Sustainability report 2014

outokumpu

working towards a world that lasts forever

Contents

This **Sustainability report** includes reporting of our economic, environmental and social responsibility. Please check our **Annual report 2014** for Financial statements and Corporate governance statement.

Cover image: Pellet of recycled steel.

CEO's foreword

In 2014, we made progress on many fronts to strengthen our financial position and performance. This gave us an opportunity to reinforce our customer focus: we signed some groundbreaking deals, revamped our organization and worked across the company to further improve our delivery performance and quality.

Customers are also at the heart of our sustainability approach. We create materials that are long lasting, durable and fully recyclable. In other words, sustainable materials that help realize our vision of a world that lasts forever. We strive to be the best experts in the industry so that we can help our customers find the best and most sustainable material for their application. In 2014, we further developed the sustainability knowledge of our sales teams and technical support through training.

Earning and keeping a reputation as an expert requires credibility, so we continuously challenge ourselves to improve our sustainability performance in our own operations. In 2014, we achieved many of our ambitious targets: we met our target to further increase the use of recycled content in our products and reduce climate impact. We also made progress in environmental management, where an important milestone was reached with the ISO 14 001 certification for Outokumpu Nirosta in Germany which is at the heart of our operations in Europe. With this achievement, almost 90% of all our facilities and mills have been certified. Our efforts gained us inclusion in the Climate Disclosure Leadership Index again, as well as a rating as one of the leaders in RobecoSam Sustainability yearbook 2015.

We were particularly proud that our commitment to the health and safety of our employees was recognized. The International Stainless Steel Forum award in the field of Health and Safety recognized the groundbreaking work by Dr. Markku Huvinen, our company doctor who has tirelessly researched for the past three decades the health impacts of stainless steel production.

Safety remained at the top of our agenda in 2014 as well: we launched a number of engagement efforts to further increase the awareness and safety orientation. The statistics continued to show how our relentless focus on safety is pushing us forward: our lost time injuries per million working hours decreased from 4.5 to 2.7.

To reinforce the importance of responsible business practices we renewed our Code of Conduct, and launched a comprehensive training program to reinforce the importance of responsible business practices as well as compliance law training for all key audiences. We also conducted a company-wide employee survey to encourage dialog and feedback in the company, and seek further areas where we can improve leadership, employee engagement and communication.

Since the acquisition of Outokumpu and Inoxum two years ago, we have been going through a massive transformation. The changes that have been necessary to reverse the trend of continuous losses have been fundamental, and many of them very painful. In 2014 we reached an agreement with the labor unions in Germany regarding the closure of Bochum melt shop, and made the decision to close our Kloster mill in Sweden. The commitment and perseverance of our employees across the company under these turbulent times speaks for their professionalism, and is a source of pride for our company.

Mika Seitovirta
CEO

Highlights 2014

Our year was a clear demonstration of the power of joint efforts. Outokumpu truly made progress towards one company with a common culture. Our results in the field of sustainability show what can be achieved by dedicated work towards common goals.

1. Improved performance

During 2014, our stainless steel recycled content rose above 85%. Emission efficiency was improved 3.5% against the baseline and our overall carbon profile was reduced in line with our long-term target – 20% by 2020. Outokumpu continued quarterly to follow Sustainability Key Performance Indicators (KPIs) to secure the continual improvement and more frequent systematic monitoring of the progress. The KPIs are recycled content, energy efficiency and carbon efficiency. In addition, the KPIs also indicate financial savings against a target baseline, making the economic benefits of sustainability more concrete. All this comes down to the fact that – again after year 2014 – we can offer stainless steel products to our customers with even lower environmental impact and energy demands.

2. Sustainability trainings for sales

At Outokumpu we wish to put the customer at the center of everything we do – including sustainability work. The great sustainability prospects of our products are only realized through our customers' solutions. The unique value proposition that we can offer in the field of sustainability needs to be efficiently communicated to customers. During 2014, the Sustainability Training project for Sales was started. This exercise included training of our technical support professionals and sales teams, enabling them to better reveal the sustainability benefits of our material. Customers face growing demands for sustainability facts and supporting documents such as: Life cycle analysis data, product declarations, green building rating factsheets and, carbon footprint data. Therefore, our customer interface has to be fully informed and capable to serve also on demanding sustainability requirements.

3. Code of Conduct and compliance training

Outokumpu is strongly committed to responsible business practices. Outokumpu's Code of Conduct, which sets the Group's ethical standard and guidelines for a common way of working, was revised and updated in 2014. The revised Code of Conduct is available in all nine major languages of the Group. It was implemented with a strong involvement and message from the top management and through a wide internal communication campaign and e-learning training. As part of the training, Outokumpu launched an e-learning in its Code of Conduct, compulsory for all white collar employees. The first stage in 2014 covered some 3,000 people out of which 99% completed the training. Other compliance training carried out during 2014 included e-learning in competition law compliance for the relevant personnel in the Group. The training has been successfully completed by some 1,400 employees in 2014.

> We signed some groundbreaking deals, revamped our organization and worked across the company to further improve our delivery performance and quality.
>
> **Mika Seitovirta, CEO**

4. Building Outokumpu Spirit and listening feedback through O'people survey

Outokumpu spirit workshops aiming to pave the way for new Outokumpu culture were carried out in the units throughout the year. Cornerstones of the spirit are four Winning Behaviors, our common understanding on what will bring us to success. Winning Behaviors are putting the customer first, turning volumes into profit, acting with speed and working together. Outokumpu Spirit workshops rolled out in all major locations and some 2,000 Outokumpu employees took part. For example in Mexico, each employee was invited to participate and some 90% of the workforce took part in workshops. Each employee made a promise at the end of the workshop on what they can immediately do to improve their work.

At the end of the year, we also completed the first global employee engagement survey (O'People) in the new Outokumpu after the Inoxum integration. The results will show and determine the critical development areas for the next years.

5. Environmental management systems

Sustainability is one of our company's fundamental principles, we want to minimize the environmental risks and impact of our production processes. Outokumpu has a firm policy that all production units have environmental management systems. The objective is also that the Environmental Management Systems are certified according to ISO 14 001. This is a new requirement for former Inoxum units. Outokumpu Nirosta started work for certification right after the integration. As a result of fast determined work, the Outokumpu Nirosta business line received certification for its environmental management system according to EN ISO 14 001 during summer of 2014.

EN ISO 14 001
certification for Outokumpu Nirosta business line for the Environmental Management System

6. Sustainability awards and recognition

During the year 2014, Outokumpu received many prestigious awards. First in May Outokumpu received International Stainless Steel Forum (ISSF) Sustainability award; for the groundbreaking tireless work in the health and safety, based on the past three decades' long research of the health impacts of stainless steel production. During November International Chromium Development Association (ICDA) awarded Outokumpu's Tornio operations in Finland on long-term successful work in waste water treatment and protection of the sea environment. During 2014 Outokumpu was rated by the RobecoSam as one of the top-scoring companies in our industry, Outokumpu qualified for inclusion in the 2014 Sustainability Yearbook and received the Silver Class distinction for its excellent sustainability performance.

A world that lasts forever

MEGATRENDS DRIVING THE DEMAND FOR STAINLESS STEEL

POPULATION GROWTH AND URBANIZATION, INCREASING MOBILITY, CLIMATE CHANGE, SCARCITY OF RESOURCES AND ENERGY.

85%
RECYCLED CONTENT

RAW MATERIALS

- Ferrochrome (Kemi mine)
- Nickel
- Molybdenum
- Other alloys such as titanium

Melting of stainless steel

Continuous casting

Hot rolling

Cold rolling

OUR AIM IS TO MAKE STEEL WITH
ZERO WASTE

Outokumpu recycling processes

Our top priority is a safe and healthy workplace

SUSTAINABLE PROCESSES

Sustainability is key to Outokumpu's long-term prosperity and growth. We develop our operations every day, step by step. This takes us closer to our target – a sustainable society.

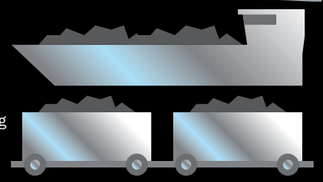
Landfill wastes reduced by 80%

Over 100,000 tonnes of metals recovered from waste and utilized as raw material

RECYCLED STEEL USE ANNUALLY OVER
2,000,000 TONNES

SUSTAINABLE SUPPLY CHAIN

Responsible sourcing according to ethical principles and strict best practise policies.

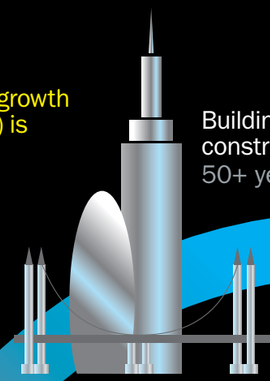


Our aim is to maximize recycling

Recycling and delivery

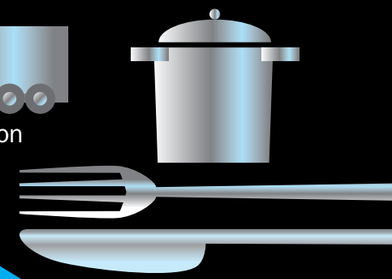
STAINLESS STEEL IS
100%
RECYCLABLE

The global growth rate (CAGR) is
5%



Building and construction (ABC)
50+ years

Transportation
~23 years



Food and drink, kitchenware
~23 years

Up to 50 years

Even over 1,000 years

corrosion-resistant | high-strength | hygienic | aesthetically pleasing

SUSTAINABLE STAINLESS STEEL

Outokumpu's stainless steel enables efficient solutions benefiting both customer and society as a whole. Stainless steels superior life cycle properties give customer advance in sustainability.
Steel is the most recycled material in the world.

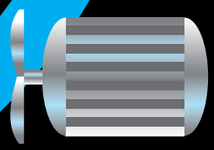
maintenance-free | durable | fully recyclable

Up to 20 years

Packaging and delivery

Customer

End use of stainless steel



Metal industry and machinery
~18 years

6:1
EFFICIENT LIFE CYCLE AVOIDS 6 x EMISSIONS USED TO MAKE IT

CUSTOMER BENEFITS

- Clean tech material
- Low environmental footprint
- Uniquely sustainable production
- Life Cycle Inventory (LCI) available for all main products

White goods and other appliances
~13 years

> The average recycled content for all stainless steel produced by the Group in 2014 was over 85%.

StalaWind turbine towers for onshore applications from company Stalatube

Sustainable Stainless

As a material, stainless steel is strong, corrosion-resistant, durable and hygienic: in many ways, it is the perfect answer to global challenges such as resource scarcity, urbanization, and global climate and water challenges.

Stainless steel offers properties for superior life cycle

Global megatrends such as addressing humanity's growing demand for clean energy and pure water put higher expectations on material properties. Search for more efficient solutions is constant ongoing trend in all of our customer segments. Stainless steel is often the optimal choice, for example in applications such as solar power, biofuels and wind power. These require sustainably sourced materials that enable low life cycle costs.

We build the future from the past

Steel is the world's most recycled material. Estimates indicate that the current end-of-life recycling rate for stainless steel is some 82%. In global terms, approximately 50% of the raw material used in making new stainless steel is recycled steel. In Outokumpu's manufacturing operations, the average recycled content for all stainless steel products produced by the Group in 2014 was over 85%.

The most important raw materials used by Outokumpu in producing stainless steel are recycled stainless and carbon steels. Together with metals recovered from waste products and by-products of the production process, they enable the recycled content of stainless steel produced by the Group to be raised significantly higher than the global industry average of 50%. In addition to recycled steel, alloying elements, including iron-containing alloys and other metals such as chromium, nickel and molybdenum, are also required.

Stainless steel is fully recyclable and suffers no degradation during reprocessing. Its constituents (including iron, nickel and chromium) can therefore be reused indefinitely in producing new stainless steel. These excellent recycling characteristics mean that stainless steel is well positioned to meet the demands of a future sustainable society. Outokumpu recognizes that recycling and the life cycle approach are important elements in achieving sustainable operations.

Product perspective

Outokumpu stainless steel is used in a wide range of different products, from industrial machinery and tanks to kitchen utensils and mobile phones. Both service life and other expectations on the products show large variations over this large span of end-applications. However, there are some characteristics of Outokumpu stainless steel that benefit humankind and the environment regardless of where in society the material ends up.

Stainless steel is practically inert when the appropriate steel is chosen, which means that only extremely low levels of metal ions are released from exposed stainless products, resulting in no harmful impact on the environment. In addition to its corrosion resistance, stainless steel also has good mechanical properties, and these can be exploited by manufacturing lighter components and products without compromising safety requirements.

The safe choice in food processing

The fact that no emissions arise from stainless steel when in use is one of the success factors for its use in the food processing industry, where stainless steel has proven that it is an ideal material as it is easy to clean and hygienic. The requirements on food contact materials keep getting tougher to ensure that our food does not get contaminated. There are, for example, new conservative limit values proposed in the Council of Europe's new guidelines from 2013. The stainless steel industry has examined how different stainless steels meet these new guidelines by testing different steels, including some supplied by Outokumpu. The results have confirmed the suitability of stainless steel as a material in contact with food.

Safe use of Outokumpu stainless steel

Stainless steel in its manufactured forms – as delivered to Outokumpu customers – is inert and non-toxic. On the other hand, industrial processes involving the material, such as welding or pickling, can release substances or fumes that could be hazardous if inhaled for substantial periods of time. The Safety Information Sheets published by Outokumpu help customers handle our stainless steel products in a safe manner.

Since stainless steel is inert and non-reactive when employed correctly, the potential impact on people's health and safety is extremely limited. This is one of the reasons why stainless steel is so widely used in medical appliances and in manufacturing the equipment and tools employed in the food processing industry.

The stainless steel circle

Stainless steel fits perfectly into a circular economy. It is fully recyclable and suffers no degradation during reprocessing, which means it can be recycled again and again without becoming inferior in quality. Its constituents (including iron, nickel and chromium) can therefore be reused indefinitely in producing new stainless steel.

Steel is already the world's most recycled material. Estimates indicate that the end-of-life recycling rate for stainless steel is some 82%, meaning that four out of any five stainless objects are collected and made into new steel. However, since the demand for stainless steel has been growing over the decades, and the service life of stainless steel products can be quite long, there is not enough secondary stainless steel on the market to satisfy the demand. Thus Outokumpu recycles both stainless and carbon steels in our processes. In addition to recycled steel, alloying elements, including iron-containing alloys and other metals such as chromium, nickel and molybdenum, are also required.

In global terms, approximately 50% of the raw material used in making new stainless steel is recycled steel. In Outokumpu's manufacturing operations, the average recycled content for all stainless steel products produced by the Group in 2014 was over 85%.

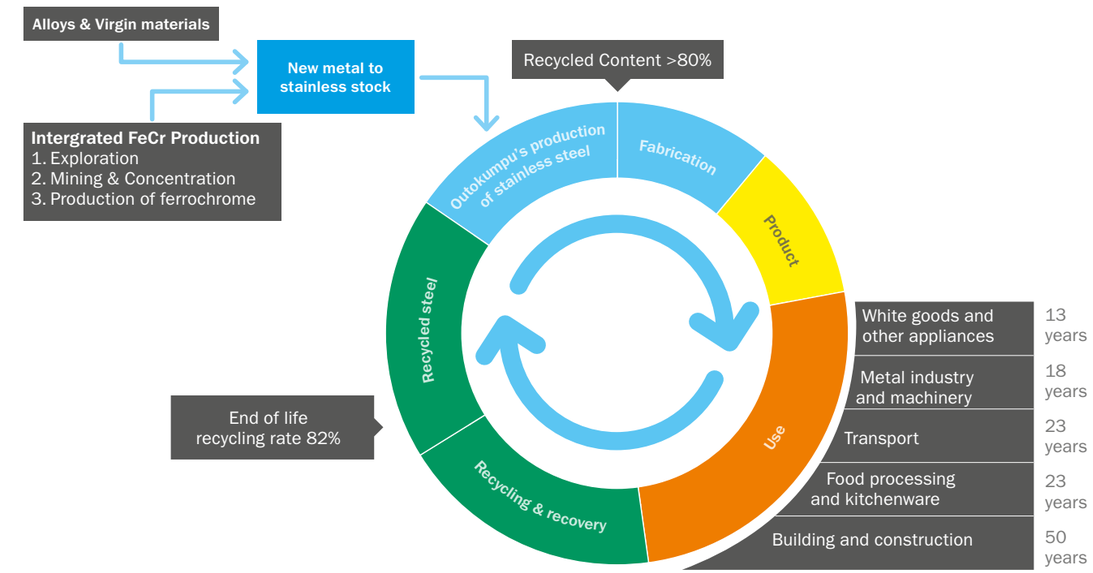
Recycling and durability saves resources

It goes without saying that the possibility to recycle a product saves resources by not having to extract new minerals and ores from the ground. However, also durability is important. Manufacturing something only once instead of twice or even three times due to break-down and repair during a certain time period is of course less resource consuming. Examples of applications where stainless steel can help to prolong the life-time of an application are for example when using stainless steel in bridges susceptible to corrosion, or components like exhaust pipe systems in automobiles.

Low life cycle costs for stainless steel

The durability of stainless steel has a positive impact also on the economics in a life cycle perspective. The fact that only minimal maintenance is required is good for both the environment and the society. The combination of corrosion resistance and durability increases product life-time. A case study on life cycle costs for a bridge over a period of 60 years showed that substantial savings can be achieved by using stainless steel instead of carbon steel beam elements. These cost savings can be in the range of 30 to 40%, and arise from less repair and maintenance costs.

Life cycle of steel products



Product and application development

The direction of Outokumpu's product development is given by global trends like economic and population growth, mobility, urbanization, climate change and limited resources. We work closely together with our customers in order to align our product development with customers' current and future needs. The development of long-lasting, sustainable material solutions providing advantages over the whole product life cycle is the key focus. The product development involves development of new steel grades, new surface finishes and improvement of existing steel grades.

Outokumpu has recently launched several new steel grades, including ferritic 21% Cr stainless steel 4622, austenitic 4420 and formable duplex stainless steels FDX 25™ and FDX 27™. All these grades provide life cycle efficient alternatives for conventional nickel-containing austenitic steel grades. During 2014, commercialization activities related to these new products were continued. These activities include, for instance, testing of the new materials in customers' applications and ramping up and fine tuning of the production processes.

Outokumpu's R&D teams work closely together with our customers and sales organization. Our R&D experts provide our customers with technical support and advice related to material selection, fabrication and material performance in customers' applications. Furthermore, our R&D teams have a strong business development focus. We actively search and develop new application areas and markets for Outokumpu's products together with our customers and potential new users of stainless steel. In the following, two examples of our recent activities are given.

Stainless steel is an important enabler in clean technologies.

Stainless steel is an important enabler in clean technologies. Starting from 2015, new and stricter regulations will come into effect for so-called ECAs (Emissions Control Areas) limiting the amount of sulphur in exhaust gases. To comply with these new regulations, ship-owners are left with three alternatives: change to low sulphur fuel, change to LNG fuel, or to install exhaust gas cleaning system (scrubber). The harsh environment inside the scrubber calls for highly corrosion-resistant materials where Outokumpu high performance steels, such as 254SMO™, is an excellent selection. We collaborate with our customers, provide advice on material selection and carry out customer specific laboratory tests for simulating scrubber conditions and material behavior.

Another example is the tank calculation tool we have developed and are continuously improving. The tool is utilized to demonstrate the benefits of using our duplex stainless steels in storage tanks. The use of duplex steels instead of coated carbon steel can offer the customer a more cost efficient solution. By using the calculation tool, we can together with the customer go through their case and show them the advantages of using duplex grades, not only in terms of the whole life cycle cost, but also already in the initial stages when the storage tank is built. Furthermore, by using duplex stainless steel there is no need for maintenance of the storage tank and no need to use environmentally dangerous paint or coatings.

Outokumpu's material combined with know how leads to sustainable innovation and public recognition

PVI Industries LLC, an American water heaters manufacturer has chosen Outokumpu's proprietary lean duplex grade LDX 2101® to replace carbon steel in its water heaters. Using lean duplex has significantly reduced PVI Industries' waste stream and increased the useful life of its water heaters.

Outokumpus' stainless steel has enabled PVI to reduce nearly 600,000 kg of waste a year, because stainless steel does not require any coating or plating. Previously, PVI was using electroless nickel plating to reduce corrosion in the carbon steel water heater tanks. The process generated significant waste stream which is now completely avoided.

Clear savings are achieved since no maintenance is required.

In 2009, PVI Industries built a water heater prototype, test Unit #1, using Outokumpu LDX 2101®. The prototype went through an accelerated life testing equivalent of 30 years of normal life use at highly elevated temperatures of about nearly 90 degrees Celsius (190°F). Five years after development, the prototype is still operational. The useful life expectancy of carbon steel water heater tanks was five to fifteen years, depending on application. PVI now warranties standard duplex water heater tanks for up to 25 years. The additional cost of the stainless steel is offset by the savings from no longer coating and plating the carbon steel material.

Sustainability achieved

Moving to duplex stainless steel also reduced PVI's waste stream to nearly zero. The efforts were recognized on May 7, 2014 by the State of Texas at the 2014 Environmental Excellence Awards where PVI received the honor for Pollution Prevention.

"We are thrilled to be recognized in the largest industrial state in America as the number one green company in this area, and it is a sustainable footprint we expect to carry forward for years to come. Our experience started with a desire to have a more sustainable production operation. But this quickly expanded to a broader mission. There is a huge movement in the marketplace for materials that follow a longer life principle. And this parallels with PVI's belief. In Outokumpu, I know we have a business partner who shares that core value," Chris Bollas reports.

"

PVI to reduce nearly 600,000 kg of waste a year

“

The life cycle of stainless steel products is very long and the recycling rate among the highest.

Our impact on the environment

Stainless steel is 100% recyclable, hygienic and corrosion resistant and the environmental impacts resulting from its use are almost non-existent. On the other hand, its production – both the manufacturing and reprocessing stages – does have an impact on the environment.

The most substantial environmental impacts which result from the stainless steel production process include emissions of dust and particles into the air, discharges of water from production plants, and the high levels of direct and indirect energy consumption during production. Landfill waste is also created during the production process.

The life cycle of stainless steel products is very long and the recycling rate among the highest. Therefore, the environmental impacts have to be analyzed always per life span, not only related to the production phase. The use of steel in the modern society minimizes emissions by creating efficiency in for example transport, construction, industries and energy production. Due to these facts, steel products are solutions in climate combat and the protection of the environment.

Environmental data and reporting for 2014 covers Outokumpu’s stainless steel, ferrochrome and mining operations in the continuing operations.

Unless otherwise stated, the environmental data for 2013 and 2012 has been restated to reflect Outokumpu’s continuing operations at the end of the reporting period.

Environmental goals and results

Goals and target-setting are part of our continual improvement ideology and are included in environmental and energy management systems. Outokumpu sets Group-wide and site-level environmental targets. Group-wide targets are common targets that affect most Outokumpu sites. Targets at production sites are more specific.

Annual routines at all Outokumpu production locations include the setting, monitoring and reporting of independent environmental targets. These processes are built into the Group's environmental management systems and key targets are also set at Group level. Having concrete, measurable targets for our operations is a way of focusing attention on specific environmental and energy aspects throughout Outokumpu.

Outokumpu is committed to the long-term target of reducing the Group's carbon emissions profile (indirect and direct emissions) by 20% per tonne produced by 2020. The setting of this challenging target is a clear demonstration of Outokumpu's desire to improve the Group's energy efficiency, to contribute to reducing global emissions of carbon dioxide, and to participate in the transformation towards a low-carbon society.

All environmental target setting and associated long-term goals cover all Outokumpu units globally. The baseline for long-term targets was kept the same: the 2007–2009 period. Progress and reported 2014 results include all current production units and programs.

Group-wide results 2014

Based on the outcome of Group-wide targets for 2014, environmental work once again yielded great results. Below you can find the results on the targets and short comments:

- No significant environmental incidents: The target was achieved; there were no significant environmental incidents involving Outokumpu operations during 2014. This demonstrates the excellent standards maintained in our operations.
- Climate change: Reduction of emissions was in line with Outokumpu's long-term target of achieving a 20% reduction in direct and indirect CO_2 emissions by 2020, against the program baseline 2007–2009. The Group's total carbon profile per tonne of steel produced was reduced by some 9% compared to baseline figures. The main contributors to this achievement were higher capacity utilization rates at processes, improved energy efficiency and lower specific emissions.
- Energy efficiency: The target of achieving a further improvement of 1%, from the 10% achieved in 2013 to a very ambitious 11% in energy consumption per tonne of stainless steel processed (with 2007–2009 as the base period) was not achieved. Energy efficiency improvement was affected by changes in the production and some production interruptions. Total cumulative improvement achieved during Group's low carbon program in energy efficiency against the program baseline was 9% after 2014. Savings equaled some 751 GWh annually in terms of energy.
- Materials efficiency: Further reduction in the amount of waste landfilled per produced tonne of stainless steel produced. Material efficiency was improved against the baseline, and we especially succeeded in utilization of steel making slag.

Site-specific results 2014

- Kemi mine: Reuse over 250,000 tonnes of lumpy rock and barren rock from the Kemi concentrating plant to the underground mine. This target was not achieved, since Kemi mine underground mining practices were changed during the year and instead of these above ground materials, other barren rock from underground was used directly.
- Avesta: Increase energy efficiency by 2% per processed tonne. This target was achieved, resulting in an increase in energy efficiency of 3.5% per tonne.
- Sheffield melt shop: Increase material efficiency by reducing waste landfilled 2% per produced tonne. This target was achieved – amount of waste to landfill was decreased from 45 kg/t to 44 kg/t.
- San Luis Potosí: Reduce fresh water consumption to 1.50 m^3/tonne processed and reduce waste to landfill below 74 kg/tonne processed. These targets were also achieved. Fresh water consumption was reduced to 1.17 m^3/t and waste to landfill to 69.4 kg/t.
- Calvert: Develop solution for on-site melt shop dusts recovery process. This target is ongoing, there are several solutions developed. These are being analyzed, final decision on the implementation has not yet been done.

Group-wide goals for 2015

- No significant environmental incidents.
- Climate change: Reduction of emissions in line with Outokumpu's long-term target of achieving a 20% reduction in direct and indirect CO_2 emissions by 2020, against the program baseline 2007–2009.
  - Annual progress of this target is followed as an internal quarterly KPI; the target for 2015 is split into separate energy efficiency and CO_2 emission target.
  - Energy efficiency: A further reduction of 1% in energy consumption per tonne of stainless steel processed, cumulating to 10% with 2007–2009 as the base period.
  - Direct CO_2 emissions from production operations reduced by 1% per tonne of stainless steel processed, cumulating to 4.5% with 2007–2009 as the baseline period.
- Recycling:
  - Further 1% increase in the use of recycled metal through higher input of recycled materials per tonne of stainless steel. Target aiming 89% (= 890 kg recycled input per 1 tonne of crude steel produced). The Group's mid term ambition is to achieve a level of over 90% (900 kg of recycled metals per tonne of crude steel produced) by 2018.
- Materials efficiency: Further reduction in the amount of waste landfilled per tonne produced.

