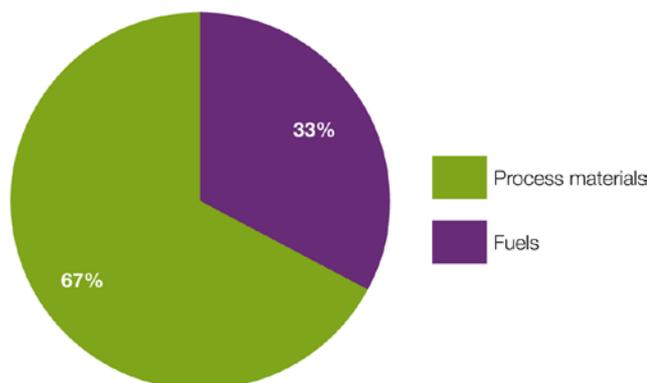
Our carbon footprint and the way forward

A climate roadmap that aims at decoupling earnings from climate impact emissions is underway and will be presented in 2019. The climate roadmap will guide the strategy and business planning and will cover:

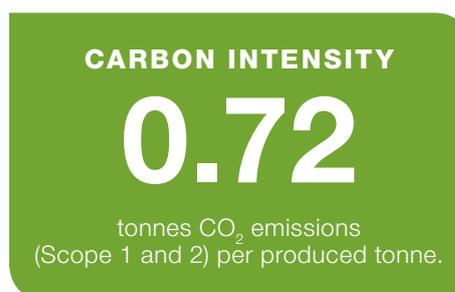
- mapping CO₂ emissions in upstream scope 3
- efficient sourcing of raw materials and transports
- supply of fuels and energy
- internal energy efficiency

Our largest source of direct carbon emissions is from our use of fossil process coals and fuels in production. In 2018, our direct (scope 1) emissions total was 270,840 tonnes. Natural gas stands for 96 percent of our CO₂ emissions from fuels. The rest is from LPG, diesel and petrol. The emissions from fuels are calculated based on

CO₂ emissions, scope 1



default emission factors from the EU-ETS framework and emissions from raw materials in production processes are calculated based on carbon content and mass balance where the remaining carbon content in outgoing materials such as waste, side-streams and products is deducted from the carbon content in incoming materials.



Direct carbon emissions, Scope 1	tonnes
Emissions from fuels as CO ₂ e	89,430
Carbon in raw materials as CO ₂ e	196,150
Carbon in waste as CO ₂ e	-12,860
Carbon in side-stream materials as CO ₂ e	-1,750
Carbon in products as CO ₂ e	-130
Total	270,840

Our indirect emissions (scope 2) are from purchased electricity. Where available, the indirect emissions are calculated on location-based emission factors provided locally by owners of distribution nets or energy suppliers. As a comparison, we have also used a market-based calculation based on national residual grid mix factors. (Sources: IEA reported emission factors for residual mix electricity, except for: Pennsylvania and New York State. "EPA Center for Corporate Climate Leadership regional data. Brazil "Ministry of Science, Technology, Innovation and Communication (MCTIC) and Belgium "Accord de Branche - CO2 mapping".)

CO₂ emissions from purchased electricity, tonnes

	Market based calculation	Location based calculation
2018	124,360	109,380

The individual companies within Höganäs are free to choose electricity with a higher percentage of renewable sources. In 2018, we avoided 14,980 tonnes CO₂ emissions by actively choosing electricity from renewable sources.

Transition to renewable fuels

There are currently few realistic alternatives to replace fossil fuels for Höganäs, due to the need for precise process control, high temperature and purity. To initiate a change we started the Probiostål project, which utilises the so-called Woodroll® process. After a number of lab studies, demonstrating the possibilities of the Woodroll® process – the gasification and restructuring of biomass to synthesis gas – a pilot plant was build at our site in Höganäs, Sweden, to perform tests on an industrial scale.

The plant, which was inaugurated in 2018, gasifies forestry-based biomass to synthesis gas. The gas meets the manufacturing process requirements and can serve as a replacement for natural gas in our metal powder production. Pilot scale test production is expected to start during 2019. If the technology is proven for use on an industrial scale, the

installed unit alone will enable us to reduce our fossil CO₂ emissions by about 10,000 tonnes per year.

