



Technology Metals | Advanced Ceramics

# Sustainability Report Update 2013

# Statement by the Board

Innovation is the driving force behind our company. In harmony with the sustainable orientation of our business, innovation is the basis of our long-term corporate success. We remained true to this principle even in the difficult 2013 financial year. Despite tough overall economic conditions, we continued to build upon our sustainability commitments, and developed them into a key feature of our collaboration with our stakeholders – investors, customers, partners, suppliers and employees.

We are convinced that preserving sustainability and responsible behavior will open opportunities for change in our company, and thus strengthen it for a successful future. That is why a sustainable business model is a strategic part of H.C. Starck's corporate growth, representing both opportunities and challenges in its implementation on a global scale within our company. This includes the development of high-quality and safe products that fulfill our customers' requirements, while reducing our environmental impact and creating social benefits.

A major driver behind our innovation is based on the global megatrends in our target markets, which induce change and accelerate transformation. Pioneering products and applications that make an essential contribution to human life today and tomorrow is a primary goal. This enables the development of growth in high-performance end products that make life easier for people worldwide.

We are proud of the progress and success we have achieved. These achievements are the basis on which we can confidently tackle the challenges ahead, together with our employees.

## **Dr. Andreas Meier**

Chairman of the Executive Board (President and CEO)

## **Ludger Heuberg**

Member of the Executive Board (CFO, until July 2014)

## **Edmar Allitsch**

Member of the Executive Board

## **Dr. Dmitry Shashkov**

Member of the Executive Board

# Strategy

From sputtering targets for the photovoltaic and electronics industries to high-performance powders for capacitors in mobile devices such as smartphones and tablet PCs, H.C. Starck is a leading global developer and producer of materials for high-tech industries, supplying key materials for economic change. Our 2,834 employees (as of December 31, 2013) work at 15 state-of-the-art production sites in Europe, North America, and Asia; in our international sales offices and in our company headquarters in Germany.

Automotive and mechanical engineering, electronics and chemicals, medical equipment and aerospace – our products are used in many growth industries. We supply powders, compounds, semi-finished and finished products, and customer-specific parts made from the technology metals – molybdenum, niobium, tantalum, tungsten and rhenium; materials made of advanced ceramics; and thermal spray powders for surface technology.

In 2013, the core business of H.C. Starck was divided into three areas of activity. In the Advanced Metal and Ceramic Powders (AMCP) business segment, we produce powders from technical metals and ceramics; the Fabricated Products (FPR) business segment creates customized parts and components made of technology metals; and the Ceramics (CER) business segment manufactures components made of advanced ceramics. What influences us? Five global megatrends and how we interface with them. > [REPORT 2012 | p.06](#)

## Launching into New Markets

Strategic partnerships made it possible to expand our activities in 2013 into new markets, regions, and technologies that offer our customers the best possible products and services, while remaining competitive through efficient cost management.

The joint ventures we initiated in Asia – with Jiangxi Rare Metals Tungsten Holding Group Co. Ltd. in China and with the chemical company New Chisso Corp. in Japan – are progressing as expected. These partnerships are about to be joined by another joint venture initiated in July 2013 called Nui Phao H.C. Starck Tungsten Chemicals Manufacturing in Vietnam.

On January 1, 2013 in Germany, the newly established H.C. Starck Smelting GmbH & Co. KG began its activities in Laufenburg. Our subsidiary Chemitas started its operations in Goslar in May 2014. The Euclid, Ohio (USA) facility has expanded into a Center of Excellence for the fabricating and machining of tungsten and tungsten alloys. In addition, successful restructuring of the entire H.C. Starck Group has increased productivity and minimized costs. Globally, many employees participated in the Lean Six Sigma program, which teaches a continuous improvements methodology and techniques to increase productivity, reduce throughput times, and form new areas of business in which more can be achieved using the same or less amount of resources.

# Organization and Systems

## Committed to Society

As a global company, we are a responsible corporate citizen to our stakeholders and especially to those people who live in close proximity to our facilities. That is why we strive for the greatest possible transparency and engage in dialog with all interested organizations and groups. Our business activities are built on adherence to local, national and international regulations, as well as strict ecological and ethical standards. We have an ambitious sustainability strategy that can only succeed if based on effective organizational principles. To achieve this, we use efficient management systems, an integrated sustainability structure, and binding guidelines applicable to all employees across our entire value chain. We measure ourselves against the very highest quality and safety standards. In 2013, for example, we passed all the audits required for ISO matrix certification, and for the accreditation of our analytical laboratories. We also utilize a Responsible Supply Chain Management System (RSCM), which has been assessed by independent third-party auditors. This system ensures that the raw materials used in our production facilities originate exclusively from conflict-free sources.

