Outotec

Sustainability Report 2011

Outotec

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Outotec and sustainability

Our approach to sustainability is defined in our mission, strategy, values, corporate responsibility policy, and management system documents. 'Sustainable use of Earth's natural resources' is the mission we work to achieve and we intend to incorporate sustainability into all aspects of our operations, from our own business processes to the solutions we develop for our customers. Our strategic intent is to be the leading provider of sustainable minerals and metals processing solutions and to become an innovative provider of sustainable energy and water processing solutions.

Because of the nature of our business, our most significant contribution to abating climate change is made through providing sustainable technology for our customers, enabling them to run environmentally sound, profitable and socially acceptable business. In that way, with our innovative solutions, we enable societies' sustainable development.

Outotec has existed as an independent company since 2006. We started sustainability reporting as of 2010 to improve our performance and transparency in all aspects of sustainability. This report describes the company's performance in 2011 and is an update of the Sustainability Report 2010. The reporting complies with the accounting standards and the reporting guidelines issued by the voluntary Global Reporting Initiative (GRI).

Outotec in brief

With a mission of 'sustainable use of Earth's natural resources', Outotec develops technologies and provides sustainable life cycle solutions to its customers, guaranteeing the best return on the customer's investment. The common denominator in Outotec's technologies is their ability to maximize recovery, minimize environmental impacts, and conserve energy, natural resources and capital investments. The majority of Outotec's customers operate in the minerals and metals industries, and increasingly in the energy sector, chemical industry and industrial water treatment.

Innovative research at Outotec's in-house R&D facilities and continuous development work in cooperation with customers has made the company a leading developer of technology in the minerals processing and metallurgical industry. The company has a strong market position across the entire value chain from ore to metal and it intends to strengthen its technology leadership also through acquisitions. In 2011, Outotec acquired a phosphorus recycling technology business from ASH DEC Umwelt, the Vertical Pressure Filter (VPF) technology from Australian Process Technology, a renewable energy technology business from Energy Products of Idaho, and a furnace shutdown service business from Kiln Services Australia.

Outotec's most significant impact on sustainability occurs indirectly through our customers' operations. At present, these organizations are confronted with the dilemma created by the growing need for metals and the environmental impact of their production. As a result, customers are increasingly looking to improve their energy efficiency, as well as to reduce CO_2 and other emissions and water consumption. Outotec believes that with modern technologies and life cycle solutions metals and materials can be produced sustainably.

Outotec, headquartered in Finland, has global operations with sales and service centers in 24 countries and sales to over 80 countries. Outotec Oyj is the parent company and there are over 50 legal entities in the group. Outotec has four business areas: Non-ferrous Solutions; Ferrous Solutions; Energy, Light Metals and Environmental Solutions; and Services.

Together with Eesti Energia, Outotec operates a joint venture company developing a cleaner and more efficient production method for refining oil from oil shale. In addition, Outotec is involved in developing energy-efficient and environmentally sound approaches for utilizing logging and sawing wastes through GreenExergy AB, a joint venture company established together with Skellefteå Kraft.

Outotec has been listed on the NASDAQ OMX Helsinki since October 2006.

Non-ferrous Solutions
- Providing technology solutions for the processing of copper, nickel, zinc, lead, gold, silver, and platinum group metals at all stages in the value chain from ore to metal.

Ferrous Solutions
- Providing technology solutions for the processing of iron ores and other ferriferous materials in the entire value chain from ore to metal.