Höganäs received two environmental prizes during 2018 for this initiative. One from the Höganäs municipality and another from Skåne regional council. If successful, the Woodroll® plant could potentially revolutionize the industry's efforts in phasing out fossil fuels.



Green reduction of iron ore

Fossil process coal used in our production is a challenge where we take the lead to become more renewable. The sponge iron plant is the only operation within the Group where we use fossil coke and anthracite to reduce iron ore into metallic iron. Today, the reduction process accounts for almost 70 percent of the Höganäs group's direct CO₂ emissions.

Our development programme for renewable alternatives identified and tested biochar as a replacement for some of the fossil reduction chemicals in 2018. The ongoing development is promising and can, if successful, result in a reduction of up to 10 percent of Höganäs Group's total direct emissions, or equivalent to 28,000 tonnes CO₂ per year.

The pilot plant for synthesis gas mentioned above can also be used to produce bio-coke. This will enable us to evaluate biogenic process carbon from various renewable raw materials with a long term objective to replace as much fossil carbon in the sponge iron process as possible.

Carbon footprint from transportation

During 2018, we initiated mapping of our transport emissions to create a baseline for systematic improvements. The results of the mapping will be used to prioritise actions for reducing the emissions from necessary transports in the years to come.

Other activities carried out during 2018:

- A new car policy resulted in replacing a number of company cars, service vehicles and fork lift trucks with electric alternatives, or with biogas vehicles.
- Centralised warehousing and optimised transports in the Asia-Pacific continent due to reduced number of warehouses in India. We have also introduced round trips on exports from Busan in South Korea to South-East Asia, all supporting reduced transport emissions.

- In late 2018, Höganäs made an agreement to use biodiesel HVO (Hydrotreated Vegetable Oil) to fuel the trucks for the 7,500 transports needed to move the incoming bulk raw materials from the company harbour to the sponge iron plant in Sweden. This change was possible thanks to all participating stakeholders' willingness to find an effective solution.

Supplier partnerships lead to efficient shipping solutions

In Sweden, the sea freight for inbound raw materials (iron ore) was improved by a 16 percent increase in payload, which saved a total of seven ship journeys of 1,500 km each. Careful planning and supplier partnerships made this possible.



High Capacity Transports save fuel

In 2016, Höganäs started testing High Capacity Transports (HCT) on the Höganäs-Helsingborg route in Sweden. HCT transport vehicles can carry two freight containers instead of one. Fully implemented, it would half the number of transports needed. The initial results from the 2017 and 2018 data are promising; we have met the target of 35 percent savings in fuel and with the change to using renewable HVO diesel, carbon emissions have been cut by 88 percent.

“We are looking to receive permanent permission for the HCT transports since, fully implemented, it would halve the number of transports needed,” says Johan Walther, responsible for logistics in Sweden.

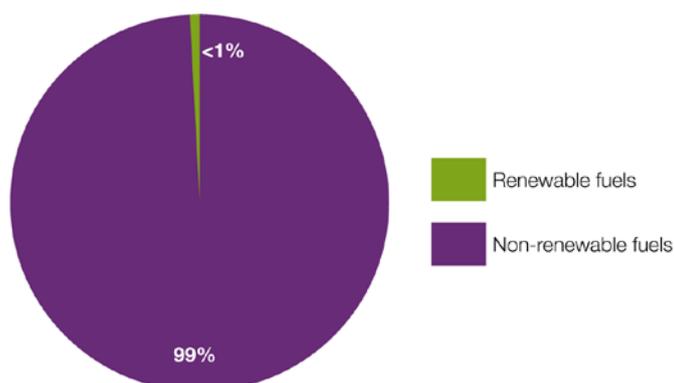


Energy use within the organization

Höganäs' energy use consists of fuel consumption and purchased energy.