> [REPORT 2012, p.10](#)



**Quality**  
DIN ISO 9001



**Environmental**  
DIN ISO 14001



**Energy**  
DIN ISO 50001



**Occupational Safety**  
OHSAS 18001



**Medical Technology**  
DIN EN ISO 13485



**Aviation**  
DIN AS/EN/JISQ 9100



**Laboratory Accreditation**  
DIN EN ISO/IEC 17025



**Responsible Supply Chain Management**

## Equipped for the Future

Innovation is the key to the future marketplace. Only if you continuously renew yourself and recognize your weak points you will be fit for the future. In accordance with this principle, H.C. Starck began its Fit4SUCCESS program in the summer of 2013. SUCCESS stands for Strategy, Structure and Culture Change Ensuring Sustainable Success. The Fit4SUCCESS program is based on a comprehensive diagnosis of the company's situation combined with the challenges H.C. Starck will face going forward. Based on these findings, management can then develop the necessary changes, and actively drive transformation. The company situation was assessed and Fit4SUCCESS is now underway. Project teams are developing a set of activities to solve problems and optimize procedures – from organizational structure, to business processes, all the way through to cross-company collaboration.

# Product Innovation and Quality



## Help for the Heart

If the heart loses its rhythm, life is in danger. Help can be had with Implantable Cardioverter-Defibrillators (ICD), which are implanted into the patient's heart area. These devices monitor each beat of the heart in order to protect against sudden death. Until now, the life-preserving pulse emitted by defibrillators has usually been produced by an electrolytic aluminum capacitor, making up almost half of the entire device. For this reason, almost every manufacturer is busy working on special tantalum capacitors to minimize the size of the units. The smaller the ICD, the less it is noticed once implanted into the chest musculature, thus improving the standard of living for patients. In 2013, three types of defibrillators made by one of our customers gained approval in Europe, and their capacitors are manufactured using tantalum powder made by H.C. Starck.

## High Technology for Tomorrow

Light-emitting diodes, or LEDs, boast numerous advantages, from high energy efficiency to a longer lifespan. Their bluish, cold-colored light however, is often considered a drawback. White LEDs on the other hand are of luminescent material that presents a new business opportunity for H.C. Starck's silicon and aluminum nitrides. Nitride-based and oxynitride-based luminescent materials give LEDs a warmer and whiter light. The base materials for the manufacture of nitride-based luminescent materials are primarily silicon and aluminum nitride powders, which help to produce naturally colored light, and are a key contributor to the efficiency of this material, and in turn help to save a great deal of energy.

Another future technology is known as additive manufacturing, which has become very important in numerous industries. It allows complete freedom of three-dimensional design, and creates new possibilities for customized components, ranging from home 3D printers all the way to industrial machinery used in the automotive and aerospace industries, as well as medical technology. Already being a major player in the additive production market with our gas-atomized metal powders, superalloys, cobalt-based alloys and stainless steels, we are certain that this market will grow considerably in the future.

# Compliance and Raw Materials Procurement



## **Conflict-Free Sources**

Decreasing resources, strict export limitations, volatile prices, and more stringent demands regarding the transparent procurement of conflict-free raw materials – all these factors present our raw materials procurement with major challenges. Yet H.C. Starck's position remains uncompromising and clear: we stand for ethically acceptable and responsible raw materials policies. These are based upon two strategic principles: the continuous expansion of our recycling activities in order to reduce the use of primary raw materials; and purchasing raw materials only from suppliers who comply with the requirements of our Responsible Supply Chain Management System.

In July 2013, the Electronic Industry Citizenship Coalition (EICC) and the Global e-Sustainability Initiative (GeSI) have again declared H.C. Starck's tantalum supply chain free of conflict materials and lists the company as a Conflict-Free Smelter (CFS). We are one of the few companies to pass a third consecutive audit under the CFS Validation Program introduced in 2010. To be declared conflict-free, H.C. Starck had to prove that it has documented a conflict minerals policy which is integrated into business operations, deploys a system for tracing finished goods back to its mine of origin, and documents that all purchased materials are from non-conflict sources.