Site-specific goals for 2015

- Outokumpu UK units:
  - Increase energy efficiency from 2.05 to 2.028 MWh/t per liquid steel.
  - Decrease waste to landfill from 36.5 kg/t to 32 kg/t.
- Avesta, Sweden:
  - Reduction of direct process-related CO_2-emissions by 4% per tonne.
- Tornio, Finland:
  - Energy efficiency: Reuse rate of carbon monoxide gas from ferrochrome production > 95%.
  - Emission control and decreasing: Improvement of gas cleaning treatment equipment at ferrochrome sintering plant according to the detailed program.
  - Increase of environmental awareness: New environmental safety training for own employees.
- SKS, China:
  - A new target: Maintain the plant site and landscaping in excellent condition.

Efficient management systems save environment, costs and time

Outokumpu's firm objective is to minimize the environmental burden of the Group's operations as much as is economically and technically feasible. The basis of this work is the Environment, Health, Safety and Quality (EHSQ) Policy. This policy was renewed in March 2014 by the CEO according to feedback from internal units and customers.

Outokumpu has coordinated internal Environment, Health and Safety, Quality and Energy Efficiency (EHSQ&En) management systems since 2009. These systems, policy, instructions, targets and audit findings are systematically reviewed. The aim is to simplify and integrate all these systems and instructions when and where possible.

The EHSQ&En Group perspective is aligned with the Group's management process and annual planning. Outokumpu's aim is also to harmonize and integrate internal management systems as much as is possible and reasonable. For example, Coil EMEA operations in Finland and in the Netherlands operate under integrated environmental and quality certifications, and environment and energy efficiency management systems are integrated in Outokumpu Nirosta covering the production sites in Germany.

Operational efficiency of Outokumpu's systems and certification is monitored using both internal and external audits and ensured by co-operating with certification bodies. The number of non-conformities and corrective actions in EHSQ&En systems found by external auditors in our units are regularly monitored. In 2014, these non-conformities were typically minor and corrective actions were made as soon as possible. The Group also provides the relevant authorities with reports on Outokumpu's operations in all the countries in which we operate.

All Outokumpu's production sites have employed risk-based management systems, which help in avoiding spills and accidents that could be harmful to humans or to the environment. All these systems operate in accordance with the Group EHSQ policy. All our production units and service centers have certified ISO 9001 quality management system and almost all production sites have certified their Environmental Management Systems (EMS) according to ISO 14 001. Typically, energy efficiency is integrated into the environmental management system, although many of the Group's sites also have ISO 50 001 certification standards for energy efficiency.

In 2013, the Group decided that all our production chains should be covered by the ISO 14 001 certification system by the end of 2015. This meant that the work started towards certification in our German and Mexico units and in Calvert, which were still uncertified.

In 2014, the main progress in this area took place in the EMEA Coil Service Centers and in Nirosta units in Germany. The Nirosta environmental management system achieved certification in June according to ISO 14 001 and Group's principles. The Calvert site in Alabama, USA and the Mexinox cold rolling plant in San Luis Potosí, Mexico have started projects to certify their environmental management systems similarly. The Outokumpu Leadership Team also agreed that all major plants and production units should certify their existing Health and Safety systems by the end of 2016.

In EMEA Coil Service Centers, a common and integrated management system set-up was established during the year. With the new integrated system successfully in place, the Coil EMEA Service Center network now has a common way of working and joint KPIs.

After the acquisition of Inoxum Outokumpu had Service Centers from several separate companies including different business models and ways of working. Now the new integrated multisite system and registration saves both money and efforts. All management systems (Health and Safety, Quality and Environment) are audited simultaneously.

After necessary preparation an integrated multisite registration was successfully realized during the fall, and official certificates were issued in November. The multisite registration covers the EMEA Coil Service Centers in France, Hungary, Italy, Poland, Sweden and UK as well as in Krefeld as the central function. The work continues in 2015 with the integration of the two remaining Coil Service Centers in Germany.

At the Group level, Outokumpu also has a long tradition of internally steering environmental performance: the first Group-wide internal Environmental Committee was established in 1969. The activity now continues with the name of Outokumpu Environmental Network, which meets regularly each quarter to manage and steer environmental operations and share best practices. It also has clear responsibilities and mandates according to the internal EHSQ&En manual (covering Environment, Health and Safety, Quality and Energy efficiency management and requirements). In environmental matters, a similar network was established to coordinate European CO_2 Emission Trading. The Group perspective is aligned with the Group's management process and annual planning. All Outokumpu units report today their activities in common Outokumpu's internal Energy & Environmental system (EER).

Information on life cycles and footprints demands reliable data

Stainless steel's very low environmental impact during its use, its durability and minimal maintenance requirements are widely recognized. In addition, at the end of their life cycle, stainless steel products are also fully recyclable. Outokumpu's aim is to improve levels of sustainability at each phase of a stainless steel product's life cycle, from production through to reuse, and to secure a sustainable supply chain all the way from suppliers of recycled steel to the production of stainless steel products.

Many applications that employ stainless steel already have a beneficial impact by reducing the total environmental burden exerted by human society. On a global scale, current trends towards achieving sustainability and reducing the extent of climate change are strong.

Environmental management has to be able to answer both these challenges and needs for sustainable products and solutions. During 2014, Outokumpu focused increased attention on life cycle oriented environmental management. The importance of life cycle data, both for internal use in highlighting areas where improvements are required and for external purposes in communications with customers and other stakeholders, has already been recognized.

As a sector leader, Outokumpu continued to update life cycle inventory data in its own Environmental Product Declarations (EPD) for Outokumpu's main stainless steel products. These are public documents which describe the main environmental effects and energy needs of the Group's stainless steel grades throughout their supply chain. In 2014, the Environmental Product Declaration (EPD) for hot rolled and cold rolled stainless steel were updated in order to include the Outokumpu Nirosta production.

The availability of robust and verified data is the starting point for managing sustainability throughout a product's life cycle. Outokumpu's environmental and energy reporting, data management and analysis are supported by an Energy & Environment Reporting (EER) system which provides internal reporting and analysis tools for all the Group's production sites.

Regulative environment, policy and legislation development affects competitiveness

Emerging environmental, energy and other legislation is reviewed in accordance with the Group risk management policy and integrated together with other risks. Outokumpu has identified changes in the legislation as one of the most significant issues in the materiality analysis. These changes are in the form of emerging and planned legislation stemming from current policies. Whether policy related changes are local, national, regional or global, the changes are always potential risks. Policy and authority involvement in the business environment always has a direct impact since our operations are always conducted according to laws and regulations. Our way of identifying and mitigating these policy risks is similar to risk management in general and these are integrated into the Group-wide risk management process.

According to Outokumpu's risk management instructions; we assess regularly our risks related to different external developments outside our company. One relevant area is so called political risks coming from new legislative initiatives and regulations. These might be global / international like UN processes (for example the climate targets and negotiations in the coming COP process in 2015), regional like the EU-wide emission trading legislation, based on different other organizations' decisions with very local effects for example on the Baltic Sea (like International Maritime Organisation, IMO) or national (like extra border tax for steel products or industry tax policy).

All these identified areas are followed up by a certain Group function or country based Outokumpu organization and managed according to internal instructions. For example, in the environmental area the new political initiatives and legislation are dealt with in internal Outokumpu Environmental Network quarterly. The information flow in these issues comes mainly through industrial associations or through our local units which are obligated to report the relevant and possible risks coming from changing legislation. In practice, our company co-operates significantly in these matters with industrial organizations (see chapter Associations and federations).

The main new or upcoming items of legislation which have been identified as possible business risks are mainly coming from the area of energy and climate, environmental, chemical or tax policies. During last year, these included for example renewed EU Climate and Energy package 2030 and EU Emissions Trading rules and similar initiatives in the US and China and some unexpected changes in national energy or other tax regulation.

From our perspective, energy and climate policies are widespread and different on each continent. The global climate negotiations in Lima, Peru in December 2014 did not reach any new common view or decisions. For our company this means that we have to constantly assess and predict the changes in materials and energy prices in our production regions and countries.

Emerging legislation

In Europe, the EU Commission came forward with comprehensive "Energy and climate framework 2030" in early 2014. This policy instrument has significant direct and indirect effects on the Group's operations. The framework has direct impact through binding EU level emission targets. These targets have – in addition to direct effects – more significant indirect effects through energy and material input prices. The framework also affects competitive advantages both within the EU and in relation to third countries. The European Council has concluded on the framework during their October summit. There are nevertheless a lot of uncertainty and unpredictable issues which depend on the implementation in the form of related directives and decisions.

The EU has many other partially overlapping energy policies in place and emerging with huge impact on EU energy markets as a whole and on steel industry competitiveness. These policies have an effect on the business environment and from Outokumpu's point of view the most important identified policies were: the EU Emissions Trading Directive, State Aid Guidelines for ETS compensation, Energy Taxation Directive, Energy Efficiency Directive, Renewable Energy Sources targets and long term EU 2030/2050 climate and energy targets and 2050 Energy Roadmap.

As an energy intensive industry, Outokumpu faces difficulties from time to time from national and rapid changes in energy policy. The latest of this kind of changes took place in Germany due to the new extra fees in electricity prices for renewable energy sources. This was costly for all electricity intensive industries and caused uncertainty for the future and investments. Similar unexpected changes took place in Finland during last year related to energy taxation in the mining industry. These types of changes are difficult to see and expect beforehand and it makes the future and investment planning difficult.

In Germany the so called EEG tax for renewable energy created also significant cost implications to Outokumpu's energy intensive processes. This additional tax was levied for all electricity intensive enterprises during 2013. However, late in the 2013 it was decided to grant significant tax refund which Outokumpu received during 2014. After a long period of negotiations between industry and the governmentit is now likely that EEG costs will be reduced to some EUR 2 million in coming years for Outokumpu operations in Germany.

Many challenges in environmental initiatives and legislation were followed. In chemical and environmental area similar or new challenges in 2014 were for example:

- European legislation related to chemicals (REACH) and product safety (CLP) including the REACH authorization processes;
- Implementation of the Industrial Emissions Directive in the European Union together with binding Best Available Techniques (BAT) requirements;
- the EU's initiatives on air quality policy and national emissions ceilings (the EU Air Policy Review Package);
- the International Maritime Organization's decision on the sulphur content of marine fuels and the EU Sulphur Directive, effective as of 2015, some water and air quality targets in our main production countries;
- EU resource efficiency initiatives which may have impacts on legislation and many other areas.

In Finland a new Environmental Protection Act entered into force in September. It has been reviewed in Kemi-Tornio units to be sure that we are working according to new legislation.

For our type of industry some non-fact based or non-comprehensive definitions in legislation are causing unexpected impacts. For instance the EU listing of nickel as "a suspect potential carcinogen" automatically leads to similar classification of austenitic stainless steel, as it fails to recognize that stainless steel is a material with its own inherent properties, which are not the same as those of the raw material constituents. This non-scientific classification as a criterion to exclude substances from use is included in the EU Ecolabel Regulation and in some other initiatives. A derogation in EU Ecolabel is possible and already approved for certain product groups (mobile phones, laptops/computers) but needs intensive communication. However, this is causing unnecessary doubt among our customers. The impact of all these initiatives on Outokumpu's operations is analyzed as part of the Group's annual environmental risk rating process. This political and non-fact based situation has required intensive communication from Outokumpu and Eurofer during the last few years.

The implementation of EU chemical REACH regulation is a business risk for many industries, also for Outokumpu. One tool in REACH is to ban and substitute dangerous substances through an authorization process. Among the 22 new chemicals proposed for authorization in 2014 are two substances that are important to Outokumpu; Coal Tar Pitch high temperature (CTPht) and disodium tetraborate (product name "Borax"). Both chemicals are used in Outokumpu's production processes, although not present in the products. CTP is an essential substance in the ferrochrome (FeCr) melt process. Borax is used globally for the production of aggregate material from stainless steel slag and to avoid serious dusting problems at the production sites.

Fast actions for ISO 14 001 certifications

In 2013 Outokumpu made an internal decision that all production sites should have Environmental Management System (EHS) ISO 14 001 certification in use to ensure the progress and compliance in environmental areas. After the decision, former Inoxum production chains without ISO 14 001 certification started to build systems. Already in late 2013, the Dahlerbrück site in Germany attained the certification and in June 2014 our German Nirosta production units (Krefeld, Dillenburg, Bochum, Benrath) passed successfully the external ISO audits and achieved the certification. The new Calvert site in Alabama, US and Mexinox cold rolling plant in San Luis Potosí, Mexico have projects ongoing to certify their environmental management systems similarly during 2015. After these, the coverage of certified ISO 14 001 systems will be 100% in Outokumpu production chains.

The coming International Maritime Organization's and the EU's sulphur restrictions of the sea transport will increase our Tornio plant's transport costs. This will be realized during 2015 and afterwards. However, Outokumpu has cooperated with our line ship operator Langh Ship Company to avoid the cost increase. Langh Ship has developed and installed their own sulphur filter installations to all Tornio route ships already during the summer and autumn 2014.

Our active communication together with some industry associations and Members of the European Parliament on proposed restrictions to truck transport in the EU was a success. This means that existing larger trucks can be used in the Nordic countries for our products as so far.

During 2014 also some other regulations or political initiatives required our communication towards regulators, for instance:

- Update of the EU Best Available Technique Reference document (BAT BREF) related to ferrochrome production
- Updates of some building material standards under the EU Construction Product Directive
- Review of the US and EU waste lists
- National Green Building standards
- Some national Environmental Quality Standards (EQS)

Outokumpu continuously monitors and evaluates legislative initiatives and evaluates their impact on the Group's operations. The initiatives and environmental legal compliance are discussed regularly in internal Environmental Network meetings. Outokumpu also participates in communicating the effects of emerging legislation and aims to supply decision makers with both industry-specific and expert information. Emerging legislation has also been identified as a sustainability issue of material importance to the Group. During 2014, we identified the main legislative initiatives and their probable financial impact; both these activities and impacts have been integrated into the Group's risk management processes and Group EHS experts continue to communicate and gather data in legislative issues together with industrial organizations.

Environmental legal compliance

The follow-up of site environmental permit status and legal compliance is a routine in the quarterly internal Environmental Network meetings. In 2014, the Environmental Network made a prioritization for internal environmental audits for the future based on identified risks and the site audits that were carried out in 2013. Site audits will continue in 2015 according to revised internal risk list. During 2014, many of the production sites got new environmental permits or updates or had a permit process ongoing.

For example in Dillenburg, Germany, exception permit for oil for the cold rolling mills was issued. As an action to reduce impacts of the upcoming sulphur emission regulation, Outokumpu is participating in the liquid natural gas (LNG) terminal project in Tornio harbor, Finland, for which Environmental Impact Assessment was done in 2013. The permit was granted in 2014. Krefeld, Germany, started the first steps in legal environmental procedures to close the melt shop.

Permit process was still ongoing on several sites. For instance, the melt shop in Sheffield, the UK is waiting for a new IED-permit, Avesta, Sweden for example final permit conditions for the acid regeneration plant, Krefeld, Germany the permit for its revised NIFO project (NIFO flex), the Calvert plant in the US the new air emission permit for NOx and SO2 at the melt shop and stormwater permit and the Kemi mine in Finland the permit for landscaping the barren rock heaps. In Dillenburg, Germany permit application on direct discharge of rain water was sent to the authorities.

The environmental permit of the Tornio site, granted in 2012, was appealed by the Swedish authorities despite the fact that permit conditions related to emissions of mercury, sulphur dioxide and nitrogen oxides were strict.

The appellate court dismissed the complaints in December 2014 and the permit is now final. This process did not affect daily processes or the ramp-up of ferrochrome production.

At some European sites, risk assessment updates were done regarding the EU Seveso Directive.

In 2014, emissions and discharges were generally at normal levels and in compliance with environmental permits, but some spills and instances of non-compliances did occur. Environmental compliance data for 2014 shows that there were a total of 21 environmental non-compliances or breaches of permitted limits (2013: 20). None of them were significant environmental incidents and on all these occasions, the environmental authorities were informed and no environmental damage was reported. These were for example:

- Kloster, SWE: leakage of neolyte fluid (high Cr6+) into soil.
- Wildwood, FL US: nickel in wastewater.
- Calvert, AL US: the permit deviation for SO_2 from EAF.
- LP SMACC, UK: dust emission from DC Arc Furnace and leachates in landfill but without the pollution risk outside.
- Avesta, SWE: chromium, molybdenum and suspended solids in waste water, a temporary dust emission.
- New Castle, IN, US: pH of waste water and a delayed stack emission test.
- Tornio, FIN: chromium in waste waters, NOx emissions from hot rolling and a dust emission from FeCr sintering.

During 2014 Outokumpu paid twice fines related to environmental incidents:

- Outokumpu Nirosta, Germany: Delayed emission measurements some year ago at Krefeld cold rolling mill caused EUR 5,357 and EUR 1,582 fines.
- New Castle, IN, US: transport of filter cakes to external landfill without appropriate measures relating to hazardous waste caused penalty of USD 5,625.

In 2014, the cold rolling sites Mexinox in San Luis Potosí and SKS in Shanghai did not have any environmental non-compliances. From the year 2014 we can summarize that emissions into the air and discharges into water remained within permitted limits and the breaches that occurred were temporary, were identified and had only a minimal impact on the environment. Outokumpu is not a party into any significant juridical or administrative proceeding concerning environmental issues, nor is it aware of any realized environmental risks that could have a material adverse effect on the corporation's financial position.

Radioactive material detected before it entered the production process

As recycled steel is used in Outokumpu's manufacturing process, radioactive material can enter the stainless steel production chain. While such radiation usually derives from naturally-occurring sources, the source of radiation in some cases consists of components from items of measuring equipment extensively used by heavy industry. The amounts of radioactive isotopes involved are small, with maximum quantities measured in grams, and sources of this type are normally detected before they enter the Outokumpu production process. Major Outokumpu sites prescreen recycled steel for radioactivity using special radiation monitoring equipment. During 2012 and 2013 the internal guidelines for radioactivity control were updated.

In 2014, two incidents which involved radioactive material entering an electric arc furnace despite the presence of alarm systems occurred at Outokumpu's melting shops in Sweden and Finland. The radioactive material concerned was identified as americium-241, an isotope employed in measurement instruments. All radioactive materials were stored separately in accordance with guidelines provided by the appropriate national authorities. The dose rate associated with the radioactive material encountered in these cases was not at a level harmful to humans.

Materials efficiency

Outokumpu's aim is the production of steel where all the materials resulting from the production are fully utilized either in their primary form for example steel or in the case of swarf recycled back in to the steel production process. Our ultimate aim is zero-waste to landfill.

Outokumpu's manufacturing processes are developed in such a way as to facilitate the recovery of valuable elements from the material streams. Outokumpu's strategy is to improve production processes through R&D projects, continuous improvement tools like business excellence projects or by research programs which are often carried out together with external partners like universities or technology companies.

Twin approach

Outokumpu has two aims when improving the Group's material efficiency. Firstly we minimize the initial use of virgin materials in our primary production of stainless steel. We use Electric Arc Furnaces (EAF's) to recycle steel from post-consumer and post-industrial users. Outokumpu's recycled material input is very high aiding the general transformation towards more circular economy. The second aim is reduction of the quantities of waste sent to landfill after the manufacturing process. By paying special attention to waste management and segregation techniques, many waste fractions resulting from production operations are now recycled or recovered. For example the specific amount of steel slags sent to landfill have consequently been reduced by 30% over the last 3 years.

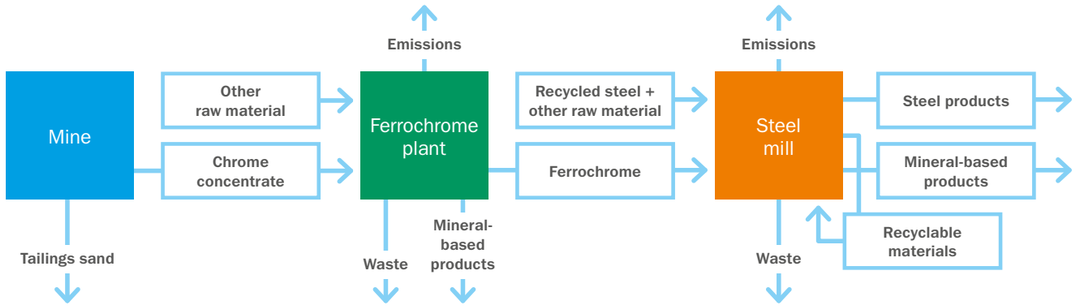
Recycling and recovery of waste materials is a priority

Slag, dust, scales and other production-related material streams are unavoidable in steel production. As a result of the manufacturing process these material streams contain valuable metals. Recovery of these metals reduces landfilling of waste and helps Outokumpu meet its sustainability objectives.

Success in materials efficiency – All slags utilized instead of landfilling

In the Tornio site located in north Finland 1,100,000 tonnes of slag is produced from stainless steel and ferrochromium production. These are manufactured to meet CE-marked aggregate product standards. As a result of extensive research and development and optimized slag treatment processes the site has achieved zero slag to landfill. Major process modifications were done to the slag treatment facilities in order to increase the metal recovery further increasing material efficiency at the site. New processing innovations have led to dramatically improved metal circulation from the slag back to a raw material input of stainless steel production. Improvements in 2014 also include filtering systems for both slag treatment plants in order to reduce dust generation from these processes.

Material flow in the Kemi-Tornio area



Recovery of alloying elements

Dust and scales collected from stainless steel manufacturing operations are considered by Outokumpu to be significant waste streams. Wherever practical, these waste materials are collected and recycled to recover the valuable alloying elements they contain – these include nickel, chromium and molybdenum. In order to fully recover the valuable elements in the dust secondary metallurgical processes are used. Outokumpu operates one such unit in Sheffield, UK, while other Outokumpu sites use external partners to perform this recovery operation. Through these processes nickel, chromium and molybdenum are returnable to Outokumpu's EAF sites and other elements such as zinc can be sent for use as a secondary raw material. Outokumpu's downstream units are also recovering all metallic particles as far as feasible from waste streams, such as dust and scales.

Steel slag transformed into products and the reused of refractory materials

In stainless steel making slag forms a critical part of the production process. Slag prevents the loss of crucial alloying elements during melting and aids the refining stages. They can also play a critical role in energy efficient steel making. It is also by far the biggest material side stream. Outokumpu has invested more than EUR 10 million in the last decade developing slag based products and has fostered long term relationships with key third parties to facilitate the preparation of slag as a product.

The resulting slag products are employed in construction projects, used for neutralization purposes in industrial applications and as a soil conditioner in agriculture. In road construction slag products can replace virgin materials such as crushed stone aggregate. These slag containing roads also offer higher grip levels and are helping to prevent road traffic accidents where they are used. During 2014 over 80% of the steel slag was reused for these purposes.

Used refractory materials are a significant side stream material after slag. Outokumpu has pioneered the crushing and re-melting of dolomite bricks within our manufacturing units. The recovery and reuse of refractory material as a dolomite substitute means that Outokumpu's dependence on virgin material has decreased. With this material being reused in the steel making process as a slag conditioner and effectively ending up in the slag it is effectively used three times; once as refractory brick, secondly as a substitute for dolomite and thirdly as a substitute for road stone in asphalt production. In this way we can say that the refractory undergoes a double reused, eliminating two virgin finite resources (dolomite and road stone).

Continuous development to increase material efficiency

Waste materials are generated during the downstream operations at Outokumpu. These are treated in various ways to minimize environmental impact and increase utilization of the material. Group's guiding principle is to utilize wastes according to waste hierarchy by first recycling, recovering or as an energy source.

Outokumpu continues to invest in new material recovery and reuse techniques. Often this is carried out in conjunction with a local contractor, like in Calvert, AL US: during 2014 new slag treatment facilities were completed (USD 5.4 million).

Hazardous waste facts

Wastes from Outokumpu production units are sent to appropriate treatment facilities or to landfill sites licensed to accept such materials. Hazardous wastes generated by the Group's operations in 2014 totaled 164,341 tonnes, this number includes also some materials used to neutralization. Of this amount, some 49,000 tonnes were exported from the country of origin to be treated and its metal content to be recovered.

Hazardous waste consisting of oily wastes, acid regeneration and hydroxide sludge generated by the Group's operations in 2014 totaled 70,967 tonnes.

All such materials are treated, reused or disposed of in accordance with current legislation and best practices.

Material balance

Materials used, tonnes	**2014**	2013	2012
Recycled steel	2 430 388	2 111 093	2 328 984
Recovered metals	149 143	148 329	130 780
Ferrochrome	482 459	434 191	456 683
Nickel alloys	207 225	202 118	210 041
Other alloys	129 071	122 836	126 212
Additives, tonnes			
Slag formers	405 131	384 028	376 967
Meltshop process gases	414 071	313 804	308 578
Pickling acids bought	40 151	37 702	31 249
Pollution prevention materials	54 314	46 107	45 363
Packaging materials used for final products	20 682	20 498	20 237
Energy, GWh	8 349	8 131	7 481
Electricity	4 771	4 715	3 940
Propane	1 193	1 015	1 151
Carbon monoxide gas	631	541	342
Natural Gas	1 578	1 705	1 844
Diesel, Light and heavy fuel oil, other	176	155	204
Output, tonnes			
Steel	2 919 413	2 598 006	2 686 262
Emissions to air, tonnes*			
Carbon dioxide	1 400 754	1 274 515	1 083 978
Nitrogen oxides	2245	2 634	2 362
Sulphur oxides	383	348	446
Dust	441	447	524
Ozone-depleting substances	0	0	0
Other Green House Gas, t. CO_2 eqv.	81	89	34
Carbon dioxide per tonne of steel	0.48	0.49	0.40
Emissions to water, tonnes			
Metals	53	44	50
Nitrates	2 408	1 809	1 662
Hazardous waste, tonnes			
Oily sludge to treatment	23 002	16 582	18 901
Hydroxide sludge landfilled	47 964	73 639	66 280
Steel making dust to recovery	69 784	57 274	48 597
Wastes and by-products, tonnes			
Steel slag, total	899 451	906 143	821 086
Steel slag utilized	720 091	735 087	586 321
Steel slags utilization rate (recovery, reuse, recycling)	80.1%	81.1%	71.4%

* All emissions to air are scope 1 emissions, including all direct emissions from our operations. Scope 2 and 3 emissions are reported under section Climate change.

Energy efficiency

The steel industry is energy intensive and Outokumpu's steelmaking and rolling processes are no exception. Achieving the highest possible level of energy efficiency is very important for the Group. Outokumpu's aim is to minimize total energy usage and the related environmental impact. Even though significant amounts of energy are used in its production, stainless steel is an enabler for more energy-efficient solutions that save energy during the use phase. Steel grades whose production consumes more energy than others can sometimes be the most efficient solution when viewed from a life cycle perspective. Improvements in energy efficiency are, in many cases, based on the use of stainless steel. In the energy industry, in transportation, and in building and architecture, the use of stainless steel is essential as its energy efficiency offers a way of satisfying new stricter standards and achieving society's targets. Some biofuel applications which require specific levels of corrosion resistance, for example, would not be possible in practice without the use of stainless steel.