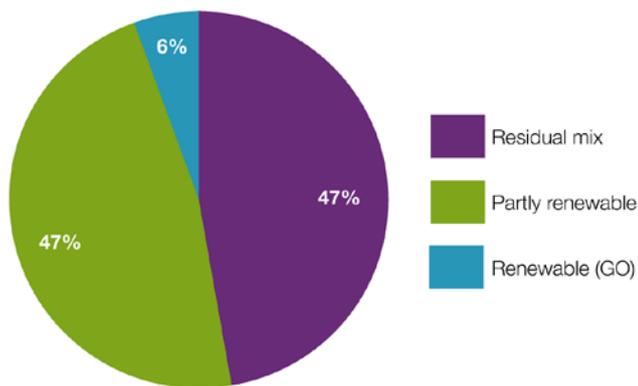
The fuels are mainly natural gas, LPG, diesel and petrol. We also use a small amount of biogas for production of hydrogen gas. In 2018, less than 1 percent of our fuel use was from renewable sources.

Energy use, scope 1, fuels



Some of the energy used is converted into residual heat which we can deliver to external parties. The main part goes to district heating and some to the municipal water treatment plant. In 2018, we delivered 57,700 MWh in the form of surplus heat to district heating in Swedish cities Högånäs and Halmstad. The export from Högånäs saved community emissions corresponding to an estimation of 12,000 tonnes of CO₂, compared to the normal production of heat by natural gas incineration.

Purchased electricity



Historically the purchase of electricity has been based on price first and environmental performance second. During 2018, we began exploring the business impacts of alternative electricity sourcing. Pre-studies to turn to renewable electricity were initiated in the US, India, China, Belgium and Sweden. In 2018, we purchased 527,100 MWh electricity of which 53 percent was from renewable or partly renewable sources.

Energy use, Scope 1, MWh	2018
Non-renewable fuels	445,700
Renewable fuels	2,700
Total, scope 1	448,400

Energy use, Scope 2, MWh	2018
Purchased energy	527,200
Self-generated energy	80,100
Sold self-generated heating	-57,700
Total, Scope 2	549,600

Total energy use, Scope 1 and 2	998,000
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Solar power in sunny India

Höganäs in India is exploring various ideas and options for green renewable energy for implementation at its sites in both Pune and Ahmednagar. In line with Höganäs' sustainability directives, the goal is to replace conventional energy usage with renewable energy sources, such as solar and wind.

In the first phase during 2017, rooftop solar panels were installed at the Pune office replacing 80 percent of the need for grid power. A similar installation at the production plant in Ahmednagar was put in place during 2018 and covers about three percent of the plant's total electricity need. The project will continue in 2019.

Höganäs is exploring the possibilities of owning power generation to reduce price fluctuation risk, improve predictability and as a means of reducing its climate impact.



"India – being rich in solar energy and the availability of solar technology at competitive pricing – has enabled us to pursue solar as the main renewable energy source. This allows us to substitute the predominantly fossil-based electrical energy usage from the state grid," says Shirish Deore, who is responsible for the execution of the project.

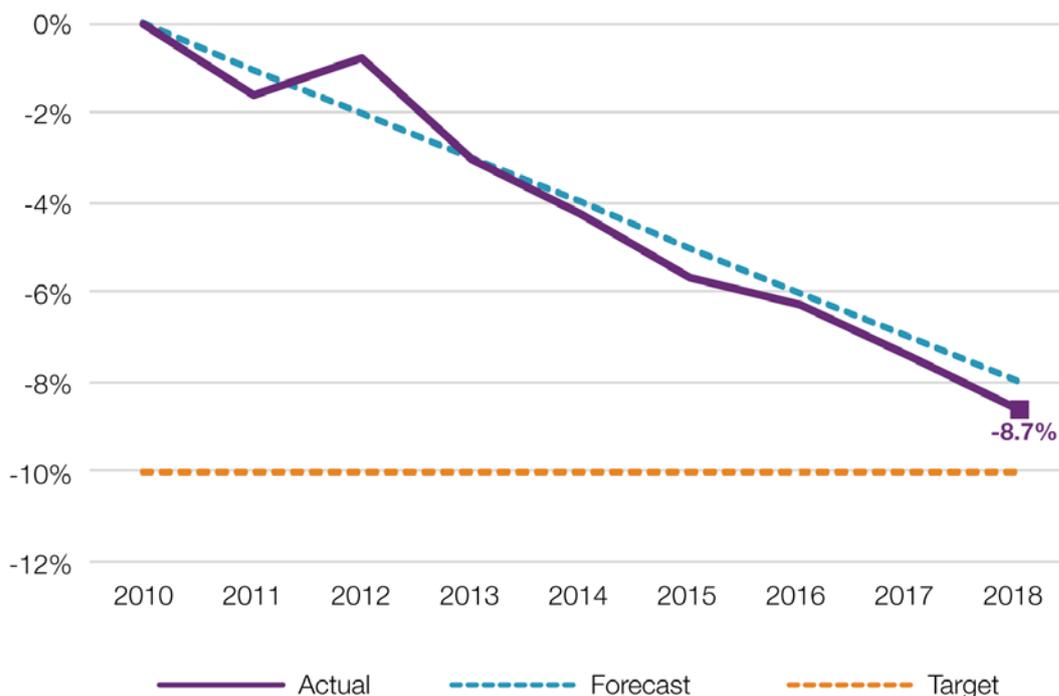
Energy management for increased efficiency