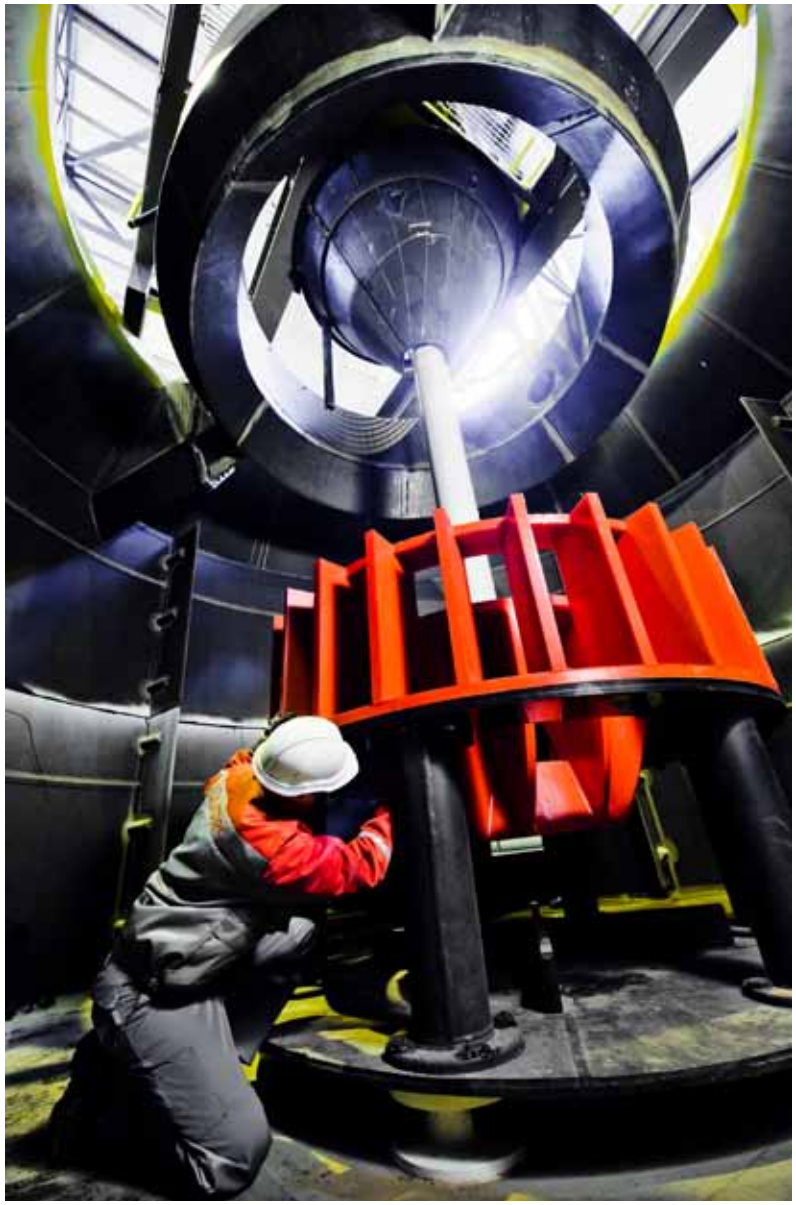
Energy, Light Metals and Environmental Solutions
- Providing technology solutions for sulfuric acid production, off-gas handling, alumina refining, roasting, calcination, biomass and other renewable energy, oil shale and oil sands processing, as well as for industrial water treatment.

Services
- Providing life cycle services to Outotec's customers in all business areas.

Summary of key figures	2011	2010	2009
Sales, EUR million	1,385.6	969.6	877.7
Reported operating profit, EUR million	111.9	41.6	58.6
Research and development expenses, EUR million	33.5	28.5	20.5
Priority applications, pcs	41	50	56
National patents granted, pcs	326	287	286
Average number of employees	3,516	3,151	2,612
Wages and salaries, EUR million	284.4	224.4	159.5
Total greenhouse gas emissions, thousand tonnes of CO_2-e	26.0	24.3	18.1
Greenhouse gas emissions avoided through the use of Outotec technologies, thousand tonnes of CO_2-e*	4,800	4,200	4,100
Total energy consumption, TJ	141.5	150.0	101.6

* Year 2011 figure is calculated with 5 Outotec technologies (2010 and 2009: 3 technologies), the actual GHG emissions avoided with all Outotec technologies is higher.

Read more about our financial performance in Outotec Financial Statements 2011.



Highlights in 2011

JAN

FEB

- **Acquisition of the ASH DEC** recycling technology business.

MAR

- **Technology Award** granted to 25 employees.

APR

MAY

- **Arcelor Mittal selected Outotec** as the Number One Contractor for Safety Performance in Canada.

JUN

- **Outotec published** its first sustainability report based on the GRI guidelines.
- **Outotec agreed** with International SOS on the provision of medical and security services for Outotec employees globally during business trips.

JUL

- **New Technology and Plant Safety management** process became mandatory in all Outotec entities.
- **Outotec received Top Partner award** from Boliden Harjavalta, Finland, for solid performance in safety, environmental protection, cost efficiency and quality.

AUG

- **Agreement to support** the Ministry of Mineral Resources and Energy of Mongolia in developing sustainable mining and metallurgical processing.