Outokumpu manufacturing sites use a range of fuels including direct energy sources such as natural gas, propane, heavy fuel oil and electricity. Energy use by the Group totaled 30.1 million GJ (8.3 million megawatt hours) in 2014 of which electricity consumption totaled 17.2 million GJ (4.8 million megawatt hours). Total energy consumption increased by 2.7%, compared to the previous year of Outokumpu, due to the ferrochrome expansion. Total annual energy consumption by Outokumpu is approximately equivalent to the amount of energy consumed by 245,000 Scandinavian households. The electricity consumption compares to about 45% of the annual output of a modern 1,200 MW nuclear power plant.

Energy used 2014

MWh	Electricity	Fuel energy	Total
Finland	2 787 576	1 455 731	4 243 307
Sweden	480 722	534 245	1 014 967
Germany	479 344	689 149	1 168 493
The United Kingdom	174 476	98 714	273 190
North America (incl. Mexico)	756 854	574 986	1 331 839
ROW	92 094	225 004	317 098
Total	**4 771 066**	**3 577 828**	**8 348 894**

Outokumpu's approach to energy efficiency is long-term and the target is continuous improvement. Energy efficiency is a component in the environmental management systems at Group mills. Major Outokumpu production sites also have long-term, prioritized energy efficiency investment plans. In overall terms, the largest energy-saving potential lies in the recovery of waste heat, improved process integration and improved efficiency in using raw materials.

In all new investments or replacement investments energy saving is a target. Last year's replacement investments of new oxygen plant and new cooling water capacity (EUR 6.5 million, Degerfors, Sweden) for new batch furnaces were taken into full use. At the melt shop in Sheffield, the UK, the new EAF transformer regulator and control system (EUR 2 million) was similarly taken into use. All these investments gained already significant energy and cost savings. For example the Degerfors new two batch furnaces on the heat treatment line result up to 50% savings in energy consumption to heat treat the plate compared to the previous equipment. This reduces also CO_2 and nitrogen oxide emissions.

Large, energy-specific investments are, however, not the only way of improving energy efficiency within the Group. The systematic monitoring and analysis of energy consumption plays a very important role, as does life cycle analysis when purchases of new electrical equipment are being considered. Outokumpu provides its production personnel with training in energy efficiency.

For instance in the SMACC melting shop located in Sheffield, United Kingdom, energy efficiency has been a top priority for many years. In order to continuously lower the demand for electricity new and innovative projects must be developed often using cross functional teams. One example where this has succeeded is on the fume extraction and cleaning plant serving the melting shop. Often these plants use a large proportion of site electricity and provide a critical role in protecting the environment. Conversely, these plant's can be optimized to reduce the energy they use without lowering the standard of environmental protection. The Sheffield site has, since 2009, progressively worked through numerous improvements in both the plant's operation and the installation of best available technology to reduce energy demand. As a result of installation of variable speed drives, using furnace pressure to set extraction rates, replacing old generation fans, developing the control philosophy and establishing preventative maintenance measures, the energy consumption has been reduced by 38%.

To meet long-term targets for improvements in energy efficiency, Outokumpu maps energy efficiency initiatives and investment proposals in order to quantify their improvement potential and any associated costs. This mapping process supports the optimization of energy efficiency investments at Group level; the original aim was a 5% improvement in Outokumpu's energy efficiency by 2020. This target was achieved already during 2013. The process of mapping and identifying highest energy savings potentials continued in 2014. Late 2014 it was also decided to start an internal mapping of further heat recovery possibilities at the Group's European melt shops. Our aim is to start to combine business-level programs during 2015 and proceed with the Group-level program sharing best practices and implementing projects harvesting the most feasible identified potentials.

Improvements in energy efficiency achieved by Outokumpu during 2010–2014 totaled 9%, equivalent to annual savings of some 751 GWh. The proportion of low-carbon electricity obtained from renewables and nuclear power was 58%. Read more about Outokumpu's investments on p. 37.

Origin of electricity 2014

%	
Renewable sources	25
Nuclear	33
Fossiles and turf	42

Sustainable power solutions

Outokumpu's Energy function is responsible for the Group's energy strategy and procurement of the electrical energy employed in Outokumpu's operations. The primary objective is to secure predictable, competitive and stable prices for the Group's future power supply. Other important tasks carried out by the Energy function include the management and optimization of Outokumpu's physical energy portfolio and energy-production assets, participating in new low-carbon energy projects, promoting low-carbon fuel energy sources, and providing support for Outokumpu companies in their energy-related activities.

Price of electricity

In 2014 the average system price of electricity in Nord Pool, the Nordic Power Exchange, was 29.61 euros per MWh. The average of the Finnish area price was 36.02 euros per MWh, considerably higher than the system price. The quite strong hydrological situation, mild weather and low consumption kept power prices at relatively low levels.

Outokumpu's power procurement is executed using a long-term procurement strategy, in which the Group's aim is to achieve predictable, competitive and stable prices for electricity. Outokumpu's electrical power portfolio is managed by engaging in trading activities in the Nordic power market, through bilateral long-term supply agreements with power utilities, and by making investments in low-carbon power-generation capacity.

Outokumpu participates in low-carbon electricity production

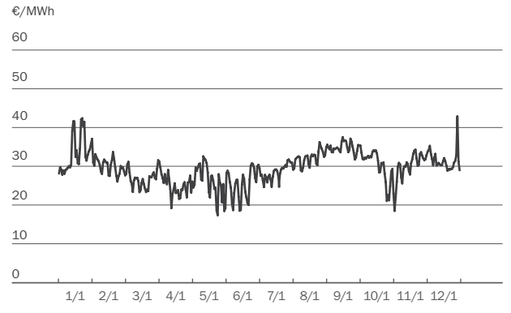
Outokumpu's aim is to have access to additional low-carbon power production sources in the future. To achieve this, the Group participates in new power plant projects and enters into agreements with parties in the power market. By participating in new power plant projects, Outokumpu can also promote competition in Nordic power markets and contribute to adequate power production capacity being constructed in the future.

Nuclear power

Outokumpu has a 12.5% share in the Fennovoima nuclear project. In 2014, Finnish Parliament approved Fennovoima's supplement to the decision-in-principle regarding the construction of a new 1,200 MW nuclear power plant in Finland. According to the plans, infrastructure work at the site begins in 2015 and is expected to last approximately two to three years. The construction of the plant would begin after the infrastructure work and the power plant would start commercial operations in 2024.

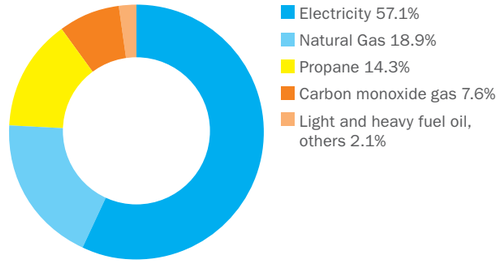
Outokumpu has a minor 0.3% share in the Olkiluoto 3 nuclear power plant project by Teollisuuden Voima Oyj (TVO). Construction of the power plant in Finland is currently ongoing. In addition, Outokumpu has a minor 0.7% share in the TVO's Olkiluoto 4 project.

Nordic daily spot prices 2014



Source: Nord Pool Spot AS, www.nordpoolspot.com.

Energy sources in 2014



Hydropower

Since 2005, Outokumpu has had a 104 MW share of Norwegian hydropower capacity in Rana, Norway through a long-term leasing agreement which is valid until 2020. Outokumpu receives approximately 440 GWh of electricity from this renewable hydropower source on an average year.

The local water is used as own renewable energy source in Dahlerbrück, Germany. The Outokumpu Dahlerbrück site owns a small hydroelectric power plant which was built in 1920 and is protected due to its cultural and historical value. It has two turbines with a capacity of 200 kW and 110 kW. The power generation is dependent on the water level of the River Volme. The site gets 10% of its electricity from the plant. The power plant was renewed four years ago.

Wind power

Outokumpu is a minority shareholder in Rajakiiri Oy, a wind power company. Rajakiiri installed eight shoreline wind turbines with a total capacity of 28.8 MW in Tornio in 2010, and commercial production of electricity started at the end of that year. The technical availability of the wind turbines has been excellent during their first years of operation.

Combined Heat and Power

Outokumpu has a minority stake in a Combined Heat and Power (CHP) plant in Tornio. This plant delivers heat to the production facilities in Tornio, and a proportion of the fuel used is carbon monoxide gas created as a by-product of the ferrochrome production process. The CHP plant has also acquired a local heating business in Tornio. This acquisition will lead to better optimization of the CHP plant, improvements in energy efficiency and a reduction in the level of CO_2 emissions in the Tornio-Haparanda region. Read more about energy and emissions trading on p. 25.

Tornio Manga LNG project

In 2014, Outokumpu and SSAB Ruukki Metals Oy, the energy company EPV Energy Ltd and the gas company Skangas Oy decided on a project to utilize liquefied natural gas (LNG) in industrial processes, energy production and shipping. The project development company Manga LNG Oy has signed a contract to construct an LNG terminal, to procure gas for its owners and to ensure optimal logistics. LNG will replace fossil fuels in industrial use and energy production and substantially reduces particle, NOx, SOx and CO_2 emissions compared to current levels.

According to the decisions made, reception, unloading and bunkering facilities, an LNG vaporizing facility and one 50,000 m^3 storage tank will be constructed at the terminal, located in the harbor area in Outokumpu's industrial site in Röyttä, Tornio. For gas deliveries, a pipeline will be built to the Röyttä industrial site. In addition, a truck loading facility for LNG trucks will be built. From the Tornio terminal, the LNG will be delivered by trucks or railroad to customer terminals and consumption destinations in Northern Finland and Sweden. The building phase of the terminal is 2014–2017, and LNG deliveries will commence in 2018. In October 2014 the project received the preliminary state financing decision from government of Finland.

Voluntary energy efficiency programs

In 2014 at Outokumpu Germany sites the energy management system ISO 50 001 was combined with the environmental management system ISO 14 001 into one and Nirosta production sites covering efficient and certified leading system. In relation to voluntary certifications all these sites have good routines for annual energy efficiency work, including monitoring progress, implementing and identifying improvement possibilities.

Outokumpu has participated in voluntary national energy efficiency agreements in Finland, Sweden and the UK for many years. In connection with energy issues, Outokumpu usually works closely with national organizations – with Motiva in Finland and Jernkontoret forum in Sweden.

Outokumpu has participated in voluntary national energy efficiency agreements in Finland, Sweden and the UK for many years. The Tornio site joined the Finnish program at the beginning of the 1990s. Energy savings in electricity, heat and fuel achieved during 2014 totaled 1,408 GWh. To ensure that systematic improvements in energy efficiency continue to be achieved, Outokumpu sites in Finland signed new energy-efficiency agreements in December 2007 covering the 2008–2016 period. For example, the Group's Tornio operations decided in 2011 to align their internal targets and action programs in an agreement aimed at achieving annual savings of 150 GWh by 2016.

In Sweden Outokumpu has also participated in the second round of the PFE (Programmet för energieffektivisering i energi intensiv industri) agreement from 2009 to 2014. The target in this second period is to achieve annual savings in electricity consumption of 11 GWh. The final result was excellent, in total 13.5 GWh annual savings were achieved and this is not including other energy efficiency projects outside of the program.

For example, in 2014 energy efficiency projects in Avesta included: electromagnetic stirrer, a new temperature robot, optimization of the flue gas cleaning filter at the melt shop, optimization of hydraulic aggregates, investment in new LED-lightning and optimization of the walking beam furnace at the hot rolling mill. The total amounts of calculated energy savings from these projects are approximately 20 GWh annually which is significantly larger efficiency improvement than the target in national PFE program.

Climate change

Outokumpu's energy and low-carbon program

In the past ten years, Outokumpu has reduced significantly the Group's direct carbon dioxide (CO_2) emissions per tonne of stainless steel produced. Outokumpu targets to further reduce the Group's specific carbon emission profile in stainless steel production by 2020, as announced in the Group's energy and low-carbon program in 2010. When assessing and measuring the Group's carbon profile, we utilize a method of calculation which focuses on factors that Outokumpu can manage and control.

The targets set in Outokumpu's energy and low-carbon program highlight not only specific reductions but also the Group's production efficiency, as emissions are calculated per tonne of stainless steel produced. These targets connect our materials and energy efficiency and supply chain management to the Group's business targets. The figure for monitoring progress is a three-year moving average that is compared to baseline figures from the 2007–2009 period. The targets of the energy and low-carbon program represent optimal Group-wide environmental objectives for both Outokumpu and combating climate change. They also support the Group's strategic goals and their achievement is supported by different energy and quality programs. As the targets are both quantitative and a clear demonstration of our long-term commitment in this area, they encourage continuous improvement.

In terms of current capacity and production after the Inoxum acquisition, the annual reduction in CO_2 emissions being targeted is approximately 450,000 tonnes by 2020, a total reduction of 3,000,000 tonnes over the 2010–2020 program period. Combining with Inoxum makes our long-term climate target very challenging; nevertheless we are committed to achieving the overall reductions in time.

Our actions and the results achieved

Primary actions included in the program consist of making further improvements in energy efficiency, increasing the proportion of low-carbon electricity and targeting efficiency improvements through optimal levels of production. An internal air-travel compensation scheme has been implemented for business travel and sustainable aspects are gradually being integrated into our logistics and transportation solutions. These actions involve Outokumpu operations in all locations and business areas.

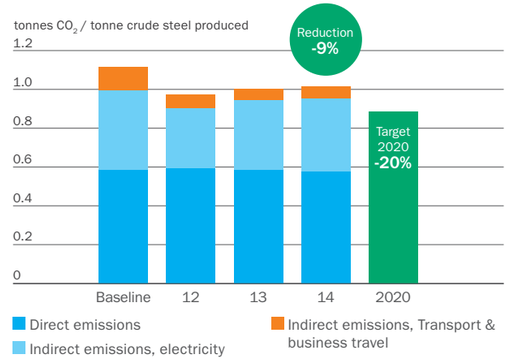
Outokumpu's carbon profile consists of direct emissions from production operations, indirect emissions from electricity consumed and the emissions resulting from the transportation of products and business travel, expressed as a quantity per tonne of stainless steel produced. After 2014, the Group's carbon profile was 9% lower than the program's baseline average for 2007–2009. This result is primarily due to lower specific emissions in production and improvements in energy efficiency. On the other hand, indirect scope 2 emissions from electricity consumption were 1 140 285 tonnes of CO_2, which was somewhat higher than previous (2013) year scope 2 emissions 1 070 208 tonnes of CO_2.

CO_2 emissions resulting from business travel by Outokumpu personnel in 2014 totaled 5,809 tonnes (includes business air travel and company cars). To compensate for emissions resulting from business air travel in accordance with guidelines in the energy and low-carbon program that reflect such activity, an investment will be made in environmental projects that lead to emissions reductions. The level of such investments will depend on the price of emission allowances, the total number of kilometers travelled and specific emissions by air carriers. During 2014, a project in order to improve production of pressurized air and optimize air conditioning and cooling at Tornio was completed, saving 3,312 MWh. These energy efficiency investments are part of a long-term energy efficiency program in Tornio. Annual cumulative savings were 1,408 GWh of energy and reduction in CO_2 amounts to 451,572 tonnes annualized at the end of 2014.

Emissions trading

Outokumpu's main production operations in terms of energy consumption and carbon emissions are located in Europe. Some 80% of the Group's direct emissions fall under the CO_2 Cap and Trade system. The European Union Emissions Trading Scheme (EU ETS) places a direct financial cost on production emissions and the indirect costs of emissions trading are reflected through higher electricity prices. Indirect extra electricity costs for Outokumpu were during the previous EU Emission Trading period 2005–2014 some EUR 45 million per annum. These two elements raise Outokumpu's marginal production costs in relation to our global competitors. Outokumpu emphasizes the need for global regulation in efforts to transfer to low-carbon forms of society. EU Commission's decision to "set-a-side" and postpone auctioning of emission allowances during this emission trading period 2013–2020 would increases these costs further and is harmful for whole European manufacturing and electricity intensive industry.

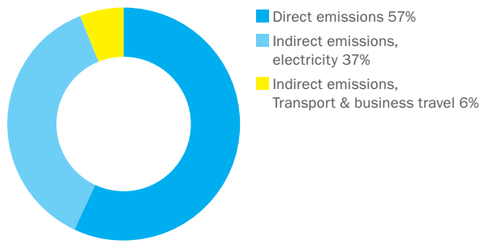
Carbon profile



Major emissions of greenhouse gases by Group operations are twofold: direct releases of CO_2 from the company's sites as a result of combusting fossil fuels and process-related emissions from Outokumpu's steelmaking operations. Outokumpu's CO_2 emissions in 2014 totaled 1,400,754 tonnes.

Outokumpu has in total seven active sites operating under ETS. Outokumpu's emissions trading activities fully comply with the relevant EU laws and regulations, with agreed procedures and with the Group's trading and risk policies. Carbon dioxide emissions under the EU ETS continued to be at lower than normal levels in 2014 due to reduced levels of production, which totaled approximately 1,100,000 tonnes. The allocation for the year 2014 was and allocation for 2015 is estimated to be sufficient for Group operations during that period.

Carbon profile 2012–2014



The EU Emissions Trading Scheme 2013–2020

The EU Emissions Trading Scheme (ETS) continued, with the current trading period being 2013–2020 according to the decision made by the European Commission (EC) and the European Parliament. During this third emissions trading period, 2013–2020, the ETS will become a more restrictive system. Both the cap on total annual emissions in Europe and the proportion of free allocations of emission allowances will gradually be reduced. Auctions will be the main form of issuing allowances. Outokumpu's operations under ETS will continue to receive free allocations of emission allowances according to efficiency-based benchmarks and historical activity.

As emissions are correlated with production activity and capacity utilization rates our position in the long term is difficult to foresee. Current estimates indicate that the Group will not be short of allowances during the initial years of the trading period and that the situation within Group companies will probably vary more than before. One important issue for Outokumpu has been to qualify for a free allocation of emission allowances during 2013–2020 by being part of an industry sector in which there is a significant risk of carbon leakage. According to an EC decision, all of Outokumpu ETS operations currently qualify. All seven Outokumpu sites covered by the emissions trading system have applied for free allocations for the upcoming trading period and are in full compliance with authority requirements.

The renewed ETS directive states that member states can compensate for CO_2-related increases in electricity prices. As Outokumpu has electricity-intensive installations in four different EU countries, this is an important aspect. Outokumpu considers it to be an important correction mechanism for the most profound flaw in the ETS system. Direct and indirect costs of emissions trading have become an important factor in the competitiveness of European steel manufacturing.

Outokumpu views the possible consequences of climate change as a matter of serious concern and wishes to make a contribution to global efforts aimed at mitigating associated effects. Outokumpu has successfully reduced impact to climate change in form of direct and indirect emissions. Still there are future commercial challenges that the Group may face in connection with implementing measures to reduce emissions of carbon dioxide, new situations which arise as a result of climate change may also present business opportunities.

According to a recent study from the European Steel Association (EUROFER), "A Steel Roadmap for a Low carbon Europe 2050", the estimated achievable reduction potential in general is 10–20% for the European steel industry. This roadmap also concludes that steel is an answer to the climate challenge and not part of the problem; this is especially true for stainless steel. By using stainless steel, the life cycle of final product can be made very efficient and steel's 100% recyclability reduces the climate burden further during subsequent life cycles.

Energy and Climate Framework 2030

During January 2014 European Commission published new energy and emission framework 2030. This EC proposal was debated and decided on by European Council during October summit. Also the European Commission and Parliament will affect the outcome and legislation significantly during years 2015 and 2016. On the conclusions Council reserved option to review all elements of 2030 framework after international climate conference at Paris in 2015 and The European Council will revert to this issue after the Paris Conference. The European Council will keep all the elements of the framework under review, notably also with respect to ETS.

This framework sets initial binding CO_2 reduction target to 40% (vs. 1990) by year 2030 and indicative target for renewable energy 27% also by 2030. For the EU ETS sector the target is 43% compared to 2005 levels, non-ETS 30%. In order to bring about the required emissions reduction in the ETS sector, the annual factor by which the cap on the maximum permitted emissions within the ETS will have to be increased from 1.74% currently to 2.2% after 2020. Overall legislation including new ETS directive is expected to be in place during 2016.

Together with the above package European Commission (EC) introduced also EUA market stability reserve (MSR). This piece on legislation would give EC right to withdraw EUAs from the market (reduce supply) in case surplus exceeds certain pre-defined limits. This reserve mechanism is foreseen to increase the price of allowances. MSR is aimed to be "toolbox" for EC to control EUA supply and keep prices on wanted level or in pipeline. It is also an overlapping measure making EUA markets more complicated and unpredictable.

Climate change risks

The risk of climate change induced by human activity and its possible consequences have attracted increasing attention within Outokumpu in recent years. Outokumpu has established a long-term program, implementing determined actions as our response. The issue is a regular item in the Group's long-term strategic planning.

Regulatory risks

The greatest uncertainty for Outokumpu in connection with emissions related regulatory measures stems from the EU Emissions Trading Scheme (EU ETS) and related consequences affecting Outokumpu's business. The current outcome is that the Group's European production units are at a competitive disadvantage in relation to stainless steel and ferrochrome producers located outside Europe.

EU ETS is regional so-called "cap and trade" system that sets total cap for industrial emission. This total cap is levied through market based trading. As emission allowances that remain unused can be traded on financial markets, the system is designed to create a financial incentive for companies to restrict their emissions of carbon dioxide. Conversely, if the level of a company's carbon dioxide emissions exceeds the rights it possesses, corresponding allowances must be purchased. Outokumpu's production sites in Finland, Germany, Sweden and the UK fall within the scope of the EU ETS scheme.

Even though Outokumpu was granted emission allowances at no cost in the 2008–2012 trading period, the EU ETS will become a more restrictive system in the current third emissions trading period (2013–2020). Both the cap on total annual emissions in Europe and the quantity of emission allowances allocated at no cost will gradually be reduced and auctions will become the main method for obtaining such allowances. To dissuade companies who currently operate inside the EU from moving to countries where emissions reduction targets are not in place, industry sectors which feature high levels of carbon leakage will continue to receive free emission allowances. As the iron and steel industry has been identified as one of the sectors in which the risk of carbon leakage is high, Outokumpu sites will continue to receive free emission allowances during the 2013–2020 period, with the amount being based on historical activity levels and efficiency-based benchmarks.

Eurofer has calculated costs of different legislative options for steel industry, total indirect costs for steel are EUR 12.6 billion (EUA at EUR 30) or EUR 16.8 billion (EUA at EUR 40). Eurofer has also calculated that other way around this poses EUR 50 per tonne of steel additional costs. With the same assumptions indirect costs to Outokumpu will increase to over EUR 100 million annually after 2020.

Examples of realized regulatory risks are the two decisions by EU, the so-called "backloading" decision and the "cross sectoral correction factor" decision. Backloading alters the allocation and auctioning timetables and postponed the amount of allowances supplied to the markets. The cross sectoral correction factor cuts the amounts of emission allowances allocated to operators for free and increases costs of compliance.

All the Group sites fully comply with authority ETS requirements. However, delays in agreeing system definitions, international negotiations which remain unresolved and the clear risk of both extensive bureaucracy and emissions related regulations continue to foster increased levels of uncertainty in carbon markets. Also, proposed alterations to the ETS system, such as interfering with the annual supply of allowances and agreed total emission gap, decrease the trustworthiness of emission markets.

In the future, emissions reduction targets (e.g. the EU Climate and Energy package) will become more stringent and Outokumpu continues preparations for conducting the Group's operations in a more restrictive environment in this connection. To manage related risks and prepare for expected developments connected with emissions trading, Outokumpu has an internal Emission Trading Network, which includes representatives from all Outokumpu operations affected by the system. The responsibilities of this network include providing assistance in defining Outokumpu's emissions management strategy and securing its implementation.

Cost-related risks

From a Group perspective, identifying and controlling the cost of compliance with emissions allowance schemes is crucial. Both forecast and realized emissions as well as the allowances granted are monitored by Outokumpu on a regular basis. The Group has also taken action to reduce the costs associated with emissions regulation compliance by entering into financial arrangements such as swapping EU emission allowances for Certified Emissions Reductions (CERs) and investing in carbon funds. During 2013 cost related risks were managed through utilizing CERs and emission reduction units (ERUs) for compliance instead of European emission allowances (EUAs).

As production of both stainless steel and ferrochrome is energy-intensive, Outokumpu's operations are sensitive to changes in the cost of electricity. Power companies transfer the costs associated with their own emission allowances to the prices they charge for electricity, and marginal cost pricing means that all forms of electrical power production are therefore affected by these allowance-related costs. Even though much of the electricity purchased by Outokumpu is of the low-carbon variety, costs of this type have a negative impact on the Group's financial performance and these effects are not mitigated by no-cost allocations of emission allowances. Risks connected with the future cost of emission allowances also add an element of uncertainty to the planning of new investment projects and may affect future investment decisions.

Weather-related risks

Extreme weather conditions associated with the effects of climate change could have an indirect impact on Outokumpu's business and operations. Physical risks due to changes in the climate system and weather patterns can cause damage to property or the loss of production as a consequence of flooding, tornados or hurricanes may be exacerbated in the future. Normal measures designed to mitigate operational risk related to climate change have however already been incorporated into the Group's risk management and related policies. Currently, Outokumpu's production facilities, a tube mill in Florida, and melt shop and cold rolling mill in Alabama are located in areas, which are defined as "regional hotspots". These sites are moderately exposed to severe weather and high winds either from the hurricane potential or the effects of regular severe thunderstorms and tornados common to this geographical area. The Group has general instructions and tools for implementing plans to ensure business continuity within production facilities.

New opportunities

Even though the unpredictable consequences of climate change may be associated with significant future challenges, new business opportunities for Outokumpu may also result. The sustainable nature of stainless steel assists both the Group's customers and society at large in constructing low-carbon solutions. Stainless steel's remarkable physical properties make a significant contribution to achieving improved levels of efficiency in the transportation, energy, construction and manufacturing sectors, as well as in the household goods segment. Products manufactured by Outokumpu are also important in tackling global challenges such as the need for clean water supplies.

Carbon funds

In order to decrease the cost of compliance to ETS, Outokumpu has also invested in the Testing Ground Facility (TGF), a Nordic carbon fund managed by the Nordic Environmental Finance Corporation. States and companies can invest in the carbon fund, which purchases emission reduction units for its investors from projects that benefit the environment. The fund closed its operations during 2013 according to the original plan. Outokumpu still expects to receive some ERUs, which Outokumpu uses for compliance instead of EUAs. In 2014, Outokumpu did not receive emission reduction units from TGF (2013: 12,000 tonnes excluding former Inoxum sites), although some capital was returned The TGF emission reduction units received earlier were used to cover the actual carbon dioxide emissions in 2013.