Our energy efficiency initiative, the "Energy Challenge", with the goal of a 10 percent reduction per produced tonne of metal powder between 2010 and 2020, has been successful, with a steady decline in energy use. The energy use per produced tonne has decreased by 8.7 percent since 2010.

An additional target securing efficient energy handling is that our most energy intensive operational units with melting operations should be certified as ISO 50001 energy management by the end of 2021. Our major Swedish production sites are already certified and other production sites are on their way towards compliance.



Energy Challenge



Saving energy around the world

In Halmstad, Sweden, improved cooling efficiency and change of cooling water pumps reduced electricity consumption in the system by 700 MWh per year. At the same site, an in-house project aimed at increasing the capacity and energy efficiency in the electric arc furnace melting process, has paid off resulting in a 3 percent reduction in electricity consumption and a 20 percent reduction of process coals used. At the same time shorter melting cycles have increased the total production capacity of the plant.

In Mogi das Cruzes, Brazil, a similar project has commenced with similarly good results. Best practice is shared between sites and standardized.

At our largest site in Höganäs, Sweden, improvements in natural gas reforming saves 500 MWh per year.



Moving towards recycled materials use

In 2015, a transition towards exchanging virgin raw materials with secondary (recycled) materials for the North-American High-Alloy production was commenced. Along the way, various obstacles to maintaining product quality and capability unscathed have been solved. In 2018 more than 41 percent of the virgin raw materials have now been replaced by secondary materials.

The project has been a success with both cost savings and substantial CO₂ reductions.

“We saw a win-win opportunity and pursued it to significantly reduce the climate impact and costs at the same time,” says Ahmad Nasser, who heads up the High Alloy Operations in North America.



Sustainable sourcing makes a difference

We have started to map upstream (scope 3) emissions of carbon dioxide caused by the raw materials supply to the metal powder production. Although the mapping is incomplete, interesting results are already emerging. For example, more than 90 percent of the total CO₂ emissions at the Belgian operations emanate from upstream raw materials sourcing. We expect that working to establish sustainable sourcing will reduce the total climate impact in the years to come.

Outcome 2018

Target description	Target	Result 2018
Energy intensity per produced tonne	-10 % by 2020 (base year 2010)	-8.7%
Percentage production sites with melting operations certified acc ISO 50001	100 % by 2021	2 of 8 sites, or 25%

Governance

Corporate governance at Höganäs is based on applicable legislation and internal policies and procedures. Sustainability is an integral part of Höganäs strategy and the ultimate responsibility and decision-making authority for Höganäs' sustainability performance and compliance with statutory and regulatory requirements lies with the Board.

The Board establishes each year its working plan, which integrates sustainability reporting and risk-management reporting. An extensive risk matrix, including sustainability risks and action plans, is prepared by the group management each year and reviewed by the Audit Committee and the Board. On a needs basis, tighter follow-up is decided upon for specific risks. The Board receives updates on Höganäs fulfillment of sustainability goals at board meetings and every board meeting also includes a review of Höganäs' operations, including sustainability issues. In addition, the owners receive an annual and comprehensive compliance and progress summary on sustainability, according to a Sustainability Framework, a set of minimum requirements and development. They cover issues such as environmental protection, efficiency in operations, occupational health and safety, social contribution and ethics.