SEP

OCT

- **O'People employee survey** was carried out.
- **Outotec was included** in the Nordic Carbon Disclosure Leadership Index and ranked among the top 10% of the 260 companies in the CDP's annual Nordic Report.
- **Outotec was ranked 8th best company** in a survey evaluating the reputation of 100 listed companies in Finland in 2011.

NOV

- **Outotec received jury's honorary mention** in evaluation of corporate responsibility reports of Finnish companies.
- **Outotec's Capital Markets Day 2011** was held in London.
- **Outotec and PE International started** joint development of a new software interface for metals production sustainability and life cycle evaluations.

DEC

- **Acquisition of the renewable energy** technology business from Energy Products of Idaho in USA.
- **New partial roasting process** to purify contaminated copper and gold concentrates was launched and a pilot plant established at the company's research center in Germany.

Our approach

"With eco-efficient solutions, it is possible to reduce the environmental impact of the industry, at the same time increasing welfare."

CEO's message to stakeholders

I am pleased to be able to say in this second Outotec Sustainability Report that in 2011 we progressed well in many areas of our sustainability agenda which we defined in 2010. This report gives you the details of our progress, and I hope that its contents and the targets we have set for ourselves will demonstrate to you our commitment to sustainability and corporate responsibility.

Continued economic growth in the emerging markets, coupled with growing sustainability requirements, encouraged our customers to invest in new technologies, capacity, and services. In most of our technology areas, the workload was high due to intensive sales and delivery activity. We succeeded in hiring a large number of new professionals to the company to increase our capacity in line with the business growth and to strengthen our market area presence. We complemented our technology portfolio by acquiring four entities, the most significant of which was Energy Products of Idaho, a renewable energy technology business located in Idaho, USA. The significant efforts of our employees in strategy execution, supported by our new operational model, delivered strong growth. Despite major investments in developing our business and operations in 2011, our profitability continued to develop solidly towards our long-term targets.

Making the most of our potentially global impact

Outotec's most significant impact on sustainability occurs indirectly through our customers' operations. 'Sustainable use of Earth's natural resources' is the mission we've worked toward achieving, in cooperation with our customers.

At present, our customers are increasingly confronted with the dilemma that exists between the growing need for metals and the environmental impact of producing them. We believe that this dilemma can be addressed. In fact, its solution is a vital part of our strategy – we see it as our role in the industrial ecosystem. With eco-efficient solutions, it is possible to reduce the environmental impact of the industry, at the same time increasing welfare. Of the megatrends facing the mining and metals sector, we consider sustainability the most important, and we see evidence of this not only in mature markets but also in those in the developing stages. In the world of exhausting natural resources and a new energy paradigm where oil is expected to run out by 2050 and nuclear power is being abandoned by many countries, there is an increasing demand for more advanced, energy-efficient technologies and recycling solutions.

We address these challenges by providing our customers with sustainable technologies to maximize the recovery of valuables and minerals whilst consuming less energy and fewer natural

"Around 87% of our order intake for 2011 was categorized as Environmental Goods and Services under the OECD classification."

resources at reduced operational cost. Our technologies – whether relating to minerals and metals processing or water, energy, and biomass – reduce the environmental effects of a number of industrial operations worldwide, hence our strong commitment to making the most of our potentially global impact. In fact, as much as 87 percent of our order intake in 2011 was categorized as Environmental Goods and Services by OECD definition. This is a notable increase from the previous year's 72 percent.

Improving our own performance and reporting systems

In line with our commitment to sustainability, we continued our efforts and succeeded well in putting in place policies and processes to improve our performance, data collection, and measurement systems. One of these initiatives was harmonizing our environmental and quality management systems in order to create an integrated system for Quality, Environmental Health and Safety management. In addition, we launched a global Supply Policy and defined our supplier criteria in terms of ethical conduct and social responsibility.

Although we made progress in certain areas, for example by installing new video conferencing facilities, we were not able to reduce our greenhouse gas emissions below the 2010 levels, partly due to our strong business growth, which required frequent air traveling to the project sites and customer meetings.

To support our commitment to the United Nations Global Compact initiative and the principles on human rights, the environment, labor, and anti-corruption, we started a dialogue with our employees and management about the values and business ethics. This work will continue in 2012 with defining our Code of Conduct and training the whole organization in this regard. We will continue to lend our support to the United Nations Global Compact and other such causes, pushing for good use of the Earth's resources for generations to come.