Emissions, effluents and waste

One of Outokumpu's operating principles is to use best available techniques (BAT) to reduce emissions and minimize harmful environmental impacts which could result from the Group's operations. In this context, BAT means the best available pollution prevention technology from both technical and economic perspectives.

Employing BAT solutions means that the latest technology will be used to keep emissions from Outokumpu's operations at the lowest achievable level. Outokumpu continuously develops Group processes and pollution-prevention techniques to maintain high levels of emissions control also in the future. Outokumpu is also an active participant in the process of updating the reference documents (BREF) which specify related technologies, helping to set the high standards applicable within the European Union.

Efficient systems help prevent spills and instances of non-compliance

All Outokumpu's production sites employ either Environmental Management Systems (EMS) or risk-based management systems which help avoid spills and accidents that could be harmful to humans or to the environment. All of these Group systems operate in accordance with ISO 14 001, the international standard for environmental management systems (see page 15, chapter Efficient management systems to prevent negative impacts in section).

Investments in technology are reducing levels of dust emissions

Dust of different types has traditionally formed the most significant emissions resulting from operations by the steel industry. The majority of Outokumpu's particles emissions originate from the Group's melt shops in Finland, Sweden, Germany, the UK and USA. Even though total production of stainless steel has increased since 2000, levels of dust emissions from the Group's operations have declined significantly.

At Outokumpu's new Calvert facility in Alabama, US some USD 160 million was invested for environmental purposes of which EUR 52 million was invested to minimize airborne emissions, mainly dust. There are now several new baghouses to capture dust emissions, SCR units to reduce NOx emissions and various scrubbers. The Calvert Cold Anneal Pickling (CAPL) and Hot Anneal Pickling lines (HAPL) have the newest mist eliminators/drop separators for their furnaces sections (scrubs particulates), acid scrubbers for their acid bath fumes (scrubs acids out of the air and other gases NOx, HF, SO_2). Also, the HAPL has a mini baghouse to filter dust in the shot blasting section. All these units were taken in full use during 2014.

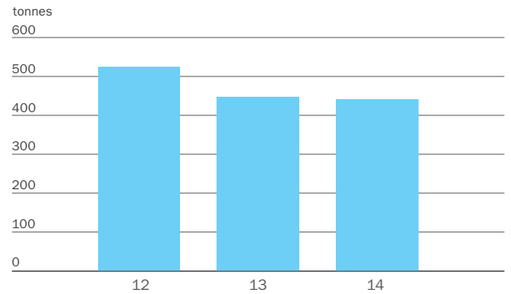
At Tornio, more than EUR 60 million was invested in environmental applications during construction of the new ferrochrome sintering and melting line that was ramped up during 2013 and in 2014 they were in full use without problems. The largest individual investments were dust-filtering units, gas scrubbers and a new unit for handling process water.

Year 2014 proved that these investments were efficient; the emissions from the new sintering and ferrochromium plant were lower than what was expected. In 2014 at Tornio site totally EUR 8 million were invested together with our contractors to prevent further dust emissions from the slag treatment processes and replace in lime kiln heavy oil as fuel by local carbon monoxide gas which is a by-product from our ferrochrome production.

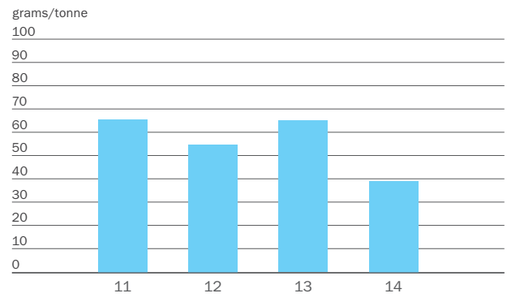
In Degerfors, Sweden, during the first half of 2014 investments in a new oxygen gas plant, new water treatment plant (EUR 6.5 million) for new batch furnaces (EUR 11.3 million) and upgrading of a walking beam furnace (EUR 1.5 million) were taken into use. These investments decreased already local CO_2 and NOx emissions and water discharges in 2014. The Avesta plant in Sweden continued a project with a consultant to optimize the production and energy use during hot rolling which will also have impact on emission decreases.

Dust emissions by Outokumpu in 2014 totaled 441 tonnes, 1.4% less than in 2013. This was an excellent result since the processed volumes increased. Since the dust-filtering system is extremely efficient, normally catching 99% of dust emissions, even a brief malfunctioning leads to high increase in total emissions. Therefore, the lower dust emission levels are also an indication of operational improvement in the Group's dust emission control efficiency.

Particle emissions to air



Melting shop particle emissions



Strategic chromite ore – sustainable mining

Stainless steel is indispensable for the modern society as it plays an important role for infrastructure, energy and food supply as well as healthcare. The main alloying element in stainless steel, chromium, is defined by the European Commission as one of the economically most important critical metals for Europe.

The Outokumpu Kemi mine is the only chromium mine within the European Union. As the ore-bearing minerals are very stable and chemicals are not used in the beneficiation process, mining operations have only a minor effect on local water quality. Metal discharges from mining activities are small, and their effect is only observable as slightly elevated concentrations of nitrogen, solids, calcium and iron in watercourses. The largest emissions into the air result from the transportation of ore and barren rock, from operations in the product loading area and from piles of concentrate. All mining operations are now carried out underground after the shift from open-pit to underground operation was completed during 2005. Even though dust emissions into the air have therefore become minimal (totaling approximately less than half a tonne in 2014), the effect of particulate emissions on air quality is still monitored regularly by studying levels of suspended particulate matter. The results of the monitoring showed that the emissions situation has remained stable and that concentrations of dust in air at and around the site are low.

At the Kemi chrome mine, piles of barren rock, former open-pit mining activities and the beneficiation and clarification basins all have long-term effects on the landscape. Tailings basins are landscaped when they are full. Barren rock is used in backfilling underground workings. As the concentration processes at the mine employed are based on gravimetric separation, only water and small amounts of flocculant are used.

Of the total amount of water used, 95% was recycled rainwater. Noise generated by blasting operations is almost inaudible, even within the mine area. In April-May the spring flooding in the streams nearby the mine was normal.

According to environmental impact assessments carried out, the only significant noise-related effects result from the increased levels of road traffic involved in transporting concentrate from the mine to the Tornio ferrochrome plant. These effects have been further mitigated by a new

Investments in new Sustainable technology

New Degerfors investments in Sweden decrease emissions and save energy significantly. Environmental investments were completed in 2014 as a part of larger production investment program. These two heat treatment furnace replacements and upgrade of existing walking beam furnace improved significantly environmental performance. The old equipment required the plate to cool down to room temperature before reheating. The result is up to 50% savings in energy consumption to heat treat the plate. Similarly it reduces CO_2 and nitrogen oxide emissions.

road close to Tornio plant that was taken into use in 2010, minimizing any potential disturbance to residential areas.

Reductions in emissions

Air quality is top priority

Dust emissions from Outokumpu's operations typically contain small quantities of metals (including iron, chromium and nickel), most of which are present in harmless forms. Chromium, for example, is usually found in its trivalent form and not in the hazardous hexavalent form. In recent years, the Group has supported many studies investigating the effects of metal emissions on both human health and the natural environment.

Outokumpu's emissions of nitrogen oxides (NOx) were reduced to 2,245 tonnes in 2014. Despite the increased levels of stainless steel production in 2014 the resulting emissions were lower than during 2013. To minimize NOx emissions, the Group's production sites in Avesta and Nyby in Sweden and Tornio in Finland have started to use the latest burner technology and Selective Catalytic Reduction (SCR) technologies in processes. Our Shanghai SKS unit in China started to use a "CLEANOX" equipment in order to minimize NOx emissions. Degerfors adjusted also operations to reduce NOx emissions according to new production volumes and permit limits.

Emissions of sulphur dioxide (SO_2) from the FeCr sintering plant at Tornio, Finland will also be reduced. Utilizing of alkaline water in gas scrubbers continued. The water being used comes either from the slag handling unit or from lime milk tanks.

Fugitive dusting is one environmental impact associated with steel slag treatment. In Tornio, Finland, an EUR 1 million investment to reduce this dusting was made by our contractor in 2014.

Continuous improvement in the monitoring of Outokumpu's production operations reduces risks to the environment. Particle emissions from the steel melt shop in Tornio, for example, have been monitored nonstop since the beginning of 2007. The detailed daily emissions data obtained from the monitoring system allow potential filter leakages to be rapidly identified so that immediate remedial action can be taken. The Group's new ferrochrome sintering and melting plant is also equipped with continuous dust measurement units. In a similar manner, the particle filter system in the Sheffield melt shop stops the melting process if particle emissions are too high, giving environmental protection the highest priority. All these process control measures can be seen to represent industry best practice.

Outokumpu does not utilize mercury in our production operations. Nevertheless, our main raw material – recycled steel – may sometimes contain small amounts of mercury. Our products are mercury-free: all mercury possibly coming with recycled steels is emitted in our melting process. The steel melt shops in Tornio and Avesta use continuous measurement of mercury emission levels. During 2014 the measurements have revealed some potential sources of mercury in the scrap. The overall emission was lower than in the earlier years, showing that the European mercury ban in most articles is having an effect, but with a delay on recycled steel.

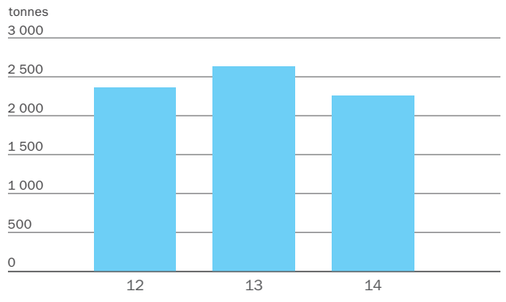
Air quality monitoring and controlling conducted at many Outokumpu production sites enable the Group to correctly assess and determine the environmental impact of production and other operations. At the Sheffield melt shop, for example, the monitoring of particle levels – PM10, PM2 and PM1 – has now been conducted for the last eleven years. The Air Quality Standards Regulations 2010 specify that a one day average of 50 µg/m³ is not to be exceeded more than 35 times in a calendar year and that the calendar year average is to be less than 40 µg/m³. The year average was more than 50% lower than the 40 µg/m³ limit with only two exceedances of the daily average. Therefore the Sheffield site was below the required limits.

In Tornio the latest local ambient air quality study (diffuse emissions, PM10) results showed that European air quality guidelines or limit values were not exceeded. The emissions concentrations measured were well below guideline and limit values. In conclusion, the Finnish Meteorological Institute stated that "the air quality in Tornio is very similar to any other small or medium-size town in Finland". During 2014 these measurements continued at two measurement points, one located in Sweden and the other in Finland. Both measurement points were about five kilometers away from the mill. The results (which were in full view to everyone via the internet) have so far been very similar to the previous ones. Air quality in the area is generally at a good level and the effect of Outokumpu's dust emission is hardly visible.

Energy efficiency goes hand in hand with air emission reductions

At Avesta, actions to optimize operation of the main walking beam furnace at the hot rolling mill have increased thermal efficiency by approximately 20%. The recovery of heat from furnace exhaust gases at the production sites in Tornio and Avesta also reduces Outokumpu's total energy consumption, and emissions of nitrogen oxides, CO_2 and sulphur dioxide are correspondingly lower as the amounts of fuel required to generate heat are reduced.

Nitrogen oxides to air



Successful implementation of a variety of energy efficiency measures has also reduced the Group's specific CO_2 emissions.

In Dillenburg, Germany, the two completed energy efficiency projects (RTL hall and air compressors) created some 4,200 MWh natural gas and 390 MWh of electricity yearly savings plus emission savings. Similarly, as part of internal saving projects at SKS in Shanghai, China, there are several energy saving projects ongoing. The new water crystallizer investment at Mexinox in San Luis Potosí, Mexico, was taken into full use and significantly decreased energy consumption, and CO_2 emissions even by 95%. In total, spending of EUR 6.5 million on energy improvement measures in 2006–2015 at the SMACC melt shop in Sheffield, UK, has resulted in energy savings of 6% in specific energy.

Mexinox cold rolling unit reduced NOx emissions by utilizing scrubbers in annealing and pickling lines. The site has also decided to use natural gas in the combustion equipment to reduce NOx emissions into the air. During 2014, specific NOx emissions were reduced by over 9% compared to the previous year 2013.

Waste water

All our waste water is treated before discharge, either at our own facilities or by the local municipal facility. In Calvert, AL, US, the investments to clean and recycle water and to reduce the waste water load totaled EUR 63 million and were taken into full use. These consist of water treatment and acid regeneration plants and storm water drainage. The acid regeneration plant (ARP) is based on Pyromars technology and used to reclaim the waste nitric acid and hydrofluoric acid for reuse.

In Dillenburg, Germany, the planned expansion of the municipal wastewater treatment plant seems to be a cost-efficient way of arranging the de-nitrification instead of having our own treatment plant. This is why the cold rolling plant decided to finance the expansion of the municipal wastewater treatment plant (EUR 1.5 million). Investment with the community will be started soon.

At Tornio, Finland, a larger sedimentation pool for wastewater was in full use. This arrangement allows almost all suspended solids to be filtered out and reduces metal loadings drastically.

Test fishing campaigns in Tornio (in the post-sedimentation pool) and in the Kemi mine tailings ponds showed that in both cases there are healthy and numerous fish populations (pikes, perches and other typical local fishes). The chemical analysis revealed that there is no metal accumulation in the fishes, they are healthy and breed normally.

During construction of the new ferrochrome sintering and melting plant in Tornio, the wastewater handling system was renovated and the circulation of process water is now almost totally closed. Water is circulated through cooling towers and solid material is separated in settling ponds and by using centrifuges. Only a small fraction of water used is conducted out of the circulation system, reducing metal loading on the environment.

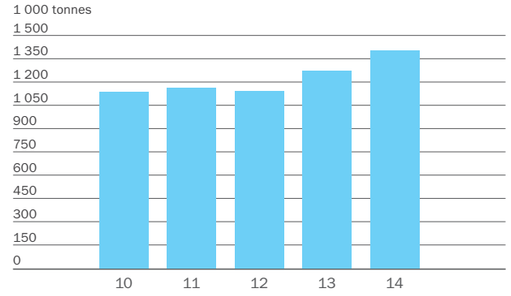
Landfills

Outokumpu owns and manages landfill sites at some production sites in Finland, Germany, Sweden and the UK. Operations in these locations meet stringent EU and national requirements. In addition to the actively used landfill sites, Outokumpu is taking care of some closed landfills. These sites are carefully monitored in order to be assured that the environmental impacts, for example on surrounding water, are minimal. The sites are typically also landscaped.

For example in Dillenburg, Germany, the cold rolling unit uses an off-site deposit site for neutralization sludge, but also takes care of some liabilities of old landfills. At the Nyby site in Torshälla in Sweden, the cold rolling plant uses its own landfill and old ones are closed. In Sheffield, the partial capping of the operational landfill has helped to limit the influx of rainwater and thereby reduced the generation of landfill leachate that requires treatment prior to being removed from the landfill cell.

The Bochum disposal site at Blücherstrasse, Germany was technically closed. The new permit for Marbach disposal site in Bochum Hamme, Germany created public concerns in 2013 and Outokumpu established a voluntary advisory committee in Marbach to share information and views with neighbors and other interest groups. However, after the decision to close down the Bochum melt shop the official permit process and local committee activities will be affected.

Carbon dioxide to air



Increased water recycling – reduced costs and waste

In early 2014 the new water treatment plant was taken into use at Degerfors site, Sweden for all production waters. The recycling rate of waters reached 97% level of all production water in 2014 – a remarkable improvement compared to the waste and recycling rate from the old plant. The impact of the cost savings is even greater. In addition, sludge from the water treatment plant is reused in the Avesta melt shop.

Working hard to prevent leakage and soil contamination

Some of Outokumpu's production sites have been in use by the metal industry for decades or even centuries. This increases the likelihood that some contamination exists at these sites. Typically, soil or groundwater at old production sites might be contaminated by oil or metals. Outokumpu's principle is that contamination is always treated and remediated according to current legislation and guidance from the authorities. These cases do not have significant or material effects on the Group's finance but remediation may last quite a long time. Often the main action is the pumping of contaminated groundwater for a local waste water treatment plant.

In Dahlerbrück, Germany, the remediation of groundwater and site banks of the river Volme has succeeded and has been completed. In Tornio, Finland, the old landfill is closed. The new landfill area is built according to stringent EU legislation, for example all seepage waters from the area are carefully treated to remove all harmful elements. Groundwater around the area is monitored regularly.

Soil contamination was investigated during 2014 in Sweden at the Nyby site. Investigative reports were submitted to the authorities. Also the final report on groundwater monitoring at the former Avesta production site in Sweden was submitted to the authorities and results showed that the metals are bound in the soil and the contamination of nearby waters is very low. In Krefeld, Germany, risk assessment of soil and groundwater impact of the closed steel plant is in progress in coordination with the authorities. In Kloster, Sweden, planning work regarding the closure of the site was started. In Bochum, Germany, preparations for the closure of the melt shop were started. Planned remediation work was ongoing at some Group sites in 2014, for example in Krefeld and Dillenburg, Germany. In Benrath, Germany, groundwater is treated by an air stripper, de-ionized, de-manganized and used as production water. The groundwater remediation in Wildwood, USA, has decreased contaminants significantly. Also remediation work at the former warehouse site in Montreal, Canada continued as planned during 2014.

Water

Water is an important resource for steel making. Almost all Outokumpu production units are located in areas in which there is a lot of water available. Most of the sites are located by rivers and in areas with a lot of rain. However, the Mexinox cold rolling unit's surroundings in San Luis Potosí, Mexico, is arid and dry. There, the water source for production is groundwater and its use is restricted by local environmental permits.

The Mexinox cold rolling unit uses water well below the permit limits and recycles almost all the water for production processes. Process wastewater is recycled and treated by proper neutralization, clarification, filtration, reverse osmosis, evaporation and crystallization procedures. Sanitary wastewater receives flotation and disinfection treatment. Oily water is treated in an ultrafiltration process and recycled. The amount of wastewater sent to the municipal sewer outlet is only 500 m^3 but the total use of water is 30,000 m^3 per month. So almost all water is already recirculated at the site (the recycling rate is some 98%). Some of the remaining, treated and neutralized wastewater is conducted for irrigation of local vegetation, plants and trees.

Related to water and other resources an Evaluation of Ecosystem Services (ESR) was done in Avesta, Sweden and the results were interesting. The method, ESR was developed at World Resources Institute. As a result the availability of clean water was assessed as the most important ESR resource for our local units and this has an effect on our services, production and local ecosystems in various ways. A positive impact from our Avesta production site on the local ecosystems is when by-products are used instead of virgin sand for construction purposes since the water cleaning in the Dalarna (Avesta area) depends heavily on local sand ridges. These natural sand resources have been excavated for a long time and now the local community and ecosystem are facing the risk of having insufficient filtering capacity which will threaten the local water quality. The use of by-products such as our slag decreases this local water supply risk.

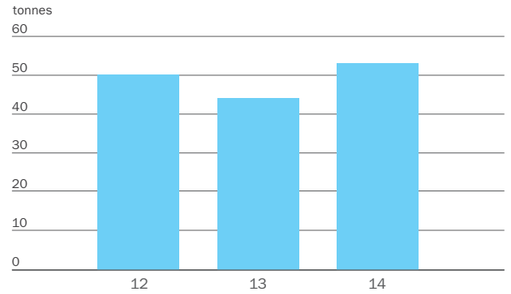
The efficient recycling of water was a principle already inin planning the new Calvert facilityin Alabama, US. The water system there uses closed loop recirculation for cooling processes. The site reuses the industrial waters for a minimum of three cycles of concentration in systems for maximum efficiency, and of course less water usage. All these are now in use and functioned well in 2014.

In the Bochum melt shop in Germany, drinking water is used for all process purposes because natural ground or surface water is not available in the area due to large-scale underground coal mines. Due to costs in the melt shop, there is a totally closed loop in water use.

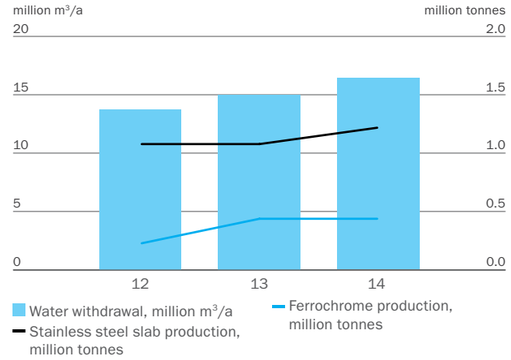
Water withdrawal and discharges

	2014	2013	2012
Water withdrawal by source			
Surface water, million m^3	**35.4**	32.1	29.9
Municipal water, million m^3	**1.8**	1.9	2.2
Groundwater, million m^3	**1.4**	1.5	2.1
Rainwater, million m^3	**1.0**	1.0	1.6
Water discharges by type and destination			
Cooling water out, million m^3	**31.4**	29.8	31.8
Waste water out, million m^3	**21**	20.2	18.7
Metal discharges to water, t	**53**	44	50
Nitrogen in nitrates, t	**2 408**	1 810	1 662

Metal discharges to water



Annual water consumption in Tornio



Biodiversity

Natural surroundings at stainless steel production sites remain unharmed. The production of stainless steel does not employ or reserve large areas of land, or have a significant effect on biodiversity in the surrounding natural environment. Outokumpu production facilities are not located in sensitive areas such as Unesco World Heritage sites, Ramsar sites or Unesco Biosphere reserves. During recent decades, Group sites have not been found to disturb local biodiversity in any manner which is generally considered unacceptable.

Environmental impacts are regularly evaluated

None of the species included in the International Union for the Conservation of the Nature and Natural Resources (IUCN) Red List (a list which identifies and documents species most in need of conservation attention if global extinction rates are to be reduced) are known to be affected by Outokumpu's activities. Although the Group does not have any significant operations in ecologically sensitive areas, impacts on biodiversity at Outokumpu production sites are evaluated on a regular basis as part of the Group's environmental management processes.

Actions to protect the local biodiversity at those sites in which valuable biodiversity or species are recognized, Outokumpu staff have also actively protected the nature, wildlife and animal species. For instance, a part of the Calvert production site in Alabama, US, is defined as wetland and is home to quite a wide array of wildlife. At the site it is possible to see deer, wild turkey, wild boar, fox squirrels, gopher tortoises and various snakes, even Alabama black bear. Since the gopher tortoise and Alabama black bear are threatened species, the environmental team has worked with regulators on a voluntary basis to help trap and move gopher tortoises to safe locations and even a "bear friendly" fence was installed to allow the Alabama black bear to better travel through its natural migratory pathways.

An EU nature protection area (Natura 2000) is planned to be established on part of the company's property in Dahlerbrück, Germany. According to the conservation program, there is a rare cliff forest biotype with some endangered animal and plant species. Environmental authorities have investigated the EU Natura areas located near the Outokumpu site in Tornio. Reports and statements issued in the 2000s indicate that the Group's activities do not have a significant negative impact or threaten biodiversity in these areas, which include popular bird nesting habitats near the Tornio facilities and two bird watching

Reducing emissions and energy use by new water treatment

Water recycling at Mexinox in San Luis Potosí is very efficient (some 98%) and the use of fresh water was under the Mexinox own internal target for the whole year 2014 and much lower than the permit limit. To improve water recycling further an expansion of the crystallization process of the wastewater treatment plant was taken into use. This is recycling more water, replacing two old units with a new electrical evaporation unit, improving energy efficiency and decreasing CO_2 emissions by 95%.

towers. In 2014 this unique nature area Alkunkarinlahti was also presented and promoted in Outokumpu's local employee magazine "Chrome & Steel". Outokumpu has also financially supported some of the activities of the local bird watchers club during the last years.

The Mexinox production site has planted a lot of trees on the site, principally so that every employee has own tree to take care of. This is part of the local voluntary nature conservation and climate program in this arid and dry area. Nature and landscape conservation, mainly coming from irrigation costs of vegetation and trees have been every year more or less significant.

At the Outokumpu site in Sheffield in the UK, an area has been established to provide protection for species of wading birds which nest there in springtime. Measures are taken to ensure that these nesting activities are not disturbed. At the Kemi chrome mine, water circulation ponds have increased local biodiversity by creating new nesting sites for waterfowl. At Avesta in Sweden, Outokumpu owns some 300 hectares of forest certified by the Forest Stewardship Council (FSC), an international organization established to promote responsible management of the world's forests.

Responsible aftercare of former production sites

Outokumpu ensures that areas formerly used for the Group's production operations are returned to their natural state, as far as technically feasible. At the Kemi chrome mine, barren rock extracted during mining operations is now being utilized and intermediate rock-storage locations are being used in underground construction and for gallery-filling operations.

At the Kemi chrome mine, a new landscaping plan for a 22.5-hectare tailing sand pond will be implemented and more ecologically efficient ways of capping is to be investigated. At the Tinsley Park landfill site in Sheffield in the UK, approximately 50% of the landfill area has been capped after the completion of waste tipping operations in these locations. As part of Outokumpu's commitment to future follow-up in this area, restoration work being carried out by the Group will add to natural levels of biodiversity. The plants being introduced are native species and operations being conducted include establishing areas of meadow. Species of wildflower are also being sown to provide an environment in which invertebrates such as butterflies and bees can thrive.

Marine ecosystems are in good health

The main discharges into recipient water from stainless steel production are metals and nitrates. These are monitored according to national guidance at every production site. For instance, as Outokumpu's Tornio site is located on the Tornionjoki river estuary on the coast of the Gulf of Bothnia and close to nature reserves, the Group's manufacturing operations have, from the beginning, been developed to be environmentally sound. Many studies monitoring the biological, physical and chemical conditions which prevail near the Tornio site have been carried out since the 1970s. The latest research report concerning the impact of nitrates on recipient water at the Tornio site and the Kemi chrome mine showed that impacts are restricted to the immediate proximity of the discharge points at Tornio and cause only slight eutrophication. At the Kemi mine, the impacts on sea areas are essentially negligible.

Pollution prevention techniques being employed by Outokumpu mean that increases in emissions can be avoided. Further reductions from earlier emissions levels will also be achieved in many cases, even at higher-than-current production levels. Annual studies carried out by Pöyry, a consulting company, have shown that impacts on sea areas close to the Group's production plants have diminished over the last ten years and that associated marine ecosystems are in good health. The results of the latest biological and fish population monitoring study confirmed the positive development. The new monitoring of bottom fauna, the levels of metal in fishes and water quality showed that fish populations were healthy and the levels of metals (Cr, Ni and Zn) were very low and similar to the non-loaded reference sea area 30 km from the site. Also from bottom fauna even very sensitive species were found in the vicinity of the site. The quality of the sea water was good and metal concentrations were below the drinking water limits at all sampling points during the whole year. Annually some twenty professional fishermen are working close to Tornio and catch around 50 tonnes of fish. The effluent from the Tornio site has not deteriorated the reproductive capability of the fish either. For instance, the summer of 2014 was the best salmon fishing season ever according to statistics from the Tornionjoki river.