During the year the Board held in total seven meetings, of which five were physical meetings and took place at the sites in Höganäs and Halmstad. The management team members of all the Product Areas, Continents and Group Functions presented their goals, strategies and issues related to their respective area of responsibility. The Board addressed strategic issues related to the global trends, such as sustainability. The Board also addressed matters related to health and safety, environment and sustainability in investment decisions.

To further support decision making, there are four committees or councils covering areas such as remuneration principles and other terms of employment, financial reporting and policies, risk management, auditing, compliance, ethics, projects and investments.

The General Counsel and Senior Vice President Sustainability, a member of the management team and reporting to the CEO, is appointed to have the responsibility to drive and develop the sustainability strategy and performance. The management team is responsible for the implementation of the sustainability strategy, Mount Sustainability, and for the performance of the sustainability development within each area of responsibility.

A corporate sustainability function, consisting of sustainability specialists, works globally with improvement programmes and follows up on the implementation of decisions taken, driving and co-ordinating sustainability work at Group level. Corporate Sustainability also acts as an advisor concerning the sustainability strategy and ensures that relevant sustainability issues are brought to the attention of Group Management.

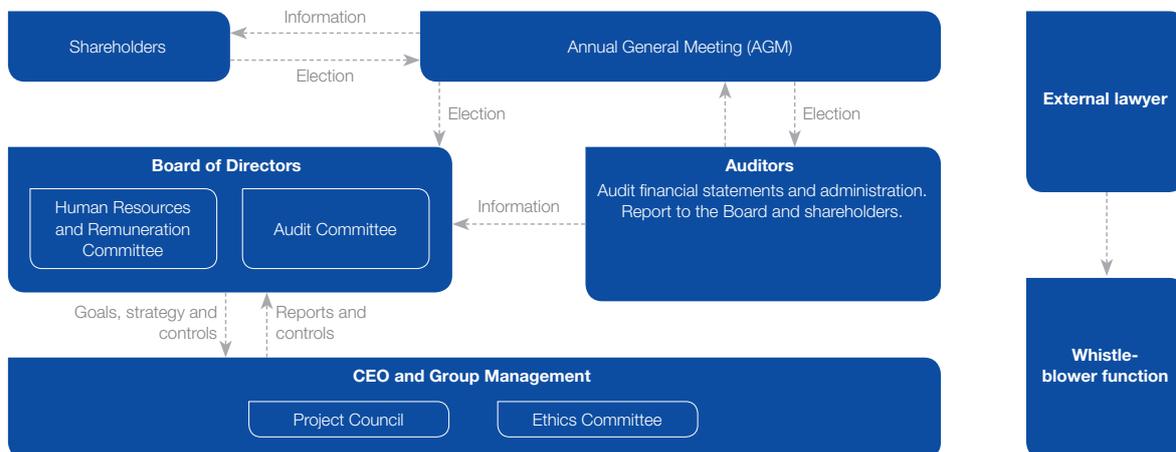
Sustainability management at Höganäs is based on our vision and the management philosophy, More Höganäs, the Code of Conduct, including the ten principles of UN Global Compact, Höganäs Mount Sustainability and subsequent policy documents.

The foundation for Höganäs' internal governance instruments and risk management is the management system, which is to a large extent certified and third-party audited. The management system covers all operations. It is based on Group policies, directives and procedures including the Precautionary Principle (ie. whenever changes to the organization, operations or products are planned, a precautionary approach concerning environmental

impact is applied). In the local management systems, these Group documents are further supplemented by additional processes and procedures.

Targets and action plans that include finance, quality, environment, energy and occupational health and safety are used to control the operations. Höganäs incident reporting procedure and the grievance and whistleblowing function further support the reporting of the occurrence of sustainability issues and the response and management of these issues.

Relevant policies, certifications and legal statements are available [at hoganas.com](http://at.hoganas.com).



Our path ahead



During 2018 we continued our journey up Mount Sustainability. Even though there is a lot more work to do, we have now set a good basis for our continued efforts to improve further. In 2018 we noticed a more co-ordinated movement within our organisation. During 2019 and the years to come, we will continue to embed sustainability into our business and daily work. We will also continue our efforts to improve the monitoring of our sustainability performance and clarify our targets accordingly. We will

foster the attitude that no job or contribution is too insignificant, too difficult or too unknown, so as not to take personal ownership. With joint efforts, we will work to achieve our sustainability goals.