## **Secure Raw Materials Supply**

Our customers also benefit from a sustainable and secure supply of raw materials. With this in mind, H.C. Starck together with Nui Phao Mining, a subsidiary of Vietnam's biggest private conglomerate, the Masan Group, signed an agreement in 2013 on the founding of a joint venture in Vietnam which will produce up to 6,500 tons of tungsten units annually from 2014 onwards. The agreement guarantees H.C. Starck industrial leadership of the joint venture, and sole purchasing rights for most of what is produced annually. We are continuously expanding our recycling expertise and services, and at the same time entering into strategic partnerships. By doing this we are securing a "conflict-free" and long-term, competitive supply of raw materials.

# Conservation of Resources through Consistent Recycling



## Comprehensive Recycling

Consistent recycling is the foundation of a sustainable raw materials policy, so that is why recycling and environmental protection form an integral part of our business strategy. We obtain about half of our raw materials through internal recycling. In addition, we are continuously working on improving our products and processes in order to reduce any risks and impacts on the environment, safety, and the health of employees and those living near our plants. Also, we are increasing the energy efficiency of our facilities, and minimizing every possible production risk. Specific performance indicators help us to monitor and optimize our environmental, health, and safety policies.

H.C. Starck is already the world market leader in the recycling of high-grade technology metals. Our recycling expertise, combined with our closed-loop material processes, demonstrates our exemplary commitment to the protection of resources and the environment. One example is overspray recycling, where the spray powder which has been sprayed past the workpiece is reclaimed and fed straight back to the tungsten and rhenium production, thus ensuring extremely efficient raw material consumption.

## Clean Energy

The development of fuel cells for the generation of electrical energy is an important milestone. Fuel cells convert the chemical energy in fuels into electrical energy – cleanly, quietly, and largely without harmful emissions. The Solid Oxide Fuel Cell (SOFC) is one of the most effective types of fuel cell. Protective coatings for SOFCs are often made using a thermal spray process. Thanks to the insulating and simultaneously conducting properties of the coatings, they improve the longevity and stability of SOFCs at high temperatures, and therefore the efficiency of the fuel cells. The production of these types of SOFC powders at H.C. Starck are being expanded based on positive market outlooks.

# Employees



## Promoting Qualification

Well-trained, committed, motivated employees are a key to our long-term success. That is why we place great value on promoting and training our staff. In the year 2013 we launched our Sales Academy, an international training program for our sales workforce, which will also support our Sales Excellence Initiative. The program is based upon the specific requirements of H.C. Starck, and was developed and implemented in cooperation with Sales, Marketing, and Talent Management, and with the support of an external partner. More than 100 employees from Sales and Procurement have attended the Sales Academy, and undergone training in three modules over a period of nine months at 18 workshops in Hannover, Boston, Tokyo, and Shanghai.

Project work is part of our daily routine at H.C. Starck. In 2013, we launched our multi-month qualification program PM Basic, in order to implement methodical and process expertise in the company in a standardized way to effectively increase the quality of our projects long-term.

## Leadership Makes the Difference

Back in 2012, we had already introduced new leadership principles to serve as guidelines for the implementation of our strategy. Leadership Feedback, introduced in 2013, is a 180° assessment approach which will play a key role in the realization of these leadership principles. The views of employees on the leadership skills of their supervisors are important to develop a complete image of our own effectiveness. By launching this we have initiated a process which will promote collaboration through open dialog and mutual understanding.

## Occupational Safety at Every Location

Again in 2013, there were regular safety training courses at our locations. We have also laid the foundations for health management at all of our German sites, because the health and performance of our workforce is important to us. The first activities to be launched were our "Cycle to Work" campaign and a Health Day in Goslar for all employees on-site. > [REPORT 2012 | p.17](#)

# Society



## Investing in Education

Whether in Germany, the US, or Asia, we place a lot of emphasis on social activity, especially in the places where we produce and work. We focus on supporting young people in their education, promoting dialog between business, science, and society, and our commitment to social causes such as the planting of a mangrove forest in Thailand or our participation at the Day of Lower Saxony in Germany.

## Passion for Science

H.C. Starck relies heavily on future generations in order to attract new employees and new talent now. Our Goslar site supports students at Sudmerberg Primary School, with the aim of assisting primary school teachers with interactive teaching aids which will help to encourage interest among schoolchildren. In Laufenburg we also have our eye on young people. In the fall of 2013, as part of our "Everyday Chemistry" teaching module, 13 young people were invited to become involved in experimental and analytical work together with our experts in our training lab. H.C. Starck has been running special events like its "Open Laboratory" for more than 12 years. H.C. Starck sponsored the ASM Materials Camp in Newton (US), where teachers were given basic knowledge of materials sciences which they could then use in their classrooms with students.