Pertti Korhonen
President & CEO, Outotec

Strategy

Outotec's most significant impacts on the environment occur indirectly through our customers' operations. Our strategy for 2012–2015 builds on providing sustainable life cycle solutions which fully utilize Outotec's technology and service expertise and guarantee performance and lifelong benefits to our customers. These benefits include a license to operate, reduced energy and water consumption, high recovery, and minimum emissions. In addition to strengthening our technology portfolio for the entire value chain – from ore to metals – through own research and development as well as by acquisitions, our strategy focuses on expansion to adjacent industries such as the energy industry and industrial water treatment. We also aim at strengthening further our presence in emerging markets and improving our productivity and scalability. This strategy provides the direction for Outotec's sustainability work.

Outotec has worked on over 2,000 projects worldwide. The majority of the world's iron ore pellets, half of the world's primary copper, and a third of the nickel from sulfide ores are produced using Outotec processes. Furthermore, over 650 sulfuric acid plants installed with the help of our expertise account for more than a third of the world's sulfuric acid capacity.

In the area of mineral and metal processing, Outotec has been an industry leader, developing innovative technologies for nearly a century. This expertise has since been successfully applied to many other industries. We continue to seek actively new applications for our technologies. Rising energy costs and stringent legislation have guided users to seek out energy efficient solutions for many years. In addition, water is an increasingly scarce resource and its efficient use, along with the recycling and purification processes, is a goal of steadily mounting importance.

Energy and industrial water treatment are just two examples of adjacent areas which require efficient and environmentally sound use of scarce raw materials. These industries show significant growth opportunities for Outotec while offering high synergy potential and manageable risks.

In addition to the pressure to improve production efficiency from an environmental sustainability perspective, the financial impact of sustainability in the metals and minerals industry is also of growing relevance. Goldman Sachs estimates that, assuming a working emissions trading scheme is in place with carbon pricing at USD 60/ton of CO_2, 15 percent of the total cash flow of global companies will be transferred from companies with high emissions to those with low emissions. This trend will be seen specifically in carbon intensive industries, such as those of Outotec's customers. While this poses a significant threat to these customers, it also provides immense possibilities for Outotec to successfully market its technologies.

In light of the trends mentioned above, Outotec's strategic goals for 2012–2015 are to become an integrated global company, to develop a strong company culture, and to improve cost-efficiency and scalability. Supported by a strong brand and reputation, the company aims to cover all relevant geographic markets with its full offering, to become the undisputed global leader in sustainable minerals and metals processing solutions, and to firmly establish a presence in the energy and industrial water treatment businesses.

Sustainability approach in mergers and acquisitions

Acquisitions support Outotec's long term strategy. We take environmental, economic and social aspects into consideration when assessing potential acquisition targets. For example, the acquisition of the US based Energy Products of Idaho in 2011 complemented Outotec's environmental technologies by renewable energy solutions, which efficiently produce energy from all kinds of waste. In addition to supplementing energy sources, the amount of waste can be reduced with this technology, which lowers the environmental burden.

"We strive to become the undisputed global leader in sustainable minerals and metals processing solutions and to firmly establish our presence in the energy and water businesses."

In the assessment of new potential targets we use the following indicators among others:

- Energy efficiency of technologies
- Efficiency of water usage
- Environmental soundness of technologies
- The environmental responsibility level of the acquisition
- How the target respects employee well-being, local health and safety systems, local bargain agreements, and human rights in overall
- Ethical standards
- International norms

Outotec also carries out environmental due diligence if there is a risk of potential environmental issues in relation to the acquisition. Sustainability issues are carefully considered in the business integration and future business plans.

Materiality assessment

Outotec's most important sustainability issues were discussed and defined in a management workshop in 2011 facilitated by an external partner. The participants included the CEO and heads of shared functions as well as representatives from business areas. The results of the materiality assessment conducted in 2010 were used as the starting point. Sustainability trends and feedback from stakeholders were taken into account when evaluating the most important sustainability issues and, subsequently, the chosen GRI indicators.