A great and meaningful place to work

In the coming years, we will focus on how we can seamlessly meet, lead, develop and reward our people around the globe. We will establish common diversity principles and a global diversity forum with the aim of placing more emphasis on equal rights, diversity development and discrimination. The implementation of global principles for employment standards is also part of our work to ensure fair working conditions, freedom of association as well as fair living wages and benefits at all sites. We will continue to strengthen our value-based culture by consistently applying our management philosophy when structuring our ways of working. To assure continuous learning and to develop leadership capabilities through structured feedback, coaching and training based on our identified leadership principles is another important priority.

Building communities and responsible partnerships

The main focus during the next year will be on the roll-out of our updated Code of Conduct to all co-workers, including the preparation and introduction of targeted training programmes. Anti-corruption and ethical business behaviour, as well as values and principles that encompass human rights, will be important elements of these trainings. To enhance the governance further, and support the reorganisation that took place during 2018, we will implement global key principles to define clear responsibilities and mandates. We will also continue the work of integrating sustainability risks into our risk management process.

Our engagement in the supply chain will continue with more efforts to implement our updated Supplier Code of Conduct and to complete the assessments of our prioritized suppliers within established timeframes. The establishment of the global supplier and material assessment process for direct materials will be completed next year. The process includes routines for both communication of our Supplier Code of Conduct, regular sustainability risk evaluations, and audits in case of elevated risks or non-compliances. Subsequently, our efforts will be expanded to suppliers of non-direct materials, starting with the introduction of our Supplier Code of Conduct to this group.

Sustainable offerings and long-term profitability

During 2019 our work with life cycle assessments will continue both internally and within the European Powder Metallurgy Association (EPMA). We will also finalise the qualitative sustainability analysis of our product portfolio. The results from this study will be used

to clarify our products' sustainability goals for upcoming product and technology developments. We will also further update our ways of working with investment projects and ensure the Sustainability Life Cycle Assessment comes into the investment process early on.

Future proof business

Our commitment to Zero Accidents will be supported by activities such as promoting a Zero Accidents culture, continuous risk reduction, and global sharing of best practice. Our target is to certify our health and safety management systems with ISO 45001 by 2022. From January 2019, operations will be strengthened with a new co-worker role that will coordinate and drive the global safety agenda towards a zero accidents culture.

The on-going implementation of LEAN and 5S (Sort, Set in order, Shine, Standardize and Sustain, with an extra S for Safety) is our tool to identify, improve and maintain local best practices, including ways of working to avoid risks. Our goal for 2019 is to reach a lost time injury frequency (LTIFR) of less than 3 per million hours worked for our co-workers. To eliminate exposure to dust and hazardous substances, we have set ambitious reduction targets for two indicator elements (cobalt and nickel) to be reached by 2020 in all workplaces. Intensified efforts to clarify our co-workers roles and responsibilities with clear prioritization, goals and development plans will also support a safe and healthy workplace.

As part of our vision of Zero Waste, we aim to put more than 85 percent of our side-stream materials to use by 2020, and more than 95 percent by 2026.

Climate neutral operations

Climate neutral operations is our most ambitious vision and also one of the most challenging. A long term Climate Roadmap that aims to decouple earnings from climate impact emissions is underway and will be presented early 2019. The Climate Roadmap will guide the strategy and business planning, as well as form the basis for action plans in the years to come. The areas covered in this work are among others the upstream scope 3 CO₂ emissions, efficient sourcing of raw materials and transports, supply of fuels and energy and internal energy efficiency.

To get closer to our vision, the necessary co-operation with industry partners, academia and society's various actors will continue in the years to come. One such joint activity, is the pilot-scale plant for renewable energy gas, which is currently under start-up for testing at our site in Höganäs, Sweden. If successful, the plant will be integrated permanently into our operations and replace about 50 gigawatt hours of non-renewable energy per year from 2020.

To conclude

We know where we are and where we want to be in most areas. Now we are in the middle of finding the best possible route to reach identified goals and to clarify parts of the map that are still not completely discovered. As each path of our Mount Sustainability becomes more defined every year, our sustainability work will become more targeted and lead to more positive results.