> [REPORT 2012 | p.18](#)

There is also a dual study course aimed at young adults, which H.C. Starck offers in conjunction with Ostfalia University for Applied Sciences in Germany. Graduates can achieve qualification as electronics engineers for automation, as well as Bachelor of Engineering qualifications. This training specifically prepares students for a career in the chemical or electronics industries.

## Aid for Flood Areas and 2013 Charity Campaign

Employees and members of the plant fire brigade at H.C. Starck in Goslar were involved in catastrophe response in areas of Lower Saxony and Saxony-Anhalt affected by flooding. From June 5 to 11, 2013, members of the plant fire brigade protected the Grimnitzer Damm causeway in the town of Halle (Saale), filled thousands of sandbags in Magdeburg, and secured an electrical supply for the industrial port there. H.C. Starck employees donated more than 3,480 euros to UNICEF by ordering special UNICEF Christmas cards.

# Facts and Figures

Business Data		2011	2012	2013
Sales	EUR million	883.2	862.9	703.9
Production quantity	t	41,231	38,640	37,501
Research and development expenses	Percent of sales	2.06	2.52	3.00

Employee Statistics		2011	2012	2013
Employees (full time equivalent)	Number	2,855	2,954	2,834
Female	Number (%)	538 (18.8)	558 (18.9)	541 (19.1)
Temporary	Number (%)	171 (6.0)	208 (7.0)	312 (11.0)
Female, temporary	Number (%)	27 (15.8)	30 (14.4)	64 (20.5)
Germany: state-certified trainees (commercial/industrial) <sup>1</sup>	Number	100 (22/78)	136 (26/110)	128 (24/104)
Employees below 20 years	Number (%)	12 (0.4)	7 (0.2)	14 (0.5)
21–30 years	Number (%)	451 (15.8)	469 (15.9)	446 (15.7)
31–40 years	Number (%)	658 (23.0)	652 (22.1)	636 (22.4)
41–50 years	Number (%)	900 (31.5)	907 (30.7)	865 (30.5)
51–60 years	Number (%)	755 (26.4)	806 (27.3)	760 (26.8)
61–70 years	Number (%)	76 (2.7)	110 (3.7)	110 (3.9)
Not specified	Number (%)	3 (0.1)	3 (0.1)	3 (0.1)
Days away from work (DAW)	Number	286	494	593
Accident rate (employees per million working hours)	MAQ	3.00	3.13	4.06
Severity rate	USQ	57	97	120
Fatal accidents	Number	0	0	0
Regular occupational health checkups	Number	2,294	2,545	1,872
Number of first aid training sessions	Number	313	258	214

Environmental Statistics		2011	2012	2013
Total amount of wastewater	m <sup>3</sup>	2,621,455	2,302,198	2,279,680
Inorganic salts in wastewater runoff	t	13,330	11,781	12,052
Total metals in wastewater runoff	t	8	9	8
Waste total	t	37,353	42,654	49,535
Total non-hazardous waste	t	28,147	33,335	37,106
Total hazardous waste	t	9,206	9,319	12,429
Recycling rate (in-house waste)	%	30	39	43
Total electricity	GJ	775,485	831,374	805,055
Carbon dioxide (CO <sub>2</sub> ), indirect <sup>2</sup>	t	128,730	138,008	133,639
Total natural gas and fuel oil <sup>3</sup>	GJ	969,030	904,735	922,948
Carbon dioxide (CO <sub>2</sub> ), direct	t	55,608	51,944	52,955
Total steam	GJ	351,005	348,614	399,811
Total water (drinking, cooling, industrial, and deionized water)	m <sup>3</sup>	4,764,183	5,008,392	4,856,520
Total technical gases <sup>4</sup>	m <sup>3</sup>	27,329,796	27,637,298	25,217,987
Air emissions: dust	t	8	13	15
Total greenhouse gases <sup>5</sup>	t	57,387	60,081	52,955

1 Number of state-certified trainees at Goslar, Laufenburg, Selb, and Hermsdorf sites. Selb and Goslar offer commercial traineeships.

2 Definition: electricity => 0.166 t CO<sub>2</sub>/GJ => 597.6 g/kWh (0.166 = factor defined by German Federal Environmental Agency (UBA) in 2005).

3 Definition: natural gas => 0.057 t CO<sub>2</sub>/GJ; fuel oil => 0.074 t CO<sub>2</sub>/GJ.

4 Gases: argon, nitrogen (N<sub>2</sub>), hydrogen (H<sub>2</sub>), and others (especially oxygen (O<sub>2</sub>)).

5 Total greenhouse gases: methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), perfluorocarbons (PFC), fluorocarbons containing halogens (HFC) and sulfur hexafluorides (SF<sub>6</sub>) + CO<sub>2</sub> direct.