A number of studies, including the continuous monitoring of discharge levels, have shown that discharges of chromium and nickel are now 60–80% below the levels that prevailed over ten years ago. Over the last ten years, they have been at a stable, low level despite the fact that stainless steel and ferrochrome production levels have increased in Tornio. Considered to be the most significant metals released into the sea by Outokumpu's production activities at Tornio, current discharges of chromium and nickel only represent a fraction of the total metal loading, which originates in the main from natural sources in the northern part of the Gulf of Bothnia. Tornionjoki and Kemijoki, the two major rivers in the locality, carry far greater concentrations of these metals into the sea than the total amount discharged by Group facilities. Activity in local fisheries located near the Tornio plants is at healthy levels and commercial fishing operations are carried out close to Outokumpu's production plant. Research indicates that the metals released from Group facilities do not accumulate in marine food chains. Even in sedimentation ponds of wastewaters there are healthy fish populations.

Tornio watershed protection awarded by peers

All the measures described above will help in further reducing the Tornio plants environmental impact on the sea ecosystems. The above mentioned successful actions in Baltic Sea environment protection were mentioned when the International Chromium Development Association awarded Tornio plants in November 2014 with its Sustainability Award in water treatment and water environment protection.

Measures to improve the condition of the Baltic Sea continue

Outokumpu is participating in the Baltic Sea Challenge. Practical measures instituted at the Tornio site in the 2000s continue to be employed and the Group will also take action in the future to improve the condition of the Baltic Sea. A new 70-hectare sedimentation pond before filtering waste water into the sea has significantly reduced suspended solids and metals discharged into the sea.

The quantities of nitrogen in wastewater released by Outokumpu have also been at lower levels than at previous times. As of the end of last year, all Tornio site sanitary waters have been conducted to the local municipality water cleaning unit and this will even further decrease the load on the sea compared to previous years.

For more information on the Baltic Sea Action program, please visit our Sustainability website.

Sustainable Supply Chain

The sustainability of the Outokumpu supply chain is important to the Group. We want to secure sustainable sourcing and manufacturing of our products and promote sustainability towards our suppliers.

The aim is threefold: to carry out business operations in a responsible manner, to develop continuously our performance, and to improve the sustainability of Outokumpu's supply chain together with the Group's business partners and subcontractors. The target is full accountability and sound, as well as stable and fair business relationships with our suppliers. In addition, Outokumpu provides customers with continually updated product statements and declarations covering the supply chain.

Supplier requirements renewed

An essential element in ensuring Outokumpu's sustainability is regular evaluation of our suppliers' sustainability policies, practices, and related performance.

Internal common supplier requirements were further developed and approved. These requirements are in line with our policies and statements regarding sustainability. Implementation of these requirements was started 2014, and now all new suppliers are to be assessed against the common supplier requirements. To develop their performance, Outokumpu provides the Group personnel with regular training. The principles underlying sustainability, responsible business practices and good corporate governance are integrated into the materials used in commercial training, all the way from introductory courses to training courses designed to enhance contracting and procurement skills.

Regular dialog in supply chain

During 2014 we evaluated the existing ways of working related to the supply chain, especially since we want to be ahead of the increasing needs for information and statements for our customers. We will follow processes within the new Group operations and evaluate our new suppliers according to the new supplier requirements, including all central sustainability criteria.

The latest round of the Group's sustainability evaluation of current suppliers was finalized in 2012. The frequency is planned to be tri-annual, the scope of the evaluation is all raw material producers and strategic suppliers in general procurement. Coverage of completed answers and evaluated companies was more than 90% of Outokumpu's total spending on materials and supplies to these companies (excluded energy purchases).

Going forward, in general procurement we are aiming to assess our suppliers at an ongoing basis. In 2015 evaluation of our current and new suppliers against the common supplier requirements will be integrated into the general procurement strategy and tracking the coverage of supplier assessments will be included in the internal General Procurement KPI reporting.

The data collected is used in the Group's program for developing a comprehensive and sustainable sourcing process. The results obtained from the evaluations form the basis of both development work and audit planning. Outokumpu monitors the performance of Group suppliers and subcontractors through auditing. Regular external audits carried out in accordance with local EHSQ (Environmental Health Safety and Quality) management systems used at Outokumpu's operational sites were conducted during 2014 as planned. The process is also an important element in managing supply chain risks. Awareness of such issues is the only way to provide Outokumpu's customers with accurate sustainability information, and to guarantee to end-users that the Group's stainless steel products are produced in a responsible manner.

Sustainability is a precondition for new suppliers

In addition to evaluating and auditing our current suppliers and contractors we have integrated sustainability issues into the approval process for new suppliers. Sustainability requirements need to be acknowledged and signed up to by new suppliers; these issues are also part of Outokumpu's internal qualitative supplier evaluation system.

As a leading producer of stainless steel Outokumpu makes public product statements such as a conflict minerals statement, a statement related to product safety and health, radioactivity and chemical safety statements, and environmental product declarations. All of these statements require the Group to have knowledge of its suppliers and supplies.

Outokumpu ensures safety of our products

Outokumpu product safety information for customers and the Safety Information Sheets of products were updated for the new company. Because life cycle and environmental data of products is becoming more important Outokumpu has expanded Environmental Product Declarations (EPDs) to also cover our long products and rebar. Our EPDs are verified by an external independent institute. Read more about EPDs on p. 16.

Work continues to improve efficiency in transport

Efforts continued to minimize the environmental burden resulting from activities in Outokumpu's supply chain logistics and transportation. The emissions that result from product transportation are included in the Group's carbon profile and integrated into Outokumpu's long-term climate-change-related targets.

In 2014, the scope of reported emission data was enlarged to also include our main internal product transfers. Due to this, the numbers are not directly comparable with those published in the previous years' reports. Comparable data for previous years' has been calculated for this report.

Total CO_2 emissions resulting from transportation of products to customers in 2014 totaled 239,672 tonnes. The proportion of products and deliveries transported externally to customers by road, rail, and sea were 67%, 17%, and 15%, respectively. In total, the internal and external transports of products amounted to 12,456 million tkm (tonne kilometres).

Transportation of Group products by mode

For internal product flows, the efforts to shift to train and ship are showing results. Almost 80% of the Group's internal transportation is by ship, followed by 16% by train.

Although there is an ambition to increase the share of train and ship in transports, truck is still the main mode of transportation when it comes to transport of finished goods to customers. Especially in Central Europe there has been some success in using intermodal transportation, which means combining truck and train.

Transportation of products by mode 2014

%	**2014**	2013*	2012*
By road	**50**	56	38
By sea	**35**	31	27
By rail	**15**	13	35

* 2012 Figures for transportation of products by mode have not been restated and is the Outokumpu stand alone figure before Inoxum acquisition, therefore not comparable. 2013 figures have been restated.

Reduction of sulphur emissions in the Baltic Sea environment

The new European Directive restricts the emissions of sulphur from sea transport in the Baltic Sea region further from January 1 2015. This impacts transports from Tornio, where a lot of transport goes by ship. To cope with the new, strict requirements, the ships used by Outokumpu to transport coils and other products from Tornio to Terneuzen have had scrubbers installed to remove sulphur from the off gas. When cleaning the gas, about 50 kg/day of residue (sulphur containing paste) is removed and collected for further processing at a waste disposal plant. These gas cleaning scrubbers were taken in use during 2014, among the first in the Baltic and North sea area.

Environmental investments and expenditures

Costs for environment-related activities within Outokumpu totaled EUR 101.4 million in 2014, of which costs associated with operational environmental management totaled EUR 95.5 million. Operational costs include process-related treatment, disposal and remediation costs for waste and emissions into air and water.

Provisions and guarantees in connection with environmental considerations totaled EUR 68 million including provisions for the aftercare of former mining sites of EUR 1.4 million. Environmental investments by Outokumpu and its contractors at the production sites in 2014 of approximately EUR 25 million, from these Outokumpu invested directly EUR 15.5 million. The amount was smaller than in the previous years due to big environmental investments made during past years and the very challenging business environment.

Main recent environmental investments

At Calvert, AL US: the environmental investments related to establishing new production site were in 2014 in full use and amounted to over EUR 100 million. The most significant investments in this area were:

- Water treatment plant USD 61 million
- Acid regeneration plant USD 22 million
- Electric arc furnace dust filter baghouse USD 22 million
- AOD converter dust filter baghouse USD 21 million
- AOD material handling dust filter baghouse USD 8 million
- Other dust filter baghouses USD 8 million

At our Degerfors site, Sweden, new environmental investments were also taken into full use during the early part of 2014: a water treatment plant (EUR 6.5 million) and two heat treatment furnace replacements and an upgrade of existing walking beam furnace.

Other significant environmental or energy efficiency investments were:

- Tornio, Finland: in order to decrease CO_2 emissions and increase energy efficiency, the new gas pipeline and new equipment to replace heavy oil being used as fuel in the lime kiln with local carbon monoxide gas, which is a by-product of our ferrochrome production. The total investment was EUR 7 million; this was joint investment with on site contractor SMA Minerals.
- Avesta, Sweden: modifications to melt shop EAF for better energy efficiency (EUR 3 million).
- Bochum, Germany: Marbach landfill: (EUR 1.2 million), remediation purposes.
- SMACC, UK: to reduce energy use and CO_2 emissions, new EAF transformer regulator and control system (EUR 2 million).
- Tornio, Finland: EUR 0.7 million together with contractors to prevent further dust emissions from the slag treatment processes and EUR 2.9 million (0.2 MEUR remains for 2015) for material efficiency and metal recovery from the same process.
- Calvert, AL, US: new slag treatment units totaling USD 5.4 million were completed by our on-site contractor.

In Tornio Outokumpu and the long term on-site contractor Tapojärvi decided to invest a total of 3 MEUR for stainless steel slag treatment plant to decrease dust emissions and increase the metal recovery. These investments will be in full use in 2015.

Environmental investments of the new Outokumpu during the last decade were some EUR 400 million, including for example new acid regeneration plants for Avesta and Krefeld, improvement projects for energy efficiency and dedusting equipment for several units.

Outokumpu decided to switch over to using liquefied natural gas (LNG) at the Tornio mill instead of propane. Outokumpu invests approximately EUR 30 million, phased over 2015–2018, of which the vast majority is used to make the required equipment modifications at the Tornio mill.

Process development

An essential area of our research and development operations is the continuous development of our production processes and technologies. Process and technology development activities focus on reduction of the environmental impact, improvement of the cost efficiency of our production processes and on optimization of product quality. During the year 2014 one of the main tasks of our process development teams was to support Outokumpu's strategic initiatives related to EMEA restructuring and ramp-up of Calvert operations. Operation of Core Technology Competence groups, Group-wide expert teams dedicated to development of certain production process steps, was kicked off. The Core Technology Competence groups are utilized as an important vehicle to transfer technical knowledge and best practices between our production units.

An excellent example of recent results of our process development is that at Tornio plants there is no longer need to landfill any slag after treatment. Annually 1.1 million tonnes of slag is produced in Tornio by the stainless steel and ferrochrome production, which all are processed into CE-marked aggregate products. Major process development in slag treatment facilities has led to substantially improved metal recovery. New processing innovations have enabled drastically improved metal circulation from the slag back to stainless steel production. Improvements in 2014 include also filtering systems for both slag treatment plants in order to make slag treatment as dustless as possible. Also many other developments to material efficiency have been made, for example, improved handling and reuse of molybdenum-containing dusts and slag.

Inter-company integration for energy efficiency and climate protection

During 2014 Outokumpu and on-site contractor SMA Mineral jointly invested EUR 7 million in SMA Mineral's calcium oxide plant in Tornio. A 1.1 km long carbon monoxide line was built for the plant from Outokumpu's ferrochrome ovens. CO gas replaces heavy oil in the SMA Mineral's processes totaling 370 full oil truck loads per year. The investment increases also significantly energy and cost efficiency of the lime kilns. SMA Mineral provides calcium oxide for the steel melting process at Outokumpu's Tornio plants. This is an excellent example of additional benefits of close cooperation and integration between industrial plants.

“

At the end of the year, Outokumpu completed the first employee engagement survey (O’People) for the new organization.

Our people

The year 2014 was twofold for Outokumpu employees. First, the execution of necessary restructuring measures to turn the company back to profitability continued. Second, the year marked a turning point from just restructuring towards sustainable development of the organization.

Necessary restructuring continued

Continued restructuring measures at Outokumpu meant difficult decisions and execution of plans, for example, in outsourcing and headcount reduction to keep on track with reducing 3,500 positions worldwide by 2017 as announced earlier. However, it is clear why Outokumpu needs to improve profitability after several years of making losses. Outokumpu negotiated with its employees in the affected locations and the most important result of these negotiations was the agreement between Outokumpu and German unions on the closure of the Bochum melt shop in 2015, two years ahead of the original plan. The agreement meant that Outokumpu was able to accelerate the restructuring its European operations.

The first results from the restructuring work showed already during the year, when the Group posted its first positive operating result excluding non-recurring items (such as one-time costs from restructuring) in the third quarter since the acquisition of Inoxum at the end of 2012, showing that Outokumpu is on the right track. While the first positive harvests were reaped, the full-year results were still negative – this shows clearly that the restructuring measures, continuing until 2017, need to be executed according to the plans also in 2015–2017.

Towards commercial superiority

As the restructuring progressed, Outokumpu was also able to look beyond it during 2014 and start the journey to commercial superiority by means of the continuous improvement of the organization.

Moving Outokumpu towards commercial superiority, the new generation of top management from the commercial rather than operative side took their positions after summer, when the business areas were reorganized to better respond to the needs of the customers. Outokumpu also did a talent review regarding key positions and set up a Talent Council across the business areas to support mobility and exchange of talent across all businesses.

A new short-term incentive system was built and taken into use for the top management, with the next management levels to follow in 2015. At the end of the year, Outokumpu completed the first employee engagement survey (O’People) for the new organization. The survey will set the basis for organizational development in the coming years.

Personnel in numbers

In 2014, Outokumpu continued necessary restructuring work to turn the company around and back to sustainable profitability. The reason for the turnaround was clear, since both Outokumpu and Inoxum had been making losses already before the acquisition of Inoxum by Outokumpu. In order to achieve this, Outokumpu needed to make difficult but necessary decisions during the year.

In February, Outokumpu sold its high-performance alloys business (VDM) and decided to close down the thin-strip production unit Kloster in Sweden by the end of 2014. In March, Outokumpu and German unions completed negotiations regarding the industrial plan in Europe, which targeted to accelerate the closure of the Bochum melt shop and cut cold-rolling capacity in Europe. After constructive negotiations ended, the work to implement the industrial plan started immediately. The Bochum team is cooperating with the teams in Avesta, Sweden and Tornio, Finland to ensure that all production will transfer smoothly and safely to these production units in 2015 maintaining high product and service quality for customers. A social plan has been established to help employees over the period after the one-year acceleration in the melt shop closure.

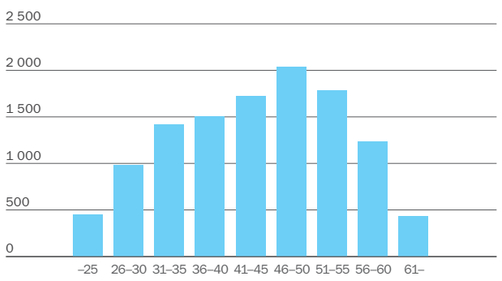
Overall, in 2014 the number of personnel declined in total by 436 positions or 3.5% and stood at 12,125 at the end of the year. Against the target of reducing 3,500 jobs by 2017, disclosed in the beginning of 2013, we were about half way through.

In Europe, the number of personnel declined by 506 in total, mainly following the industrial plan implemented in Germany. With regards to the other main location countries in Europe, reductions in Sweden at Nyby and Kloster balanced out with increases at Avesta and Degerfors, whereas in Finland the number of employees remained nearly unchanged. In the Americas, where Outokumpu is ramping up facilities, the Group on balance hired about 100 employees, especially in Calvert and Mexinox, while in Asia the number of employees slightly declined.

In 2014, ramping up new facilities raised the hiring rate to 4.7% (2013: 3.4%). Additionally, restructuring work led to an increase in the leaving rate which was 8.2% (2013: 7.9%). At the same time, the voluntary leaving rate slightly declined to 3.3% (2013: 3.5%). The described shifts within the Group's structure resulted in an increase of the average turnover rate to 6.5% (2013: 5.7%).

The number of people on fixed-term contracts was 549. In all restructuring work and lay-offs, Outokumpu complied with local legislation, collective bargaining agreements and other applicable regulations.

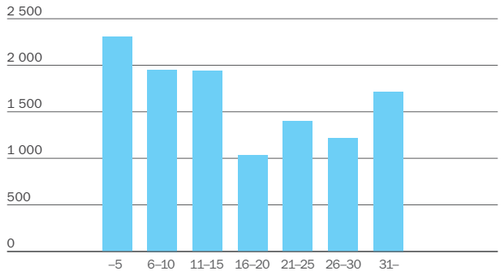
Personnel age profile, permanent employees



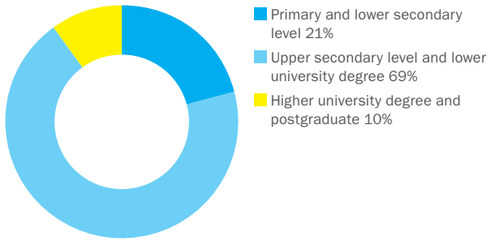
The share of blue-collar workers remained stable at 65% (2013: 65%, 2012: 61%). Of Outokumpu employees, 14% were women (2013: 14%, 2012: 17%) and 86% men (2013: 86%, 2012: 83%). By the end of 2014, 30% of the employees worked in Germany, 20% in Finland, 16% in Sweden, 10% in the US and 9% in Mexico.

Outokumpu's permanent employees mostly work on a full-time basis and some 745 people work on a part-time basis. This corresponds to 646 positions in full-time equivalents.

Personnel by years of service, permanent employees



Educational background, permanent employees*



* Data covers 95% of permanent employees.

Outokumpu did a talent review regarding key positions and set up a Talent Council across the business areas to support mobility and exchange of talent across all businesses.

Hires and Leavers by business area

Number of permanent employees as per Dec 31, 2014	Number of employees	New Hires	Leavers	Hiring rate %	Leaving rate %	Voluntary Leaving rate %	Avg. Turnover rate %	Hires vs Leavers
Group total	11 576	547	951	4.7%	8.2%	3.3%	6.5%	-404
Coil EMEA	7 164	66	511	0.9%	7.1%	1.5%	4.0%	-445
Coil Americas	2 125	331	183	15.6%	8.6%	6.9%	12.1%	148
APAC	597	78	105	13.1%	17.6%	9.7%	15.3%	-27
Quarto Plate	732	30	50	4.1%	6.8%	2.7%	5.5%	-20
Long Products	647	19	39	2.9%	6.0%	2.9%	4.5%	-20
Other Operations	311	23	63	7.4%	20.3%	7.7%	13.8%	-40

Personnel by region, gender and contract type

Total number of employees as per Dec 31, 2014	Total	thereof male		thereof female		Blue collar		thereof male		thereof female		White collar		thereof male		thereof female	
Group total	12 125	10 481	86%	1 644	14%	7 921	65%	7 576	96%	345	4%	4 204	35%	2 905	69%	1 299	31%
Europe	9 104	7 826	86%	1 278	14%	5 992	66%	5 706	95%	286	5%	3 112	34%	2 120	68%	992	32%
America	2 410	2 148	89%	262	11%	1 611	67%	1 562	97%	49	3%	799	33%	586	73%	213	27%
Asia	581	485	83%	96	17%	309	53%	299	97%	10	3%	272	47%	186	68%	86	32%
Australia	26	21	81%	5	19%	9	35%	9	100%	0	0%	17	65%	12	71%	5	29%
Africa	4	1	25%	3	75%	0	0%	0	0%	0	0%	4	100%	1	25%	3	75%

A minor part of the figures are based on estimations as accurate data is not available.

Personnel by countries

	2014		2013*		2012*	
	Headcount	FTE	Headcount	FTE	Headcount	FTE
Europe						
Germany	3 586	3 373	5 917	5 643	6 342	6 021
Finland	2 408	2 295	2 404	2 320	2 753	2 599
Sweden	1 969	1 880	1 954	1 873	2 466	2 365
The United Kingdom	541	538	583	578	615	609
Italy	218	211	3 078	3 071	3 115	3 105
The Netherlands	197	192	203	196	227	221
France	64	61	104	100	119	119
Poland	41	41	45	44	54	52
Hungary	28	28	29	29	33	33
Spain	11	10	49	47	57	55
Russia	9	9	11	11	12	12
Austria	7	7	14	14	21	19
Norway	7	7	8	8	11	11
Denmark	5	5	6	5	16	16
Belgium	5	4	5	5	5	5
Turkey	3	3	83	83	84	84
Czech Republic	2	2	2	1	1	1
Portugal	2	2	2	2	3	3
Romania	1	1	1	1	1	1
Estonia	0	0	0	0	39	38
	9 104	**8 669**	14 498	14 031	15 974	15 368
Americas						
The United States	1 212	1 212	1 356	1 355	1 333	1 332
Mexico	1 104	1 104	1 091	1 091	1 103	1 103
Argentina	85	85	88	88	103	103
Brazil	9	9	5	4	6	6
Canada	0	0	4	4	32	32
	2 410	**2 410**	2 544	2 542	2 577	2 576
Asia						
China	544	541	582	582	597	597
India	15	15	15	15	16	16
Japan	6	6	13	13	12	12
Singapore	11	11	12	12	13	13
The United Arab Emirates	5	5	5	5	5	5
South Korea	0	0	4	4	4	4
Hong Kong	0	0	0	0	17	17
Saudi Arabia	0	0	0	0	78	78
	581	**578**	631	631	742	742
Australia	26	25	37	37	37	36
Africa						
South Africa	4	4	4	4	4	4
	4	4	4	4	4	4
Group total	**12 125**	**11 686**	17 714	17 244	19 334	18 726

* Including discontinued operations.

Goals and results

Results 2014

For 2014, the overriding objectives were to implement the ongoing restructuring measures and to move the company beyond restructuring and into business excellence. The focus areas for 2014 were increased focus on job rotation, building up capabilities and looking into fundamental business processes to ensure customer satisfaction and internal efficiency.

Restructuring measures continued – for example, synergy savings were ahead of schedule and headcount reductions continued. The hard work in restructuring and cost-cutting started to show in financial results, when first EBITDA in the second and then the operating result excluding non-recurring items in the third quarter were positive for the first time since the acquisition of Inoxum. The full-year results remained however in the red. This means that the implementation of restructuring measures, which stretch until 2017, needs to continue according to plan.

At the same time, when restructuring work progressed, Outokumpu was able to look also beyond restructuring and to further improve its customer focus. To this end, business areas were reorganized to become more customer-driven. For example, all European coil operations, whether standard or specialty grades, were moved into one business area and commercial expertise increased both in top and business area management. Outokumpu also kicked off the Chorus program, which is about looking into fundamental business processes and unifying them across Outokumpu to gain efficiencies. The work started in 2014 and continues in the coming years, but Outokumpu expects to reap the first benefits from the work as of 2015 onwards.

Despite restructuring, job rotation was one focus area during the year. This was mainly due to Outokumpu ramping up new capacity in the Americas. Calvert, Alabama offered dozens of stainless steel professionals an opportunity to relocate to another mill and country for a shorter or longer period of time. Also Group-wide programs such as cost savings initiatives and the Chorus program offered many new full-time or part-time challenges and opportunities to develop their competencies.

During 2014, Outokumpu also began looking into future talents in a talent review process and established one common body, the Talent Council, to support international mobility and exchange of talent across business areas and functions.

Goals for 2015

The year 2014 was in many ways about planning new processes and ways of working after the Inoxum integration in 2013 – such as a new short-term incentive scheme for top management, the Chorus program to review business processes, talent development and other continuous improvement actions, such as the first employee engagement survey (O'People) in Outokumpu after the integration. 2015 will be about consequent, disciplined execution of these. For example, the Chorus program needs to help find opportunities for efficiency in order for Outokumpu to finally reach the overall target of sustainable profitability. The performance culture leading to business excellence will be strengthened with Performance and Development Dialogs (PPDs) as well as execution of manager workshops in all business areas. Through leadership profile implementation, work with the Talent Council and succession planning, we set clear expectations for our future leaders and support their career development. In 2015 we will start the process of redefining our employer value proposition as well as the development frame with building relationships with business schools.

Performance management

A lot of work was put into developing performance management in 2014 with changes both to the process and the documentation system. The results of this development work will come to fruition in the coming years, starting in 2015.

Currently, after the Inoxum acquisition and integration, there are still several performance and development discussion processes and documentation systems in the Group. Due to this, it is not possible to give a figure for how many Outokumpu employees have gone through a performance and development discussion with their manager. In 2014, the target remained the same: the target is that every employee has a performance and development discussion with their manager twice a year as a minimum. The work to include more employees in the common performance management process (PDD) continued throughout the year and, for example, in Calvert and Mexico the practice of having development discussions was expanded into subsequent organizational levels.

During the second half of 2014, activities were developed to start changing the way performance is managed in the whole company. A workshop was designed for managers to initiate the new approach in performance management in all parts of Outokumpu and a new short-term incentive plan was communicated to the organization at the end of 2014. One of the implications of these changes for 2015 will be that every employee is expected to have a quarterly performance and development discussion with their manager.

Also, the employee engagement survey, O'People, will give guidance on the areas which need to be developed for Outokumpu to become a high performing organization. This development work will start in 2015 in all parts of Outokumpu.

Compensation and benefits

In compensation and benefits, Outokumpu has an overall framework and principles defined by Corporate Human Resources. Within the framework, the business areas can develop solutions which best support the needs of their business and which are competitive according to local market practices. In 2014, the overall principles remained unchanged and due to Outokumpu's financial challenges, salary increase budgets were very limited and only the most critical cases were addressed. Some changes were made to incentives for field sales employees, for example, in the Coil EMEA and APAC business areas. In APAC, in addition to the introduction of a separate sales incentive plan, the pay mix was also changed somewhat to put more weight on variable pay in the total compensation.

When it comes to performance share plans, some of the annual criteria were reached, but according to the terms and conditions of the plans, the earned reward shares will not be paid until the end of the three-year performance period. The structure of the short-term incentive plan for top management was changed to strengthen the link between the financial performance of the company and the payouts, and it was implemented at the beginning of the year. The same short-term incentive structure will be applied to subsequent management levels from the beginning of 2015.

Training and development

While restructuring progressed, the building of the new company culture continued as well. Outokumpu introduced Winning Behavior workshops at the end of 2013 to build up common understanding on the common behaviors that bring us success. Winning Behaviors are about putting the customer first, turning volumes into profit, acting with speed and working together. Workshops continued nearly throughout the whole of 2014 in the units and almost 2,000 Outokumpu employees took part in them. For example in Mexico, the management decided that they wanted each employee to participate and some 90% of the workforce took part in workshops. Each employee made a promise at the end of the workshop on what they could do immediately to improve their work. The feedback from the workshops was positive and people were enthusiastic about them.