Through discussion and ambition level setting, the following aspects were selected as the most material for Outotec:

- Sustainable products and solutions for customers
- Preferred employer
- Community involvement and charity work
- Improving sustainability of our own operations
- Responsible supply chain
- Technology and plant safety
- Global integrated QEHS system
- Human rights and labor rights

The ambition level for each material issue was agreed and the person responsible for developing the performance was nominated. Relevant sustainability-related Key Performance Indicators (KPIs) were chosen based on the workshop results. The materiality assessment revealed that development and improvement of the company's technology solutions is clearly the most important sustainability issue for Outotec. The significance of providing eco-efficient solutions is underlined by comparing the amount of CO_2 emissions annually avoided through the use of Outotec's goods and services (4,800,000 tonnes CO_2-e) and the amount of greenhouse gas emissions from Outotec's operations (26,025 tonnes CO_2-e).

To become a preferred employer was regarded as highly important for Outotec's future success. Community involvement and charity work including employee engagement was identified as an area for further development.

Improving the sustainability of Outotec's operations, supply chain management, as well as technology and plant safety management were also identified as important targets to meet the expectations of customers, own employees and other stakeholders as well.

Continuous development of Outotec's management systems ranks high on the company's sustainability agenda. In order to operate as a globally integrated company, to grow the business, and to enhance productivity and quality, Outotec is in a process to create a globally integrated system for quality, environmental health, and safety management.

Outotec's Corporate Responsibility Policy serves currently as the guidelines for Outotec's business ethics including human rights and labor practices. Outotec encourages its employees to value diversity and different cultures and treats people in an equal and fair manner regardless of their ethnic origin, nationality, religion, political views, sex, sexual orientation, or age.

Corresponding to these concerns and ambition levels, the appropriate GRI indicators were chosen and targets for improvement determined.

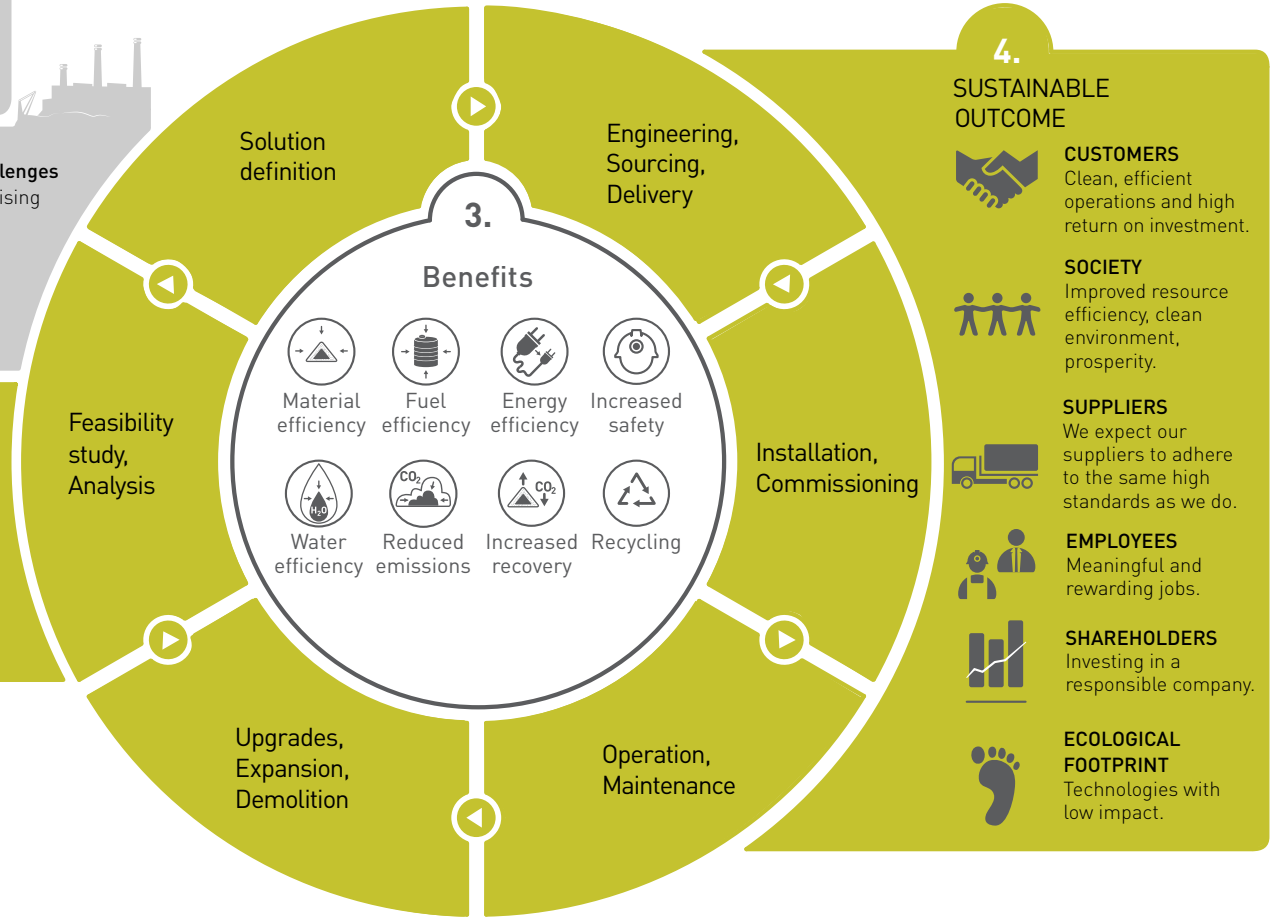
We enable sustainable use of Earth's natural resources