# Excerpt of GRI Reporting

Strategy and Analysis		
1.1	Statement by the Board	Report 2012: p. 1, Update 2013: p. 2
1.2	Key impacts, risks, opportunities	Report 2012: p. 6–7, Update 2013: p. 2–3
Organizational Profile		
2.1	Name of organization	H.C. Starck GmbH
2.2	Brands, products, services	Report 2012: p. 2–4, Update 2013: p. 3
2.3, 2.4, 2.5, 2.7, 2.8	Operational structure, headquarters, countries, markets, scale	Report 2012: p. 2–3, 8–9, 20
2.6	Ownership and legal form	Opus Investment S.à.r.l. is the parent company of the group. The company is owned by The Carlyle Group and Advent International.
2.10	Awards	Please visit our GRI Index online. <sup>6</sup>
Report Parameters: please visit the detailed GRI Index online for information regarding indicators 3.1–3.10.		
Governance, Commitments, and Engagement: please see pages 6–9 and GRI Index online for further information regarding indicators 4.1–4.14.		

Economic Performance Indicators		
MA	Management approach	Report 2012: p. 10–11, Update 2013: p. 5
EC 1	Economic value directly generated	Report 2012: p. 20, Update 2013: p. 10
EC 4, 5, 7, 8	Financial assistance from government, wage ratios, local hiring, infrastructure investments	Please visit our GRI Index online. <sup>6</sup>
Environmental Performance Indicators		
MA	Management approach	Report 2012: p. 14–15, Update 2013: p. 7
EN 3, 4, 8, 16, 22, 23, 24	Direct and indirect energy consumption, water withdrawal, greenhouse gas emissions, weight of waste, significant spills, waste	Report 2012: p. 20, Update 2013: p. 10
EN 18, 26	Initiatives to reduce GHG emissions, initiatives to mitigate environmental impacts	Report 2012: p. 14–15, Update 2013: p. 7
EN 20	NO <sub>x</sub> , SO <sub>x</sub> and other air emissions	Please visit our GRI Index online. <sup>6</sup>
EN 28	Fines and sanctions	Please visit our GRI Index online. <sup>6</sup>
Social Performance Indicators		
Working Conditions		
MA	Management approach	Report 2012: p. 16–17, Update 2013: p. 8
LA 1	Workforce by employment type	Report 2012: p. 20, Update 2013: p. 10
LA 5	Minimum notice period(s)	Please visit our GRI Index online. <sup>6</sup>
LA 7, 8	Rates of injury, number of work-related fatalities, programs on health and safety	Report 2012: p. 17, 20, Update 2013: p. 10 and GRI Index online <sup>6</sup>
LA 13, 14	Employees according to indicators of diversity, relationship between men's and women's salaries	Report 2012: p. 20, Update 2013: p. 10 and GRI Index online <sup>6</sup>
Human Rights		
MA	Management approach	Report 2012: p. 10–11, Update 2013: p. 6
HR 3, 4, 6, 7	Training on human rights, incidents of discrimination, child labor, forced labor	Please visit our GRI Index online. <sup>6</sup>

<sup>6</sup> www.hcstarck.com/GRI\_index

<b>Society</b>		
MA	Management approach	Report 2012: p. 10–11, 18–19, Update 2013: p. 5, 8
SO 1	Programs to assess impacts on communities	Each of our sites is engaged in social projects. See Report 2012: p. 18–19, Update 2013: p. 8
SO 2, 5	Anti-corruption, public policy positions and lobbying	Please visit our GRI Index online. <sup>6</sup>
SO 7, 8	Anti-competitive behavior, anti-trust, monopoly practices, non-compliance	No incidents registered during reporting period.
<b>Product Responsibility</b>		
MA	Management approach	Report 2012: p. 12–13, Update 2013: p. 5
PR 1	Assessment of health and safety impacts	Please visit our GRI Index online. <sup>6</sup>
PR 3	Product and service information	Material Safety Data Sheets: <a href="http://www.hcstarck.com/en/products/products_a-z.html">www.hcstarck.com/en/products/products_a-z.html</a>
PR 5, 6, 8	Customer satisfaction, marketing standards, customer privacy	Please visit our GRI Index online. <sup>6</sup>

6 [www.hcstarck.com/GRI\\_index](http://www.hcstarck.com/GRI_index)

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### **Concept, Text, and Production**

Scholz & Friends Reputation