During the year, Winning Behavior workshops evolved into a Champions' League where employees could nominate colleagues or work teams that were bringing Winning Behaviors to life in everyday work. All in all, almost 200 employees were nominated across the globe and their achievements were shared in the global intranet over the year. The Outokumpu Leadership Team selected twelve champions who in their opinion had demonstrated the Outokumpu Spirit and Winning Behaviors in an especially good way. At year end, employees voted for the top four Winning Behaviors champions, one for Profit, Customer, Speed and Together respectively.

Otherwise, due to the savings programs, only business-critical and necessary training programs, such as safety training, continued in the units. For example in the Americas, where Outokumpu is ramping up the Calvert mill in Alabama, as one of the major profitability levers, the training courses are critical to the ramp up and continued throughout the year. Also, in Quarto Plate Business in Degerfors we undertook training for many employees associated with new investments in increased capacity and product capability. There were two compliance-related e-learning programs, one for the renewed Code of Conduct for all white-collar employees and the other for competition law compliance issues. These programs were completed during 2014. A pilot development program for young talent in Europe was initiated in late 2014 and will be expanded in line with the new Training and Development Frame during 2015.

Besides training, one way to develop employees and their competences is job rotation, which was a focus area in 2014. An estimated 30 stainless steel professionals from Outokumpu's sites in Europe and South America took part in the job rotation program and relocated – some for shorter, some for longer periods of time – to Calvert. Some 10 people assumed an expatriate assignment and took on new challenges within the organization. Also some Group-wide projects gave possibilities for Outokumpu employees to broaden their skills. In the autumn, Outokumpu started the Chorus program which will take a look at all business processes and harmonize them in the entire Group. The program is run by Outokumpu's own experts, and most full-time and part-time members of the project came from within Outokumpu.

Almost **2,000** Outokumpu employees participated in the Winning Behavior workshops.

During early 2014, Outokumpu undertook a Talent Review Process to review all of the key position holders in the Business Areas and Functions. A Talent Council made up of Senior Leaders from the Business Areas and Functions was formed to follow up on key actions from the Talent Review Process and encourage greater mobility of key talents and Group-wide visibility and development of the potential successors. One of the long term aims of the Talent Council will be to set clear expectations and performance requirements for the career development paths of our future leaders. The Council has been meeting quarterly and follow-up actions have been undertaken by the Corporate Human Resources team. The Talent Review Process for 2015 will commence in March 2015.

At the end of the year, Outokumpu completed the first global employee engagement survey (O'People) in the company after the Inoxum integration. The results will show and determine the critical development areas for the next couple of years, and the work will begin in all parts of Outokumpu in the beginning of 2015.

Diversity and equal rights

Outokumpu's ethical principles build on the equal treatment of all people, and there is zero tolerance for any kind of discrimination, whether it is based on ethnic origin, nationality, religion, political views, gender, sexual orientation or age. The Group endorses the values of the United Nations Universal Declaration of Human Rights. A transparent and unified resourcing process is the way to ensure equal opportunities. Outokumpu complies with international labor treaties and condemns the use of forced and child labor.

Outokumpu maintains a consistent policy of freedom of association. All employees of the Group's operations are free to join trade unions in accordance with local rules and regulations. Altogether 81% of the Group's permanent employees were covered by collective agreements in 2014. During the year, there were 170 days lost due to strike (2013: 24; 2012: 8).

14% of Outokumpu's employees are women (2013: 14%, 2012: 17%, 2011: 18%). At the end of the year, two of the eight members of the Board of Directors and one of ten members of the Leadership Team were women, and altogether 24 women held key leadership positions. These correspond with the overall percentage of women working in Outokumpu.

Compliance

During the year, Outokumpu's Code of Conduct, which sets the Group's ethical standard and guidelines for a common way of working, was revised and updated. The revised Code of Conduct is available in all nine major languages of the Group – Chinese, Dutch, English, Finnish, French, German, Italian, Spanish and Swedish. It was implemented with strong involvement and message from the top management as well as through a wide internal communication campaign and e-learning training. As part of the training, Outokumpu launched an e-learning in its Code of Conduct, compulsory for all white collar employees. The first stage in 2014 covered some 3,000 people out of which 99% completed the training.

Other compliance training sessions carried out during 2014 included e-learning in competition law compliance for the relevant personnel in the Group. The training has been successfully completed by some 1,400 employees in 2014. Outokumpu constantly develops its competition law compliance training programs to enforce effectively its policy to fully comply with competition laws.

Outokumpu has a Helpline, a confidential contact channel through which employees or third parties can report suspected misconduct confidentially and anonymously by e-mail, mail or fax, or they can phone directly to Internal Audit. Investigation of one communicated case in 2014 resulted in proof of violation of Health and Safety standards. From eight further special investigations based on allegations brought forward through other channels, no incidents in view of discrimination or human rights violations were noted; however Internal Audit observed theft of material in two instances and potential violations of the Outokumpu Code of Conduct in one case.

Communication and cooperation

Focus on employee communication supporting the transformation and driving a common culture continued in 2014 after a major integration which began one year previously, while at the same time the company was able to look beyond integration and restructuring as well.

Based on the results from the previous internal communications surveys in 2013, line manager communication and improving the usability of the company intranet continued to be in focus during the year. While intranet and managers are the most important day-to-day sources of information, these were supported by the internal magazine, published four times a year, and internal newsletters. The CEO spoke to the top 200 managers in relation to the most important news during the year in altogether six teleconferences, after which the managers took the message forward in their organizations. As part of the continuous efforts to improve communications at Outokumpu, the first ever Outokumpu all staff info call was arranged in March. In the all staff info call, the employees had a chance of hearing directly from the CEO about Group strategy, priorities, achievements and challenges. Due to good feedback, the second all staff call was arranged in October. Two top management meetings were arranged during the year.

A major part of employee communication related to the ongoing restructuring programs and their targets and progress, but also to sharing successes and common ways of working, such as Winning Behaviors and Outokumpu Champions' League. The Champions' League page became the most read campaign page ever in the Outokumpu intranet with over 16,000 views. Also safety was a priority during the year. "My safety promise" campaign was launched in the spring with the target of highlighting risk areas, increasing commitment to safety and every employee returning safely back home after the working day.

Outokumpu Personnel Forum

Outokumpu has a Personnel Forum, which is a joint consultative body that offers a channel for transferring information between management and employees. The forum was established some ten years ago, when the European Works Council directive entered into force. The Personnel Forum discusses issues of transnational interest – the Group's economic and financial performance, future business prospects, product and market situations, strategy, investment decisions, annual report, manpower and employment issues, business reorganization, health and safety, environment, technology and research and other matters which have transnational impact or where there is a common interest.

The forum has 33 representatives from European operations and it appoints a working committee (Group Works Council) which is responsible for ongoing cooperation between management and employees. The works council has eight members representing the personnel and three representing the management. In 2014, the forum met once in Espoo, Finland and the working committee altogether four times. In addition, there was one workshop to prepare the O'People personnel survey.

Local cooperation with unions

Since Outokumpu is still in the middle of restructuring programs, during the year there were local cooperation and negotiations related to these. In March 2014, the Group and German unions agreed on the acceleration of the closure of the Bochum melt shop. Changing the existing tariff agreement is very exceptional, and the work to implement EMEA restructuring was begun immediately after the agreement was reached. The cooperation continued regarding financial services and IT outsourcing, and negotiations regarding the closure of Kloster operations and to reduce head office headcount were completed during the year. Local negotiations are done according to local practices and regulations.

Safe working environment

At Outokumpu, safety remains the number one priority. Outokumpu is committed to providing a safe and healthy working environment at its production sites and facilities for its own personnel, contractors and visitors.

Safety First

Safety is the number one priority at Outokumpu. The Group Management has continued to raise the profile of safety with it being at the top of every agenda and with visible performance indicators throughout the company.

Outokumpu remains committed to providing a safe and healthy working environment at its production sites and facilities for its own personnel, contractors and visitors. The ambition is to continuously improve our safety practices to ensure that Outokumpu is an industry leader in safety.

Significant improvements have been made to allow a step change in safety performance however opportunities for further development still exist across the Group. Common safety reporting has allowed the opportunity for internal and external benchmarking across a range of lagging and leading indicators. The ultimate goal for Outokumpu remains zero accidents with an underlying Management philosophy that all accidents at our sites are avoidable.

Safety performance

In 2014, the total injury frequency for the new company was 30.3 (2013: 34.6). A contractor fatality occurred in the Coil Americas operation during 2014. This was the first fatal injury in Outokumpu for nine years and was felt deeply throughout the company.

The Group LTI rate (lost time injuries per million working hours) significantly improved to 2.7 (2013: 4.5) and was better than target. The number of other severe accidents remained at a low level with many injuries being of a minor nature.

The number of non-lost time injuries was 727 (2013: 908).

The follow-up of proactive safety indicators continued to be a focus for Outokumpu's operational management. The total number of hazards and near-misses was 17,564 (2013: 19,836) and the number of safety behavioral observations also increased to 34,999 (2013: 19,695).

A number of plants maintained zero lost time injuries during 2014 and have maintained this for multiple years. These sites are across the production steps, providing evidence of best practice and sharing opportunities.

Focus for 2015 and beyond

Outokumpu's safety strategy follows our existing safety principles and is built on the three themes of having visible safety leadership, employee ownership of safety and sound safety systems and processes. Improvement action across these three areas will continue in 2015 with increased training particularly in Safety Leadership and Contractor Management and increased focus on near miss and hazard reporting by all employees and development of common safety management systems.

Total rate of injuries for employees and contractors*

* Per 1 million working hours.

Health

As a responsible company, Outokumpu initiated systematic health studies with world-class independent expert institutes in the 1980s. The main targets of these studies have been individual levels of exposure to chromium and other compounds in the stainless steel production chain and their health effects. Occupational health activities focus on improving working environments and employee health is monitored using a variety of occupational health checks and fitness tests. Occupational hygiene measurements are carried out on an ongoing basis at Group production sites to monitor work-related exposure to noise and impurities in the ambient air, as well as other factors. Issues related to working environments within Outokumpu are also studied through joint research projects carried out in collaboration with universities and specialist institutions.

In 2014, an average of 5,428 days per million hours worked by Outokumpu employees were lost as a result of sickness or injury (2013: 6 689). The number of cases of occupational disease diagnosed in the Group in 2014 was 13 (2013: 11).

Epidemiological studies among Finnish ferrochromium and stainless steel production workers

An epidemiological cancer study was completed and the results were published in the article "Cancer incidence among Finnish ferrochromium and stainless steel production workers in 1967–2011: a cohort study" in the British Medical Journal in November 2013. The cohort consists of 8,100 employees who have been employed at the Outokumpu mine in Kemi and production site in Tornio since 1967. The health data related to this cohort have been analyzed further, and the results are expected to be published in 2015. Studies on particle characterization in the workplace air and on the acute respiratory health effects caused by occupational exposures are in the reporting phase.

> Events tailored to creating open and active participation are clear signals for local communities that Outokumpu wants to be part of the community and to encourage an open Outokumpu culture.

Outokumpu and society

Outokumpu's operations have economic impacts on local, national and global communities in its countries of operation through paying taxes, direct and indirect employment, and other means of community involvement.

Outokumpu operates in a competitive industry where demand and supply meet on global markets. On the other hand, our production sites are often located in relatively small cities or towns. This means that Outokumpu is significant to the small local community's economy, and often one of very few private sector employers in the area. Finding balance between global market trends and responsibility towards communities is sometimes difficult, especially in economic downturns. Decisions have a major impact on communities, Outokumpu personnel and their families and local goods suppliers and service providers as well.

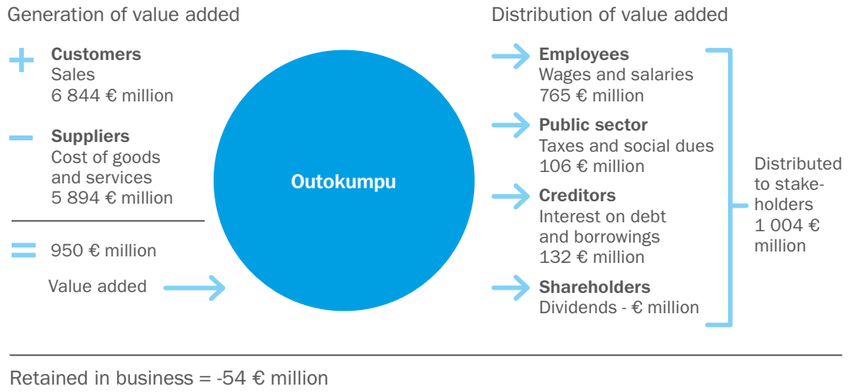
Events tailored to creating open and active participation, such as a variety of "open house" events on production sites, are clear signals for local communities that Outokumpu wants to be part of the community and to encourage an open Outokumpu culture.

Outokumpu makes donations to various charitable enterprises and events in line with its ethics. The Group may sponsor research and environmental programs, sporting activities, culture and a variety of events at local level, as well as charity work. We also offer scholarships to students. Organizations that arrange activities for children are also supported.

Outokumpu supports research and development related to its field of industry and maintains close cooperation with educational institutes in the training of engineers, miners and supervisors. Apprenticeships have been offered to local colleges and student placements have been made available in the form of one-year programs, and schoolchildren and local students have been introduced to the Group's operations.

Outokumpu does not take part in or otherwise support political activities whether they are local or national. Outokumpu does not make donations to any political parties or groups.

Value added distributed to Outokumpu's stakeholders



Risks and stakeholders

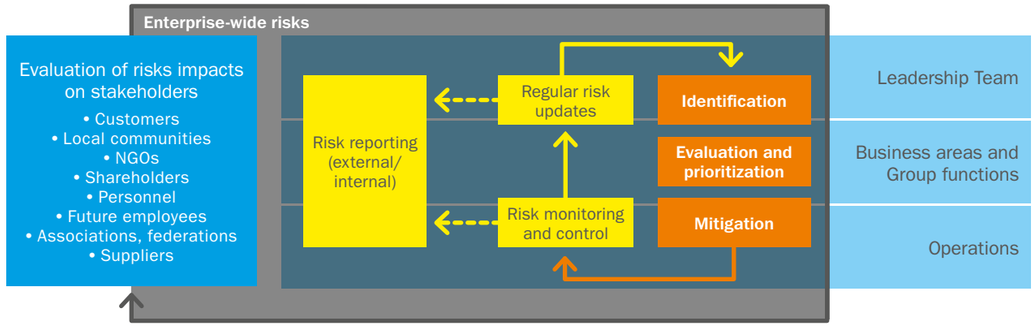
To expand appreciation of key risks within Outokumpu and to help in mitigating the effects of possible impacts on stakeholders, the Group also monitors potential risks from a corporate responsibility perspective. Sustainability-related issues including stakeholder dialog is an integral part of the Group's risk management process. This internal risk review process was conducted twice during 2014. In addition, the Group's risk management participates in the corporate responsibility team of Outokumpu. This secures efficient communication to both directions and strong presence of risk management perspective.

Impacts on stakeholders are reviewed as part of Outokumpu's risk management process. The evaluation process covers enterprise-wide risks at all organizational levels and includes assessments of the impact of key risks on Group stakeholders. The "Stakeholder perspective" diagram specifies key stakeholder groups and provides examples of the possible impact of different categories of risk on Outokumpu's operations.

Stakeholder perspective

KEY RISKS	STAKEHOLDERS	POSSIBLE IMPACTS
Strategic and business risks	Customers	Competition, emerging legislation or high input prices make less sustainable materials more feasible substitute to stainless steel and Outokumpu loses market share. Melt shop closures and more centralized supply chain lead to changes to service and deliveries.
	Investors and shareholders	
	Local communities	Impacts on shareholders, personnel and communities if Outokumpu is not able to achieve its financial targets, carry out integration and realize synergies and is therefore forced into actions such as reductions to the Group workforce, layoffs and reduced orders to suppliers.
	Personnel	
	Future employees	Outokumpu's reputation and attractiveness as employer at risk.
Operational risks	Customers	Inability to meet the deliveries on time, significant impacts both on customers and suppliers dependent on Outokumpu if Outokumpu's business and demand are deteriorated.
	Suppliers	
	Personnel	Major catastrophes and severe interruptions to Outokumpu's business may affect personnel, local communities and environment.
	Local communities	
	Associations, federations	Trade barriers or other obstacles for free trade would affect negatively on industry's actions within associations on the joint way towards more sustainable stainless.
Financial risks	NGOs	Risk of weakened transparency due to limited availability of resources in promoting environmental and social issues if Outokumpu can't achieve its financial targets.
	Customers	Impacts on shareholders and customers if Outokumpu is not able to achieve its financial targets due to decline in share price and inability to meet the customer deliveries.
	Investors and shareholders	

Key risks are evaluated for stakeholder impacts



Customers

Putting the customer first was the guiding principle with Outokumpu's 2014 focus. It is a promise embedded in our everyday operations. Outokumpu serves its customers – distributors, producers of consumer goods and manufacturers of various industrial applications alike – globally. Continuous feedback and interaction with customers help us to improve our understanding of their needs, the challenges they face and the business environment our customers operate in. Customer-orientation is a part of target-setting for each employee.

Outokumpu aims to build long-term relationships with its customers. After all, our vision of a 'world that lasts forever' can only be achieved through our customers' applications and solutions. Being a responsible business partner is a precondition for long term partnership. In all communication with its customers, Outokumpu is committed to marketing communications laws, standards and voluntary codes, such as commitment to accurate and truthful advertising. Outokumpu protects the personal data of its customers by ensuring that it is only collected, gathered, processed, used, and stored to the extent necessary for pre-determined and legitimate purposes and in compliance with applicable laws. Training in these practices are frequently held and their implementation is monitored. During 2014, Outokumpu has trained Group sales and technical customer service in the Code of Conduct and competition law. Also, during the fall, Group-wide sales training for sustainability and corporate responsibility was started; these trainings continue 2015.

During the year, Outokumpu continued to collect continuous, firsthand feedback from our customers. Outokumpu uses a qualified feedback system to collect and utilize customer insight in all our countries of operations. Every month, some 100–150 Outokumpu customers participate in an ongoing survey to give us feedback on how we have succeeded in meeting their needs. The data obtained through the system is analyzed and benchmarked to support us in various goals. Customers' feedback helps us to achieve our growth targets, and is used to enable continuous improvement of our performance, both on strategic and operational levels. Customer feedback is an active part of a sales person's daily work, with any drawbacks addressed without delay and improvement actions discussed with the customer. The overall aim is to have a mutually beneficial process that helps us improve and increase the satisfaction of our customers. Therefore, customer feedback plays a central role also in internal communications, and is always a topic in quarterly CEO calls for the top 200 executives. Outokumpu's customer satisfaction continued at the same level as in 2013, and continues to outperform that of our competitors.

Customer newsletters and face-to-face meetings at Outokumpu sites or customers' premises are conducted on a regular basis to ensure continuous interaction with customers. Outokumpu also publishes a customer magazine, 'Forever' three times a year. The magazine, printed in four languages, is posted to Outokumpu customers worldwide. In May, Outokumpu held a customer event in Degerfors, Sweden to mark the finalization of the EUR 100 million investment project at the quarto plate mill. In September, Outokumpu hosted two simultaneous events in Germany and China to demonstrate why stainless steel is increasingly used in demanding building, infrastructure and interior projects, bringing together customers, building experts and architects from various organizations to learn about stainless steel solutions, and to seize opportunities in networking between businesses.

In 2014, Outokumpu strengthened its capabilities for providing online product information. Outokumpu provides online tools with an optimal viewing experience also via tablet and other mobile devices, such as the renewed Stainless Steel Finder which help customers to browse our offering, and to choose the correct grade. After introducing a new pricing model for European markets, Outokumpu launched the daily and monthly alloy surcharges online service with the option of having custom reports delivered directly by email. This allows customers to react even faster to the changes in raw material

prices and to choose between different options in avoiding alloy risks and selecting the optimum alloy surcharge. Daily alloy surcharges are published daily at www.outokumpu.com. At the end of October, Outokumpu launched an online news hub that features customer cases, stories and the latest product information 'under one roof'.

For further product knowledge targeted for engineers, designers, materials specifiers and students, Outokumpu's earlier published handbooks, Welding Handbook, Corrosion Handbook and Handbook of Stainless Steel, supplement the online services.

Suppliers

Outokumpu's purchasing decisions are made solely based on Outokumpu Group's best interests, taking into account its Corporate Responsibility Policy's environmental, economic and social aspects. Suppliers will win Outokumpu business based on lowest total cost of product or service. Total cost means the total amount spent on a particular commitment, including, among other things, the initial contract price, life cycle cost of investment, effect on Outokumpu's production efficiency and quality, commission fees, as well as other transaction costs and taxes.

Raw material purchases are the largest item in Outokumpu's costs. In 2014, Outokumpu's delivery volumes were 3,485,000 tonnes, a comparable increase of 20.4% from the previous year, based on the management estimate for 2013 figures. The cost of goods and services fell by 1.9% from the previous year, mainly due to the synergies in procurement, compared to the comparable figure from the previous year based on management estimate.

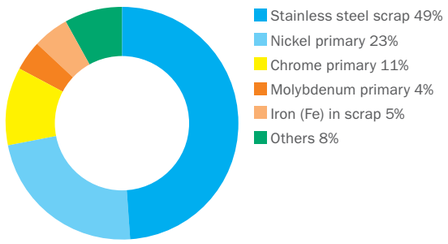
Primary raw materials – nickel, ferrochrome, recycled stainless and carbon steel – are purchased on the open market. Part of the ferrochrome is sourced internally from the Group's own chromium mine and ferrochrome operations. The investment to double ferrochrome production capability to 530,000 tonnes was ramped up in 2014.

Outokumpu regularly evaluates its suppliers from the sustainability point of view, highlighting the responsibility issues within society and local communities. The scope of the study was all raw material producers and strategic suppliers in general procurement. In the last round of evaluation, the coverage of all completed answers and evaluated companies was more than 90% of Outokumpu's total spending on materials and supplies to these companies.

The Outokumpu Code of Conduct, renewed in August 2014, is a tool for Outokumpu employees offering assistance to evaluate suppliers in different situations by setting examples and giving practical guidance. The Code of Conduct states that Outokumpu condemns all forms of corruption and complies with the anti-corruption treaties and laws of the countries in which it does business. Outokumpu expects its suppliers and contractors to act in accordance with the law and recommends that they perform according to Outokumpu's policies. It is the goal of Outokumpu that its business partners, subcontractors and suppliers become familiar with the Code of Conduct and Outokumpu's Corporate Responsibility Policy, and that they follow similar standards. Outokumpu is committed to marketing communications laws, standards and voluntary codes in communication with suppliers.

Read more about our sustainable supply chain on p. 35.

Raw material spend by category in 2014



Current and future employees

Both current and future employees are very important stakeholders for Outokumpu, their energy and commitment being a fundamental part of the Group's business.

Outokumpu's employees are the key building block in reaching commercial superiority. The steps taken to build the new culture after the integration with Inoxum in 2013 were driven forward in 2014. Outokumpu introduced Winning Behavior workshops at the end of 2013 to build up common understanding on the behaviors that bring us to success. Workshops continued throughout nearly the whole of 2014 in the units and almost 2,000 Outokumpu employees took part in them.

Outokumpu's long-term target is to be an employer of choice. During 2014, Outokumpu continued its long-term efforts to develop the Group's employer brand. In all countries with bigger plants, Outokumpu has co-operation with schools and universities, or plans to start strategic relationships. Social media is also an important means for future resourcing. In 2015, Outokumpu will redefine its employer value proposition in order to strengthen its employer brand, reputation and awareness level on the external candidate market.

Outokumpu has a long tradition of offering summer jobs and traineeships in its major production locations in Finland, Germany and Sweden. By this, Outokumpu aims to further build its employer brand, and offer an opportunity to students to become acquainted with Outokumpu as an employer and to learn about the job opportunities that Outokumpu offers. During the summer of 2014, the Group employed some 558 summer workers in Finland, mainly in Tornio, and approximately 210 in Sweden. Traineeships were offered particularly within Group services such as marketing and accounting. In Germany, Outokumpu offered internships for 46 students close to graduation as engineers, as well as technical and commercial apprenticeships in all its locations.

Wages and salaries by country

€ Million	**2014**	2013	2012
Finland	**161**	154	165
Sweden	**119**	118	141
The United Kingdom	**28**	28	29
Germany	**305**	260	10
Other Europe	**30**	31	38
North America	**104**	97	25
Asia and Oceania	**15**	17	10
Other countries	**4**	5	1
Total	**765**	711	419

Economic impact

Salary payments including pensions and other benefits paid by Outokumpu in 2014 increased compared to the previous year by some 8% to EUR 765 million (2013: EUR 711 million). Bonuses received by Group personnel in 2014 amounted to EUR 18 million (2013: EUR 40 million). The Group's incentive plans are primarily based on operational or financial targets and vary by country.

Investors and analysts

Outokumpu's regular and active dialog with capital markets continued globally in 2014. During the first half of the year, key topics discussed with investors and analysts were the comprehensive measures to strengthen the company's capital structure, including the divestiture of Terni remedy assets and the VDM business to ThyssenKrupp, as well as a financial plan to renew the company's debt portfolio that also included a rights issue. During the year, the focus shifted more towards the operational turnaround of Outokumpu including the Calvert ramp-up in Americas, EMEA restructuring and measures to improve cash flows and reduce debt levels. Furthermore, the nickel price development, as well as the reverse split of Outokumpu shares aroused interest in the capital markets during 2014.

Outokumpu met investors and analysts at various events throughout the year. The company organized the Annual General Meeting in April and two Extraordinary General Meetings in February and June.

In addition, the company hosted quarterly results webcasts for analysts, investors and the media. Outokumpu's representatives also attended seminars and conferences and organized 18 roadshows in Europe and in the US to meet investors. In addition, Outokumpu hosted a Capital Markets Day in Düsseldorf in September. Three site visits for analysts and institutional investors were arranged in 2014, one to the chrome mine in Kemi and the stainless steel plant in Tornio, Finland, one to the cold rolling mill in Krefeld, Germany, in connection with the Capital Markets Day, and one to the new stainless steel plant in Calvert, USA. A total of over 300 one-on-one meetings, conference calls and video conferences with investors were held during the year.

Read more about Outokumpu share and shareholders, Outokumpu's activities in the capital markets and stock exchange releases in 2014 in the Annual report in Shares and shareholders and Information for the investors on p. 115.

Local communities

Many Outokumpu production sites have a long and interesting history. For example, Sheffield, Degerfors, Avesta, Nyby (Eskilstuna) and Dahlerbrück sites have been an integral part of local society during many centuries. It is natural that existing company and a major employer is involved in local society and activities in many ways.