Nicklas Lång

Senior Vice President Sustainability, Höganäs Group

GRI Index

- Fully
- ◐ Partly
- Omitted

GRI index	Chapter	Fulfillment
102-3 Location of headquarters	Höganäs short facts	●
102-4 Location of operations	Höganäs short facts	●
102-7 Scale of the organization	Höganäs short facts	●
102-5 Ownership and legal form	Höganäs short facts	●
102-1 Name of the organization	Introduction – about this report	●
102-50 Reporting period	Introduction – about this report	●
102-54 Claims of reporting in accordance with the GRI Standards	Introduction – about this report	●
102-56 External assurance	Introduction – about this report	●
102-51 Date of most recent report	Introduction – about this report	●
102-52 Reporting cycle	Introduction – about this report	●
102-45 Entities included in the consolidated financial statements	Introduction – about this report	●
102-48 Restatements of information	Introduction – about this report	●
103-1 Explanation of the material topic and its Boundary	Introduction – about this report	●
102-53 Contact point for questions regarding the report	Introduction – about this report	●
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102-14 Statement from senior decisionmaker	Word from CEO	●
102-12 External initiatives	Engagement in associations and initiatives, Governance	●
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205-2c Communication and training about anti-corruption policies and procedures	Supply chain development	●
308 Supplier environmental assessment	Supply chain development	●
414 Supplier social assessment	Supply chain development	●
102-2 Activities, brands, products, and services	Solutions that create value	●
102-6 Markets served	Solutions that create value	●
102-16 Values, principles, standards and norms of behaviour	More Höganäs - our values and principles	●
102-46 Defining report content and topic boundaries	Identifying our focus	●

GRI index	Chapter	Fulfillment
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102-44 Key topics and concerns raised	Stakeholder dialogue	●
102-42 Identifying and selecting stakeholders	Stakeholder dialogue	●
102-40 List of stakeholder groups	Stakeholder dialogue	●
102-49 Changes in reporting	Key topics for future success	●
102-47 List of material topics	Key topics for future success	●
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102-8 Information on co-workers and other workers	Our people	●
401-1 New employee hires and employee turnover	Our people	●
405-1 Diversity of governance bodies and co-workers	Diversity and inclusion	●
406-1 Incidents of discrimination and corrective actions taken	Diversity and inclusion	●
404-2 Programmes for upgrading employee skills and transition assistance programs	Building Competence	●
404-1 Average hours of training per year per co-worker	Building Competence	●
404-3 Percentage of co-workers receiving regular performance and development reviews	Building Competence	●
405-2 Ratio of basic salary and remuneration of women to men	Equality and equal remuneration	●
102-41 Collective bargaining agreements	Equality and equal remuneration	●
416-2 Incidents of non-compliance concerning the health and safety impacts of products and services	Business ethics and anti-corruption	●
417-2 Incidents of non-compliance concerning product and service information and labeling	Business ethics and anti-corruption	●
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419-1 Non-compliance with laws and regulations in the social and economic area	Business ethics and anti-corruption	●
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GRI index	Chapter	Fulfillment
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102-2 Activities, brands, products and services	Sustainable offerings and long term profitability	●
403-9 Work-related injuries	Zero accidents	◐
403-2 Hazard identification, risk assessment and incident investigation	Zero accidents	●
403-1 Health and safety management system	A systematic approach to drive improvements	●
403-8 Workers covered by an occupational health and safety management system	A systematic approach to drive improvements	●
403-4 Worker participation, consultation and communication on occupational health and safety	A systematic approach to drive improvements	●
403-5 Worker training on occupational health and safety	Omitted due to lack of reliable data	○
307-1 Non-compliance with environmental laws and regulations	A systematic approach to drive improvements	●
403-7 Prevention and mitigation of occupational health and safety impacts	Towards next level of clean factories	●
303 Water (303-1, 2, 3, 4 and 5)	Using water responsibly	●
305-7 Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	Air emissions	●
301 Materials (301-1, 2 and 3)	Use of materials	●
306-2 Waste	Closing the loop with side-stream materials	●
305-1 Direct (Scope 1) GHG emissions	Carbon footprint	●
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302-1 Energy consumption within the organization	Energy use within the organization	●
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