We are a major employer in for example in Avesta and Degerfors, in Sweden, in Sheffield in the UK, in Calvert and New Castle in the US and in the Kemi-Tornio region in Finland and in Dahlerbrück, Dillenburg and Krefeld in Germany. A continuing dialog is maintained with community officials and representatives, other commercial companies, and with schools and universities.

Outokumpu has new locations where we aim to implement our sustainability program and actively listen to local communities. Outokumpu's most significant impacts on local communities include direct and indirect employment as well as environmental and energy issues. These are also key topics in discussions with local community representatives. Emissions from the Group's plants are measured and strictly monitored, and effective corrective actions are taken if deviations from permitted limits occur. Both vigilance and a responsive attitude to issues that affect local communities and their concerns are important. For example, Tornio implemented a publicly available particle monitoring system in the Tornio-Haparanda area in order to openly disclose information online. The monitoring sequence was completed in 2014 and discontinued due to very low dust and particle concentrations.

In April, Outokumpu arranged a Girls' Day at the Krefeld and Dillenburg units. The aim of this yearly event is to give 14–16 year old girls interested in technical work a first insight to career possibilities in technical professions and the possibility to collect some practical experiences. The local initiative was inspired by the national yearly Girls' Day campaign established by the German government.

Cooperation with neighbors

Information exchange with neighbors and local community is very important related to activities. During 2014 especially in Germany, the United States and Finland we organized some meetings or cooperation with neighborhood due to various reasons. At Kemi mine and also in Tornio plant there was an open-doors event for neighbors. Based on feedback and participation both of these evenings were success. The production units received a lot of good and constructive feedback, as well as some good ideas how to reduce some environmental impacts to the surrounding community.

Outokumpu organizes, when needed together with local municipalities open forums and discussions with inhabitants and NGOs, in 2014 there were no large open discussion forums. One visit for Haparanda inhabitants was organized to Tornio plant.

In Germany, the permit for Marbach disposal site in Bochum Hamme created public concerns in 2013 and early 2014. To address the concerns, Outokumpu established a local voluntary advisory committee in Marbach for inhabitants to share information and views, including neighbors, NGOs and other interest groups. Plans regarding the closure of the Bochum melt shop calmed down the media and local discussion about the Marbach landfill. Now construction work and the use of the landfill continues as planned for the rest of the operation time of Bochum melt shop.

Due to slag yard dusting our new Calvert site in Alabama, US established meetings with local neighbors. The aim is to decrease the dusting during the coming months. One reason for dusting in certain weather and wind conditions is that the area and slag treatment operations are not yet ready and in full use.

As a large employer, decisions regarding the Group's operations have a major impact on communities; not only on Outokumpu personnel and their families, but also on local goods suppliers and service providers. The latest strategic investments in Calvert, US were completed and continue to have a positive impact on the surrounding districts: during 2014 some 100 new employees were hired. Other recent investments include the EUR 410 million investment in the expansion of the Group's ferrochrome production in Tornio, and the EUR 100 million to increase stainless quarto plate production capacity in Degerfors. The ferrochrome expansion resulted in around 120 permanent jobs in the Kemi-Tornio region.

The Group's Kemi mine collaborates with several educational schools like Lapland University of Applied Sciences in the training of engineers, miners, and supervisors. In Sheffield in the UK, apprenticeships have been offered to local colleges and student placements have been made available in the form of one-year programs. Outokumpu's employees have given presentations at local schools and universities and we have worked with local employment agencies to find positions for people within the Group. Schoolchildren and local students have been introduced to the Group's working environment through tours and discussions with employees.

Managing impacts on local communities

Traffic loads have an impact on local communities, with the Kemi-Tornio region and Sheffield being good examples. Our Tornio site has participated in the new railway connection project in northern Sweden "The North Bothnia Line" (Norrbotniabanan) which would mean an extension of the Bothnia Line north of Umeå to Luleå (270 km) and it would provide a new transport route for Tornio plant. The preliminary decision to build it has been made and detailed planning is ongoing including the choice of a route.

In Sheffield, Outokumpu is located very close to the UK's M1 motorway, and steps are taken to ensure that our operations have minimal impact on this primary transportation route. As the effects associated with the transportation of goods and raw materials can be major, the Group's general logistical arrangements are carefully planned to avoid road congestion and minimize impacts on other road users. In recent years, increased transportation of alloys by rail has had a positive impact in connection with road traffic densities.

In Sheffield, representatives of the local police force, fire and emergency services, and national health organizations have attended a number of health and safety days organized for Outokumpu's employees.

Local stakeholders are also taken into account in the Group's emergency planning.

Communication with employees on sites

Maintaining employee well-being is Outokumpu's aim, and productive dialogue is the key element in achieving this. Outokumpu's largest industrial sites have many similarities. In addition to regular meetings with personnel representatives, employees are met once or twice every year at special events. Daily operational meetings include reporting on health and safety and environmental issues. Actions to resolve these are usually taken immediately after completing a risk assessment. Management team members are encouraged to walk through Group facilities, including production plants, and to talk with employees engaged in manufacturing operations.

Production employees are represented by their unions in plant management discussions at Outokumpu Nirosta, Avesta and Sheffield. In Avesta, both formal and informal meetings are held at the plant level and on site on a regular basis. In the UK, trade union engagement at Outokumpu sites is active, with work on many issues, including health and safety, salaries, working hours, shift patterns, and other mutually beneficial issues, being conducted in close co-operation. Dialog between the management team and an employee forum, a cross-functional group, takes place monthly. The issues raised are debated and action plans instituted. Nominated safety and union representatives are able to engage in direct and open dialogue with members of the plant management team. In Tornio, individuals heading large departments are members of the management team and three personnel representatives are members of the board of Tornio steel plant.

Outokumpu's UK sites arrange open days for employees' relatives, helping them to become familiar with the locations where their family members work. Quarterly health and safety and well-being sessions are organized for employees and these incorporate the family-related aspects of their occupations. Close work with a local gym, which visits the Group's UK sites on a quarterly basis, reinforces well-being and fitness programs. At Avesta in Sweden, a recreation committee organizes a wide variety of events for both employees and their families, such as lectures and family days. Participation in sports such as biking, skiing, and swimming is sponsored. At Tornio in Finland, sporting events involving employees' children are organized in both the summer and winter. Personnel clubs, which reduce the costs associated with enjoying cultural and other events, are supported.

Investing in mental capital and well-being

In Finland a new service provider was chosen to provide occupational health care services for Outokumpu Espoo office. As one of the first steps an assessment was carried out with the target to identify resources and risks related to the working environment. Based on the findings an action plan was prepared including for example info sessions related to work ergonomics. The main principle in the Espoo office was to increase individuals' knowledge of the ways to manage their own well-being. The topics discussed covered different ways to build stress resilience, increase the ability to concentrate and use brains in a productive way. Special support was arranged for teams who had experienced a difficult restructuring and change process. During the ongoing IT outsourcing processes a special attention was put on communications to prevent uncertainty.

Well-being at work

Outokumpu provides its employees with a healthy and safe working environment. The health of the personnel and their well-being at work are important preconditions for Outokumpu's success in day-to-day operations as well as in its long-term competitiveness. At Outokumpu, it is the responsibility of the whole workforce to foster mental well-being and to increase occupational health and safety. Company management in particular has to set a good example by cultivating fairness and conducting open and interactive communications.

For these kind of purposes, our cold rolling unit in San Luis Potosí, Mexico, started a voluntary but famous competition for working teams to reduce their own individual weight of management and team members. Results have been good and helped to promote healthy life styles and positive attitudes at the work place.

In Tornio the "Good work – Longer career" project continued at Ferrochrome plants and a new survey was conducted in May. The results did not show improvement and the project team will evaluate the future of the project with the local employee representatives.

Associations and federations

Outokumpu is an active and responsible actor in society. As the global stainless steel producer, the Group's opinion is voiced in many forums. As committed to sustainability Outokumpu is a signatory to the International Chamber of Commerce (ICC) charter, follows and supports the United Nations Global Compact, and is an active member of the UN Global Compact Nordic Network. To demonstrate the Group's support for sustainability, Outokumpu has signed the Worldsteel Sustainable Development Charter and the ISSF's Sustainable Stainless Charter. Although countering bribery and corruption are clearly defined in the Group's publicly available Code of Conduct, participation in these networks is a way to promote progress throughout the whole business landscape, also outside the Group's own supply chain.

In 2014, Outokumpu experts and top management continued to maintain effective liaisons with numerous organizations. Top management participated in dialog concerning issues such as social well-being, the global financial situation, megatrends and the future of the stainless steel business. Mika Seitovirta, Outokumpu's CEO, was an active participant in the discussions, especially those regarding society's role in creating a competitive environment that can enhance development, knowledge, and investments. Within the Group, comprehension of approaches to social responsibility is expanded through active engagement with a variety of companies and organizations.

Outokumpu is a member of international organizations and confederations, including the World Economic Forum, International Chamber of Commerce (ICC), International Stainless Steel Forum (ISSF), the International Chromium Development Association, Eurofer, EuroAlliage and EuroSlag,

Outokumpu is also an associate member of the World Steel Association (Worldsteel). Outokumpu provides relevant information to decision-makers and experts relating to the development of the business environment and legislation. The Group participates in the work of trade organizations. Outokumpu does not pressure or use hard lobbying on decision-makers. As a member of Eurofer, Worldsteel and ISSF, Outokumpu participates in different policy groups whose aim is to provide expertise and help decision-makers in connection with issues such as the global mitigation of greenhouse gas emissions by the iron and steel industry. In these forums, members share best practices and obtain benchmark data relating to, among other things, the environment, R&D, product life cycles, product and chemical safety, and occupational safety. Members also contribute their own data for use in official industry or authority reports, such as the World Steel Association Sustainability report.

In Europe, Outokumpu is a member of several federations and associations in Germany, Sweden, Finland, France, Italy, the Netherlands, and the UK. National cooperation organizations advance industry views and contribute to legislation in Europe through national representatives in EU governing bodies. Outokumpu is also a member of business associations in North America and Australia.

In 2014, Outokumpu experts and top management continued to maintain effective liaisons with numerous organizations.

Eurofer and EuroSlag are collaborative organizations within the European iron and steel industry. Outokumpu contributes to Eurofer's commercial and trade issues at the presidency level, in committees which handle statistics, research and the environment, and in working groups which focus on issues such as climate change, air quality, water, and waste. Eurofer conveys opinions to EU governing bodies (the European Commission, the European Parliament, and the European Council), and promotes measures such as the implementation of the Integrated Pollution Prevention and Control IED Directive, the implementation of REACH (the Registration, Evaluation and Authorization of Chemicals), and continuation of the European Emissions Trading Scheme (EU ETS). EuroSlag performs a similar role in issues related to slag and by-products.

Outokumpu is also active in corporate responsibility networks. To develop our expertise in corporate responsibility and improve Group performance, Outokumpu belongs to both the Finnish Business & Society company network and CSR Europe. To combat corruption and bribery, the Group participates in Transparency Finland, a national chapter of Transparency International.

External R&D collaboration

Outokumpu has an extensive network of external R&D partners and participates in both national and international research programs. Outokumpu is a member of the European Steel Technology Platform (ESTEP). Examples of research programs in which Outokumpu is participating include the Finnish Mechanical and Engineering Competence Cluster (FIMECC), Research Fund for Coal and Steel (RFCS) and Jernkontoret (the Swedish Steel Producers' Association). In Germany, we are collaborating with various universities and research institutes, among others with the Fraunhofer Institute and the Max-Planck-Institut für Eisenforschung.

Launch of two new extensive 5-year research programs coordinated by FIMECC and funded by TEKES (the Finnish Funding Agency for Innovation) was one of the main actions related to our external R&D networks in 2014. In FIMECC SIMP (System Integrated Metal Processes) program, a global unique grouping of leading metal industry companies have come together to further increase its global competitiveness by integrating digitalization and sustainability in metallurgical processes in a system integrated manner. FIMECC BSA (Breakthrough Steels and Applications) program focuses on development of new generations of sustainable steels and their future applications.

Public sector, sponsoring and NGOs

Outokumpu contributes to the well-being of local, national, and international communities through tax payments, through direct and indirect employment, and by participating in other societal activities.

In 2014, taxes and social security contributions paid by the Group totaled EUR 106 million (2013: EUR 98 million). In 2014, Outokumpu posted a loss and thus also the amount of taxes paid remained low, some EUR 17 million for the financial year (2013: EUR 4 million). The impact of taxes on societal well-being is both direct and indirect.

Taxes and social dues by country

€ Million	**2014**	2013	2012
Finland	**8**	8	8
Sweden	**22**	23	31
The United Kingdom	**4**	3	3
Germany	**40**	41	2
Other Europe	**9**	9	11
North America	**18**	11	1
Asia and Oceania	**4**	2	1
Other countries	**1**	1	0
Total	**106**	98	57

Public sector support received

In 2014, Outokumpu received some EUR 0.8 million (2013: EUR 0.6 million) from the public sector to support Group research and development of new technologies, products, and applications.

Grants and community support given

Traditionally Outokumpu's units have supported the local community in many ways even during harsh times. In Germany, Sweden, the UK and Finland the local cooperation with schools and universities is typical at every production site. For instance in April 2014 the certificate awards ceremony for 71 trainees of the Outokumpu German units were taking place at a local Montessori School. For example the company gave permanent contracts to 30 graduates and all others got a quote for a one year fixed-term employment.

Outokumpu supports higher education and research by donating funds to universities. In 2013, the co-operation with Aalto University, Finland a new multidisciplinary science and art community, proceeded in the fields of science, economics, art, and design. Outokumpu has supported Aalto University from the establishment of the institution, including an initial fund donation of EUR 1 million.

Co-operation with Aalto University offers Outokumpu the chance to harness top-level know-how and a multidisciplinary approach. Aalto's core research fields – materials research and design – will round out Outokumpu's in-house R&D, offering new opportunities for innovation and exchanging know-how.

Social sponsorship of units continued also: traditionally Outokumpu has been the main sponsor in local football and some other sport clubs in Avesta and Degerfors (Sweden) and in Tornio (Finland), also in 2014. Outokumpu in Krefeld, Germany supported the STUPS children's centre of the Red Cross and cooperation with a local school Kurt-Tucholsky-Gesamtschule continued related to care system with a local retirement home. In Finland Tornio plant sponsored the children visits from kindergartens to the local art museum. In Germany Outokumpu donated new communion chalices to the St. Markus Church of Fischeln. In Degerfors, Sweden the company sponsored railings for the new community fire station.

In Turku, Finland Outokumpu donated material for the statue made by famous artist Stefan Lindfors. The statue is made for donations of the saving of Baltic Sea. In Avesta, Sweden Outokumpu sponsors own art club Visentkonst.

Outokumpu is one of the founders of the Technology Industries of Finland Centennial Foundation Fund for the Association of Finnish Steel and Metal Producers, established by five Finnish steel and metal producing companies. The fund was founded to promote university-level research and teaching of technology and business opportunities in metals production. In 2014, the fund awarded grants of some EUR 0.3 million.

For example Outokumpu has participated in the research project Metric under the FIMECC consortium and one of the project outcomes in 2014 was a thesis studying industrial investments in a sustainability framework. This new approach aimed to quantify investment and changes to the industrial set up from social, economic and environmental dimensions in one model. This type of open attitude towards harnessing of new ideas describes Outokumpu's open innovation management approach very well.

Sponsoring

As defined in Outokumpu's sponsorship policy, the Group's sponsorship decisions are based on clearly defined pre-conditions of strategic, brand image, and sustainability criteria. Outokumpu also makes discretionary donations for the common good as a responsible corporate citizen. These donations are organized by sustainability management and approved by the Leadership Team or by the Board of Directors.

Total grants and community support in 2014 amounted to some EUR 0.4 million.

Outokumpu does not take part in or otherwise support political activities, whether they are local, communal, or national. Outokumpu does not make donations to any political parties or groups.

Dialogue with environmental NGOs

In 2014, Outokumpu operated with a significantly expanded global presence, which required us to operate with new NGO counterparties. Outokumpu had conducted NGO mapping in 2013 in order to identify new NGOs and to review the existing NGOs. The study concentrated into the impactfulness, size and regional presence of NGOs against pre-defined material sustainability issues and regions and countries of Groups operations. This study served as starting point for stakeholder dialog in the context of the new Outokumpu 2014 and is one reference group for the next update of Outokumpu materiality analysis, planned for 2015.

In addition, Outokumpu continued its dialog with environmental NGOs as a standard process. Issues that were discussed included the role of steel recycling and sustainable stainless steel in tackling the major challenges that we face as a mankind; climate change, resource and energy scarcity together with urbanization and population growth. As a result, Outokumpu aims to increase further the transparency and information related to these issues and our products' sustainability properties.

Outokumpu has supported Aalto University from the establishment of the institution, including an initial fund donation of EUR 1 million.

The year 2015 will mark 40 years since the first environmental report of Outokumpu was published in 1975.

Reporting on sustainable development

Outokumpu produces stainless steel, a sustainable material, by using a sustainable production chain in a responsible manner.

The Group's corporate responsibility principles cover all aspects of Outokumpu's operations and strategy and are also integrated into the way that we conduct our business. Outokumpu aims for open and transparent communications. Outokumpu's reporting reflects the view that all of the Group's operations – and our dialog with stakeholders – must be based on ethical and sustainable business practices, since these provide the basis for our long-term competitiveness.

The year 2015 will mark 40 years since the first environmental report of Outokumpu was published in 1975. Since 2003 Group has published external sustainability report covering social, economic and environmental dimension annually. These reports are available in digital form at Outokumpu Sustainability web pages.

The report presents the Group's relevant and material sustainability issues. Issues on Sustainable development and Corporate responsibility requirements are reported openly and transparently following the Global Reporting Initiative (GRI) G3 guidelines.

This sustainability reporting has been assured by an external assurance provider. This report includes a separate GRI and UN Global Compact reporting index, where all the indicators regarding responsibility practices are listed together with links to the pages on which they are addressed.

Outokumpu's Annual report also meets other requirements within sustainability reporting. Outokumpu decided to adopt the ISO 26 000 "Guidance on social responsibility" standard. This is the second report in which we have the ISO 26 000 core subjects and issues comparison table together with GRI reporting index.

The Group is a signatory to the UN Global Compact. Outokumpu also follows International Chamber of Commerce policies by utilizing ISO-based management systems in connection with issues relating to Environment, Health and Safety and Quality management. Read more about the Group's social responsibility on p. 39.

The Group has also signed the Sustainable Development Charter published by the World Steel Association and the International Stainless Steel Forum. Together with the Group's internal policies and practices these frameworks have requirements for external reporting, which have been taken into account in this Sustainability report.

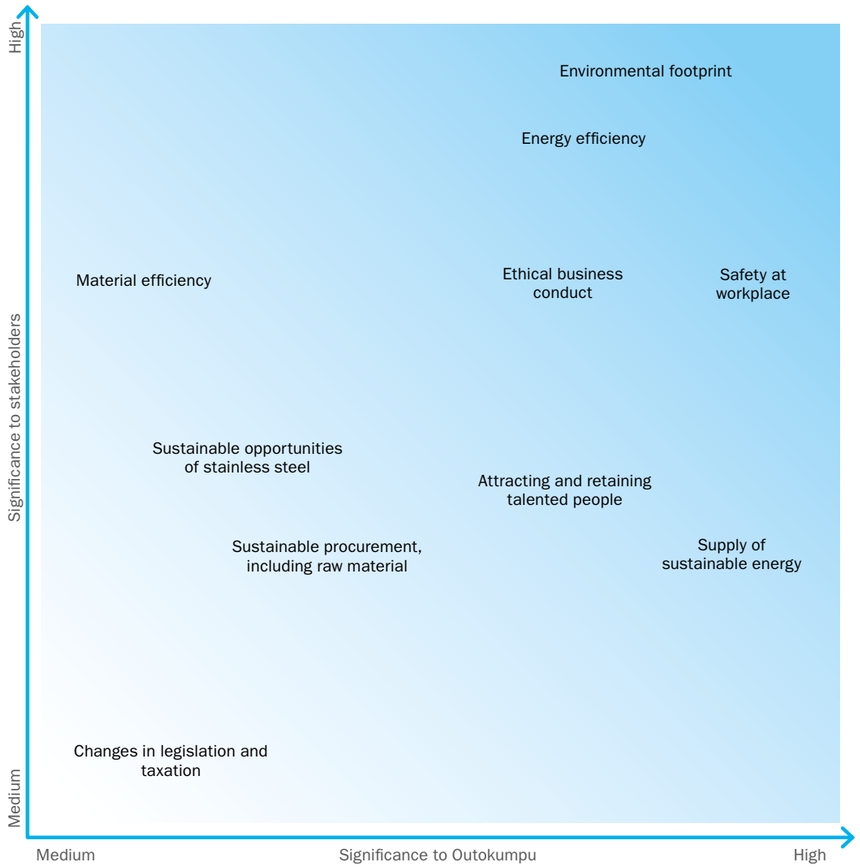
Focus on material issues

To ensure that limited resources are allocated in the most efficient manner, Outokumpu analyzed the most material sustainability issues. The results of this analysis, which identified the internal and external issues most relevant to the Group, formed a natural basis for sustainability-related actions and developments in 2014.

The results of the materiality analysis, issues with high significance for both Outokumpu and the Group's stakeholders, were mostly those which have been on Outokumpu's sustainability agenda in previous years. This confirms that we are working with the correct issues and that further improvements are still needed. The analysis process has helped the Group to initiate new actions and programs in an optimal manner. During 2014, Outokumpu took action in connection with all issues identified as having a material significance and related developments are detailed in this report.

The Outokumpu Board of Directors reviewed the sustainability analysis and related actions and reviewed and approved the updated ethical statement of the Group at its December 2014 meeting. According to the Group policy on sustainable development and corporate responsibility, the Board of Directors monitors Outokumpu's corporate responsibility performance at least once each year based on a report submitted by the CEO. This arrangement ensures that sustainability issues are an integral element in Outokumpu operations from the lowest to the highest levels.

Focus on material issues



GRI and UN Global Compact

We have self-declared our reporting to be Application Level B+ of the GRI G3 Guidelines. PricewaterhouseCoopers Oy has checked our reporting and has confirmed it to be Application Level B+.

GRI profile disclosures		INCL.	Annual report/Sustainability report section 2014	Global Compact	ISO 26 000	Comment
1.	**Strategy and Analysis**					
1.1	CEO's statement	Yes	CEO's foreword (SR p. 1)		6.2	
1.2	Key impacts, risks and opportunities	Yes	Our impact on the environment (SR p. 13), Risks and stakeholders (SR p. 50–51), Climate change risks (SR p. 26–28), Focus on material issues (SR p. 62), Environmental goals and results (SR p. 14–15), Goals and results (SR p. 43)		6.2	
2.	**Organizational Profile**				6.2	
2.1	Name of the organization	Yes	SR p. 71		6.2.1–6.2.3	
2.2	Primary brands, products and services	Yes	Corporate information (AR p. 39)		6.2.1	
2.3	Operational structure	Yes	Corporate governance statement (AR p. 102)		6.2.1	
2.4	Location of organization's headquarters	Yes	SR p. 71		6.2	
2.5	Number of countries and location of operations	Yes	Market environment (AR p. 4)		6.2	
2.6	Nature of ownership and legal form	Yes	Corporate information (AR p. 39)		6.2	
2.7	Markets served	Yes	Market environment (AR p. 4–5)		6.7.1	
2.8	Scale of the reporting organization	Yes	Key figures (AR p. 2), Corporate information (AR p. 39)		6.2	
2.9	Significant changes regarding size, structure or ownership	Yes	Review by the Board of Directors (AR p. 16)		6.2	
2.10	Awards received in the reporting period	Yes	Highlights 2014 (SR p. 3)		6.2	
3.	**Report Parameters**					
3.1	Reporting period	Yes	Reporting principles (SR p. 68)			
3.2	Date of most recent report	Yes	Reporting principles (SR p. 68)			
3.3	Reporting cycle	Yes	Reporting principles (SR p. 68)			
3.4	Contact point for questions regarding the report	Yes	Reporting principles (SR p. 68)			
3.5	Process for defining report content	Yes	Focus on material issues (SR p. 62), Reporting principles (SR p. 68)			
3.6	Boundary of the report	Yes	Reporting principles (SR p. 68)			
3.7	Limitations on the report's scope or boundary	Yes	Reporting principles (SR p. 68)			
3.8	Basis for reporting subsidiaries and joint ventures	Yes	Reporting principles (SR p. 68)			
3.9	Data measurement techniques and bases of calculations	Yes	Reporting principles (SR p. 68–69)			
3.10	Explanation of re-statements	Yes	Reporting principles (SR p. 68)			
3.11	Significant changes from previous reporting periods in the scope, boundary or measurem. methods	Yes	Reporting principles (SR p. 68–69)			
3.12	GRI content index	Yes	GRI and UN global compact (SR p. 63–67)			
3.13	Assurance policy and practice	Yes	Reporting principles (SR p. 68), Independent Assurance Report (SR p. 70)		7.5.3	
4.	**Governance, Commitments and Engagement**					
Governance						
4.1	Governance structure of the organization	Yes	Corporate governance statement (AR p. 103–104)		6.2	
4.2	Position of the Chairman of the Board	Yes	Board of Directors on Dec 31, 2014 (AR p. 14)		6.2	
4.3	Independence of the Board members	Yes	Board of Directors on Dec 31, 2014 (AR p. 14–15)		6.2	

GRI profile disclosures		INCL.	Annual report/Sustainability report section 2014	Global Compact	ISO 26 000	Comment
4.4	Mechanism for shareholder and employee consultation	Yes	Corporate governance statement (AR p. 102–104), Communication and cooperation (SR p. 46)		6.2	
4.5	Executive compensation and linkage to organization's performance	Yes	Corporate governance statement (AR p. 105–106)		6.2	
4.6	Processes for avoiding conflicts of interest	Yes	Corporate governance statement (AR p. 103)		6.2	
4.7	Executive compensation and linkage to organization's performance	Yes	Corporate governance statement (AR p. 104–105)		6.2	
4.8	Implementation of mission and values statements, code of conduct and other principles	Yes	CEO's foreword (SR p. 1), Compliance (SR p. 45)		6.2	
4.9	Procedures of the Board for overseeing management of sustainab. perform., incl. risk management	Yes	Focus on material issues (SR p. 62)		6.2	
4.10	Processes for evaluating the Board's performance	Yes	Corporate governance statement (AR p. 103)		6.2	
Commitments to External Initiatives						
4.11	Addressing precautionary approach	Yes	Risk management (AR p. 110), Climate change risks (SR p. 26–28)	7	6.5	
4.12	Voluntary charters and other initiatives	Yes	Associations and federations (SR p. 56)			
4.13	Memberships in associations	Yes	Associations and federations (SR p. 56–57)			
Stakeholder Engagement						
4.14	List of stakeholder groups	Yes	Risks and stakeholders (SR p. 50)		6.8	
4.15	Identification and selection of stakeholders	Yes	Risks and stakeholders (SR p. 50)		6.8	
4.16	Approaches to stakeholder engagement	Yes	Outokumpu and society (SR p. 50–59)		6.8	Approaches to stakeholder engagement are presented under the sections describing various stakeholders.
4.17	Key topics raised through stakeholder engagement	Yes	Communication and cooperation (SR p. 46), Investors and analysts (SR p. 53), Local communities (SR p. 54)		6.8	

5.	Management Approach and Performance Indicators					
Management approach to economic responsibility		Yes	Review by the Board of Directors 2013 (AR p. 16), CEO's review (AR p. 1), Risk management (AR p. 111–114)	1, 4, 6, 7	6.2	
Management approact to environmental responsibility		Yes	Environmental goals and results (SR p. 14–16), Highlights 2014 (SR p. 3), Focus on material issues (SR p. 62), Energy efficiency (SR p. 22), Climate change (SR. P. 26–28)	7, 8, 9	6.5	
Management approach to labor practices and decent work		Yes	Goals and results (SR p. 43), Highlights 2014 (SR p. 3), Our people (SR p. 39), Operational risks (AR p. 113–114), Training and development (SR p. 44)	1, 3, 6	6.4	
Management approach to human rights		Yes	Goals and results (SR p. 43), Our people (SR p. 39), Corporate Governance statement (AR p. 109), Highlights 2014 (SR p. 3), Diversity and equal rights (SR p. 45), Risk management (AR p. 113–114)		6.3	
Management approach to society		Yes	Local communities (SR p. 54–56), Corporate Governance statement (AR p. 109), Risk Management (AR p. 112–114), Highlights 2014 (SR p. 3)		6.8	
Management approach to product responsibility		Yes	Corporate Governance statement (AR p. 109), Risk Management (AR p. 112–114), Highlights 2014 (SR p. 3), Customers (SR p. 51–52), Product perspective (SR p. 8)		6.7	
Economic Performance Indicators						
Economic Performance						
EC1*	Direct economic value generated and distributed	Partly	Outokumpu and society (SR p. 48), Public sector, sponsoring and NGOs (SR p. 56)		6,8	
EC2*	Risks and opportunities due to climate change	Yes	Climate change risks (SR p. 26–28)	7	6.8	
EC3*	Coverage of defined benefit plan obligations	Partly	25. Employee benefit obligations (AR p. 80–81)		6.4	

GRI profile disclosures		INCL.	Annual report/Sustainability report section 2014	Global Compact	ISO 26 000	Comment
EC4*	Significant subsidies received from government	Yes	Public sector, sponsoring and NGOs (SR p. 58), Shares and shareholders (AR p. 27)		6.8	
Market presence						
EC5	Entry level wage compared to minimum wage	No		1		
EC6*	Spending on local suppliers	No				
EC7*	Local hiring	No		6		
Indirect Economic Impacts						
EC8*	Infrastructure investments provided for public benefit	No				
EC9	Significant indirect economic impacts	Yes	Local communities (SR p. 54–55)			
Environmental Performance Indicators						
Materials						
EN1*	Materials used by weight or volume	Yes	Material balance (SR p. 21)	8	6.5	
EN2*	Recycled materials used	Yes	Product perspective (SR p. 8), Material balance (SR p. 21)	8, 9	6.5	
Energy						
EN3*	Direct energy consumption	Yes	Material balance (SR p. 21), Energy efficiency (SR p. 22)	8	6.5	
EN4*	Indirect energy consumption	Partly	Material balance (SR p. 21), Energy efficiency (SR p. 22)	8	6.5	
EN5	Energy saved due to conservation and efficiency improvements	Yes	Energy efficiency (SR p. 22, 24)	8, 9	6.5	
EN6	Initiatives to provide energy-efficient or renewable energy based products and services	Partly	Energy efficiency (SR p. 22)	8	6.5	
EN7	Initiatives to reduce indirect energy consumption	Partly	Sustainable supply chain (SR p. 36)	8	6.6.6	
Water						
EN8*	Total water withdrawal	Yes	Water (SR p. 32)	8	6.5	
EN9	Water sources significantly affected by withdrawal of water	Yes	Water (SR p. 32)	8	6.5	
EN10	Percentage and total volume of water recycled and reused	Partly	Water (SR p. 32)	8, 9	6.5	
Biodiversity						
EN11*	Location and size of land holdings in areas of high biodiversity	Yes	Biodiversity (SR p. 33)	8	6.5	
EN12*	Description of significant impact of activities, products, and services on biodiversity	Yes	Biodiversity (SR p. 33)	8	6.5	
EN13	Habitats protected or restored	Partly	Biodiversity (SR p. 33)	8	6.5	
EN14	Managing impacts on biodiversity	Yes	Biodiversity (SR p. 33–35)	8	6.5	
EN15	Species with extinction risk with habitats in areas affected by operations	Yes	Biodiversity (SR p. 33)	8	6.5	
Emissions, Effluents and Waste						
EN16*	Total direct and indirect greenhouse gas emissions	Yes	Material balance (SR p. 21)	8	6.5	
EN17*	Other relevant indirect greenhouse gas emissions	Yes	Climate change (SR p. 25)	8	6.5	
EN18	Initiatives to reduce greenhouse gas emissions	Yes	Climate change (SR p. 25–26), Environmental goals and results (SR p. 14–15)	7, 8, 9	6.5	
EN19*	Emissions of ozone-depleting substances	Yes	Material balance (SR p. 21)	8	6.5	
EN20*	NOx, SOx, and other significant air emissions	Yes	Material balance (SR p. 21), Emissions, effluents and waste (SR p. 29–30)	8	6.5	
EN21*	Total water discharge	Yes	Water (SR p. 32)	8	6.5	
EN22*	Total amount of waste	Yes	Material balance (SR p. 21)	8	6.5	
EN23*	Significant spills	Yes		8	6.5	No significant spills during the reporting period.
EN24	Transported, imported, exported, or treated hazardous waste	Partly	Materials efficiency (SR p. 20)	8	6.5	
EN25	Water bodies and habitats affected by discharges of water	Partly	Water (SR p. 32)	8	6.5	

GRI profile disclosures		INCL.	Annual report/Sustainability report section 2014	Global Compact	ISO 26 000	Comment
Products and Services						
EN26*	Mitigating environmental impacts of products and services	Yes	Environmental goals & results (SR p. 14–15), Materials efficiency (SR p. 19–20)	7, 8, 9	6.5	
EN27*	Reclaimable products and reuse	No		8, 9	6.5	
Compliance						
EN28*	Significant fines and sanctions for non-compliance with environmental regulations	Yes	Our impact on the environment (SR p. 18)	8	6.5	
Transport						
EN29	Environmental impacts of transportation	Yes	Sustainable supply chain (SR p. 36)	8	6.5	
Overall						
EN30	Total environmental protection expenditures and investments	Yes	Environmental investments and expenditures (SR p. 36–37)	7, 8, 9	6.5	
Social Performance Indicators						
Labor Practices and Decent Work						
Employment						
LA1*	Total workforce by employment type, employment contract and region	Yes	Our people (SR p. 40–41)		6.4	
LA2*	Total number and rate of employee turnover	Partly	Our people (SR p. 40)	6	6.4	
LA3	Employee benefits	No				
Labor/Management Relations						
LA4*	Coverage of collective bargaining agreements	Yes	Diversity and equal rights (SR p. 45)			
LA5*	Minimum notice period regarding operational changes	No		1, 3	6.3, 6.4	
Occupational Health and Safety				3	6.4	
LA6	Representation in joint health and safety committees	Partly	Local communities (SR p. 55)			
LA7*	Rates of injury, occupational diseases, lost days, fatalities and absenteeism	Yes	Safe working environment (SR p. 46–47)	1	6.4	
LA8*	Education and prevention programmes regarding serious diseases	Partly	Local communities (SR p. 55–56)	1	6.4	
LA9	Health and safety topics covered in formal agreements with trade unions	No		1	6.4	
Training and Education				1		
LA10*	Average training hours per year	No			6.4	
LA11	Programmes for skills management and lifelong learning	Yes	Training and development (SR p. 44–45)		6.4	
LA12	Employees receiving regular performance and career development reviews	No	Performance management (SR p. 43)		6.4	
Diversity and Equal Opportunity						
LA13*	Composition of governance bodies and breakdown of employees	Yes	Personnel in numbers (SR p. 40–41), Diversity and equal rights (SR p. 45)	1, 6	6.4	
LA14*	Ratio of basic salary of men to women by employee category	No		1, 6		
Human Rights						
HR1*	Investment agreements with human rights clauses or that have undergone human rights screening	No		1–2, 4–6		
HR2*	Suppliers and contractors that have undergone human rights screening	Partly	Sustainable supply chain (SR p. 35)	1–2, 4–6	6.6	
HR3	Human rights related training for employees	No		4, 5		
HR4*	Incidents of discrimination and actions taken	Yes	Internal Audit (AR p. 109)	1, 2, 6	6.4	
HR5*	Supporting right to freedom of association and collective bargaining in risk areas	Yes	Diversity and equal rights (SR p. 45)	1, 2, 3	6.4	No major risks were identified during the audits of units or systems.
HR6*	Measures taken to eliminate child labour in risk areas	Yes	Diversity and equal rights (SR p. 40)	1, 2, 5	6.4	No major risks were identified during the audits of units or systems.

GRI profile disclosures		INCL.	Annual report/Sustainability report section 2014	Global Compact	ISO 26 000	Comment
HR7*	Measures taken to eliminate forced labour in risk areas	Yes	Diversity and equal rights (SR p. 40)	1, 2, 4	6.4	No major risks were identified during the audits of units or systems.
HR8	Human rights related training for security personnel	No		1, 2		
HR9	Incidents involving rights of indigenous people and actions taken	No		1, 2		
Society						
Community						
SO1*	Managing impacts of operations on communities - also issues of Mining and Metals supplement notes	Partly	Local communities (SR p. 54–55)		6.8	
Corruption						
SO2*	Business units analyzed for corruption risks	Partly	Internal Audit (AR p. 109)	10	6.6, 6.2	
SO3*	Anti-corruption training	No		10		
SO4*	Actions taken in response to incidents of corruption	No		10		
Public Policy						
SO5*	Public policy positions and participation in public policy development and lobbying	Yes	Associations and federations (SR p. 56–57)	10	6.6, 6.8	
SO6	Contributions to political parties and related institutions	Yes	Public sector, sponsoring and NGOs (SR p. 58)	10	6.8	
SO7	Legal actions for anti-competitive behaviour, anti-trust, and monopoly	Yes	Review by the board of directors (AR p. 26)	10	6.8	
Compliance						
SO8*	Fines and sanctions for non-compliance with laws and regulations	No			6.6	
Product Responsibility						
Customer Health and Safety						
PR1*	Assessment of health and safety impacts of products	No		1	6.7	
PR2	Non-compliance with regulations concerning health and safety impacts of products	No		1		
Product and Service Labeling						
PR3*	Product information required by procedures	Partly	Product Perspective (SR p. 8)	8	6.7	
PR4	Non-compliance with regulations concerning product information and labelling	No		8	6.7	
PR5	Customer satisfaction	Yes	Customers (SR p. 51)		6.7	
Marketing Communications						
PR6*	Adherence to marketing communications laws, standards and voluntary codes	No				
PR7	Non-compliance with marketing communications regulations and voluntary codes	No				
Customer Privacy						
PR8	Complaints regarding breaches of customer privacy	No		1		
Compliance						
PR9*	Fines for non-compliance concerning the provision and use of products and services	No				
Mining and Metals supplement						
MM4	Number of strikes and lock-outs exceeding one week's duration, by country.	Partly	Diversity and equal rights (SR p. 45)		6.3	
MM11	Programs and progress relating to materials stewardship	Yes	A world that lasts forever (SR p. 4–5), Product Perspective (SR p. 8), Local communities (SR p. 54–55		6.7	

* GRI Core indicator

Reporting principles

In Outokumpu's reporting, the goal is to support open dialogue between the Group and its stakeholders. Our aim is to address the needs of current and future personnel, shareholders, customers, and other parties who have an interest in Outokumpu and its business operations.

We use reporting as an opportunity to illustrate what Outokumpu has done to ensure that the Group's business operations are sustainable, and to indicate actions we expect to take in the future to enhance individual well-being and the natural environment. Outokumpu has a long history of responsible business practices and we are working to make our operations more sustainable. As well as reporting on matters we consider important and relevant to our business operations, we also cover current global themes, which affect the Group's operations and our stakeholders.

If you have questions regarding the content of this report, please contact Outokumpu communications (corporate.comms@outokumpu.com).

Scope of the report

Major acquisition of the Inoxum took place on December 28, 2012. Outokumpu as a combined entity started its operation in December 29, 2012. On November 30, 2013, Outokumpu announced the divestment of Terni assets, VDM business and certain service centers which have been classified as discontinued operations in the financial statements for 2013. Outokumpu has completed the divestment of the Terni remedy assets, certain service centers and the VDM-business at the end of February 2014. Sustainability reporting for 2014 is based on the continuing operations of Outokumpu, these before mentioned divested assets are not included into 2014 figures.

Outokumpu's Sustainability report is published annually, and the reporting period is the same as the Group's financial reporting period (one calendar year). This report for 2014 was published on March 4, 2015 together with the 2014 Outokumpu Annual report. The previous report for 2013 was published on March 6, 2014.

For 2014, the Group's Sustainability report has been published as a stand-alone report.

Since 2004, Outokumpu's reporting has been based on guidelines provided in the widely-recognized and applied Global Reporting Initiative (GRI) G3 guidelines from 2007, but the reporting format now used by Outokumpu does not follow the tripartite division into economic, social, and environmental responsibility suggested by GRI.

A comparison of Outokumpu's reporting against the GRI G3 Guidelines and the 10 principles of the UN Global Compact together with ISO 26 000 core issues can be found on the GRI and UN Global Compact section.

Comparability of statistics

Corrections made to figures reported in previous years are indicated in conjunction with the corrected figures. Since 2007, Outokumpu's annual Sustainability reports have included an assurance report submitted by independent assurance providers. This independent assurance report is available on p. 70. Figures in the financial statements under the section Financials in the Annual report 2014 have been audited.

Measurement techniques

Economic responsibility

Most figures relating to economic responsibility presented in this report are based on consolidated financial statements issued by the Outokumpu Group and collected through Outokumpu's internal consolidation system. Financial data has been prepared in accordance with International Financial Reporting Standards (IFRS). Outokumpu's accounting principles for the Group's consolidated accounts are available in Note 2 to the consolidated financial statements.

The economic responsibility measures presented in the report for 2014 are comparable to those of 2013 but not to those of 2012 due to Outokumpu's acquisition of Inoxum, the stainless steel business of ThyssenKrupp in December 2012. As all measures are based on Group's consolidated financial information, only 2013 and 2014 include the effect of Inoxum, whereas 2012 is presented as Outokumpu stand-alone.

All financial figures presented have been rounded, and consequently the sum of individual figures may deviate from the presented aggregate figure. Key figures have been calculated using exact figures.

Using the GRI guidelines as a basis, economic responsibility figures have been calculated as follows:

GENERATION OF VALUE ADDED

Sales invoiced to customers during the financial year are used when calculating the generation of value added. Discounts or indirect taxes are deducted from sales figures.

The cost of goods and services purchased by Outokumpu during the financial year is deducted from sales when calculating the generation of value added by the Group.

DISTRIBUTION OF VALUE ADDED

Value added which is distributed to employees consists of wages and salaries paid to Outokumpu employees during the financial year. Pension payments and related accruals are included in this figure. The distribution of value added to the public sector includes taxes, social charges, and other payments which resemble taxes. No deferred taxes are included in this figure.

To determine creditors' share of value added, interest costs on debt booked during the financial year are presented. Capitalized interest is deducted from this figure.

The distribution of value added to shareholders is the total dividend which Outokumpu's Board of Directors proposes for distribution to shareholders from the parent company's distributable funds.

Environmental responsibility

Financial information related to environmental investments is collected in accordance with Group-wide unified guidance following principles outlined by the GRI and the World Steel Association.

Environmental data concerning Outokumpu operations is aggregated using the Group's Energy and Environment Reporting System, into which Group guidance has been integrated.

Environmental data is including and reporting covers Outokumpu stainless steel, ferrochrome and mining operations of the continuing operations of the combined Group. The environmental data from operating year 2012 and before has been adjusted to include combined operations, unless otherwise stated. The baseline data from 2007–2009, used as basis for long-term targets, has also been restated to include the combined data. The target set in Outokumpu energy and low-carbon program, the carbon profile, calculated per tonne of stainless steel produced. The figure for monitoring progress is a three-year moving average that is compared to baseline figures from the period 2007–2009. Since the production level changes due to cyclical nature of our industry, has Outokumpu decided to follow long term target against three year average as baseline, versus one historical year. And similarly also follow the progress as a moving three year average.

The transportation emissions calculation method has been changed 2014 and historical data and share of transport modes for 2013 has been restated, however 2012 data or the shares of transport modes has not been restated and is therefore not comparable.

Outokumpu made extra effort in order to form fully comparable environmental and energy figures. The aim was to report as openly, comparable and complete manner as possible follow GRI principle to publish reporting from the two previous years, in addition to the reporting year.

Social responsibility

Health and safety figures

LOST TIME INJURIES (LTI) PER MILLION HOURS WORKED (THE WORLD STEEL ASSOCIATION PRINCIPLE)

A lost time injury is an injury or accident that has taken place during working hours at the workplace and caused at least one sick leave day (excluding the day of the injury or accident). Sick leave of one day means that an Outokumpu employee or a person employed by a third party has not been able to return to work on their next scheduled working day. Returning to work with activity restrictions does not constitute lost-time injury status, regardless of how severe or minimal the associated restrictions.

EU AVERAGE LTI

From statistics supplied by the World Steel Association. Member companies follow the World Steel Association definition of lost time injury (LTI) in related reporting.

NEAR MISS INCIDENTS AND HAZARDS

Near miss incidents and hazards refer to events that could have led to an accident but no injury occurred. The number of near miss incidents occurring in all Group companies is collected via Outokumpu's financial consolidation system. Related information is provided by the Group's safety reporting system.

SICK LEAVE HOURS

Sick leave hours reported are total sick leave days during a reporting period. Reporting units provide data on absence due to illness, injury and occupational diseases on a monthly basis in connection with financial reporting. With effect from January 1, 2010, sick leave hours have been reported per million hours worked, not as a percentage figure.

Health and safety figures from 2014 include Outokumpu Group continuing operations. Safety is a priority at Outokumpu Group and therefore health and safety figures reflect the scope of Outokumpu operations as they were in 2014. Some of the 2013 OHS comparison figures have minor adjustments due to updated working hour figures.

Personnel figures

From 2012, the Group has been reporting actual headcounts. This has also been applied in calculating some of the personnel figures.

TOTAL PERSONNEL COSTS

This figure includes wages, salaries, bonuses, social costs or other personnel expenses, as well as fringe benefits paid and/or accrued during the reporting period.

TRAINING COSTS

Training costs include external training-related expenses such as participation fees. Wages, salaries, and daily allowances for participants in training activities are not included, but the salaries of internal trainers are included.

TRAINING DAYS PER EMPLOYEE

The number of days spent by an employee in training when each training day is counted as lasting eight hours. (2013 and 2014: employee figures = FTE)

BONUSES

A bonus is an additional payment for good performance. These figures are reported without social costs or fringe benefits.

PERSONNEL TURNOVER

((newly hired + leavers)/2)/year end headcount

The divider has since 2011 been changed from twice the average headcount to twice the year-end headcount. Compared to 2012, the formula has been specified in order to unify it with the formula recommended by KILA (Kirjanpitolautakunta).

Days lost due to strikes

The number of days lost due to strikes is calculated by multiplying the number of Outokumpu employees who have been on strike by the number of scheduled working days lost. The day on which a strike starts is included.

All personnel figures of 2013 and 2014 include Outokumpu personnel in the continuing operations and do not therefore include Terni/other remedy assets or VDM business that Outokumpu announced to divest in November 2013 – except for the personnel by countries of 2013, which is counted including the discontinued operations. All figures from 2013 and 2014 include both former Outokumpu and Inoxum employees, unless otherwise stated. Headcount from 2012 has been restated to include Inoxum figures.

Independent Assurance Report

To the Management of Outokumpu Oyj

We have been engaged by the Management of Outokumpu Oyj (hereinafter also the Company) to perform a limited assurance engagement on the quantitative information on economic, social and environmental responsibility for the reporting period 1 January to 31 December 2014, disclosed in Outokumpu Oyj's Sustainability Report 2014 (hereinafter Sustainability Reporting).

Management's Responsibility

The Management of Outokumpu Oyj is responsible for preparing the Sustainability Reporting in accordance with the Reporting criteria as set out in the Company's reporting instructions and the G3 Sustainability Reporting Guidelines of the Global Reporting Initiative.

Practitioner's Responsibility

Our responsibility is to express a conclusion on the Sustainability Reporting based on our work performed. Our assurance report has been prepared in accordance with the terms of our engagement. We do not accept, or assume responsibility to anyone else, except to Outokumpu Oyj for our work, for this report, or for the conclusions that we have reached.

We conducted our work in accordance with the International Standard on Assurance Engagements (ISAE) 3000 "Assurance Engagements Other than Audits or Reviews of Historical Financial Information". This Standard requires that we comply with ethical requirements and plan and perform the assurance engagement to obtain limited assurance whether any matters come to our attention that cause us to believe that the Sustainability Reporting has not been prepared, in all material respects, in accordance with the Reporting criteria.

In a limited assurance engagement the evidence-gathering procedures are more limited than for a reasonable assurance engagement, and therefore less assurance is obtained than in a reasonable assurance engagement. An assurance engagement involves performing procedures to obtain evidence about the amounts and other disclosures in the Sustainability Reporting. The procedures selected depend on the practitioner's judgement, including an assessment of the risks of material misstatement of the Sustainability Reporting. Our work consisted of, amongst others, the following procedures:

- Interviewing senior management of the Company.
- Visiting one site in Finland.
- Conducting two video interviews with sites in Sweden and the United States.
- Interviewing employees responsible for collecting and reporting the information presented in the Sustainability Reporting at the Group level and at the site level where our site visit and video interviews were conducted.
- Assessing how Group employees apply the Company's reporting instructions and procedures.
- Testing the accuracy and completeness of the information from original documents and systems on a sample basis.
- Testing the consolidation of information and performing recalculations on a sample basis.

Conclusion

Based on our work described in this report, nothing has come to our attention that causes us to believe that Outokumpu Oyj's Sustainability Reporting has not been prepared, in all material respects, in accordance with the Reporting criteria. When reading our assurance report, the inherent limitations to the accuracy and completeness of sustainability information should be taken into consideration.

Helsinki, 3 March 2015

PricewaterhouseCoopers Oy

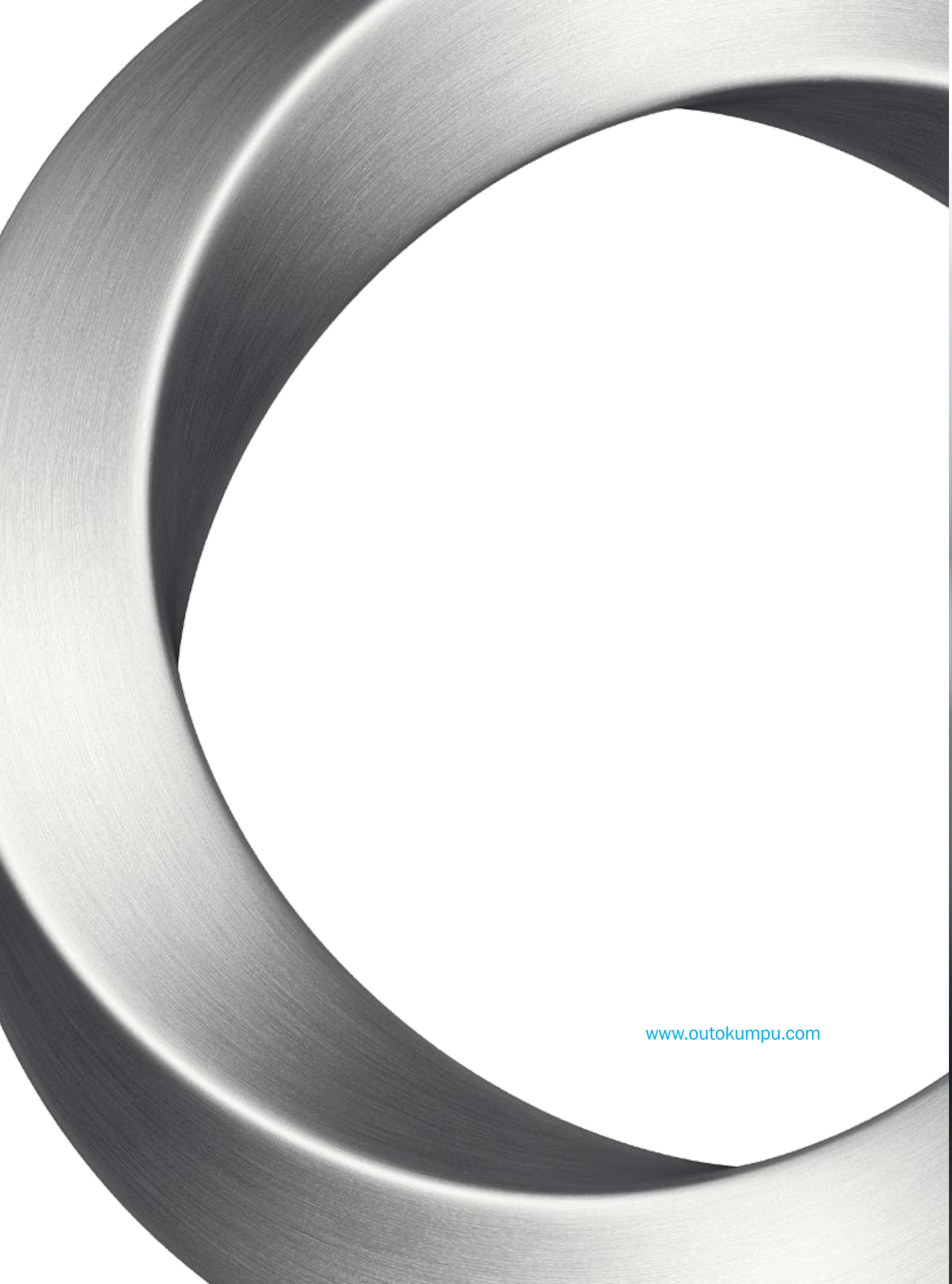
Sirpa Juutinen
Partner
Sustainability & Climate Change

Maj-Lis Steiner
Director,
Authorised Public Accountant
Assurance Services

Outokumpu Oyj

Corporate Management
Riihitontuntie 7 B, P.O. Box 140
FI-02201 Espoo, Finland
Tel. +358 9 4211
Fax +358 9 421 3888

www.outokumpu.com



www.outokumpu.com