The demand for metals and raw materials to support global development is growing while resources are becoming increasingly scarce.

1. Our customers face many challenges such as declining ore grades, rising energy prices, water scarcity, tightening environmental regulations, employee health and safety, and long-term operational profitability.

Outotec

2. Our core competence is in mineral and metal processing. We develop new applications for energy and industrial water treatment, offering customers sustainable technology solutions and life cycle services.



4. SUSTAINABLE OUTCOME

CUSTOMERS
Clean, efficient operations and high return on investment.

SOCIETY
Improved resource efficiency, clean environment, prosperity.

SUPPLIERS
We expect our suppliers to adhere to the same high standards as we do.

EMPLOYEES
Meaningful and rewarding jobs.

SHAREHOLDERS
Investing in a responsible company.

ECOLOGICAL FOOTPRINT
Technologies with low impact.

Management approach

Economic responsibility
As a listed company, Outotec is committed to increasing shareholder value. The company delivers on this commitment by developing and maintaining competitive and profitable operations based on ethical business practices. Outotec applies principles of good corporate governance and transparent accounting.

Outotec's operations have economic impacts on the local, national, and global communities in which the company operates. We contribute to community well-being through paying taxes, direct and indirect employment, and other ways of community involvement. The world's industrial production is increasingly concentrated in Asia to serve the area's rapidly growing large local markets and to supply world markets as a manufacturing powerhouse. Thus, the majority of new metals production capacity is also being constructed in the developing markets. Outotec is strengthening its presence, and it aims to support sustainable development in these markets.

An essential part of Outotec's growth strategy is to complement the company's technology portfolio of sustainable products and services through acquisitions. In 2011, the acquisition of Energy Product of Idaho strengthened Outotec's offerings for the renewable energy sector, and ASH DEC brought a new phosphorous recycling technology to the company.

Environmental responsibility
Although improving the sustainability of Outotec's operations is an important target for the company, the development and delivery of energy-efficient and environmentally sound solutions for the customers has far more significance for Outotec in terms of environmental responsibility. We intend to further increase the share of environmental goods and services in our offerings.

As a leading provider of technology, Outotec ensures that all the plants, equipment, and services engineered and delivered by the company are reliable and safe over the life cycle and that all the products meet with all relevant health and safety laws and regulations as well as safety-related industrial standards.

We also aim to reduce the environmental impact of our own operations. Therefore we follow our greenhouse gas emissions, energy consumption, water consumption, usage of paper, and waste generation.

Read more in Our impact, p. 31.

Social responsibility
Society
Outotec contributes to the community well-being, in addition to paying taxes and providing jobs directly and indirectly, by supporting charitable enterprises and events in line with our ethics. We also maintain close cooperation with educational institutions. Outotec does not support or give donations to political organizations.

Human rights and labor practices

Outotec encourages its employees to value diversity and different cultures and treats people in an equal and fair manner regardless of their ethnic origin, nationality, religion, political views, sex, sexual orientation, or age. Freedom of association prevails in Outotec.

Outotec's aim is to be an open and equal work community. The company culture encourages everyone to discuss and develop Outotec's operations. Regular briefings and interactive events are organized for the personnel regarding the company's financial situation, targets, and successes. In addition, various influencing and discussion channels are used, such as online questionnaires, intranet, Outotec Round-Table, and meetings with employee representatives.

Competent and motivated people are essential to Outotec's success. Therefore, the company provides continuous training and competence development as well as a healthy and safe working environment for the personnel.

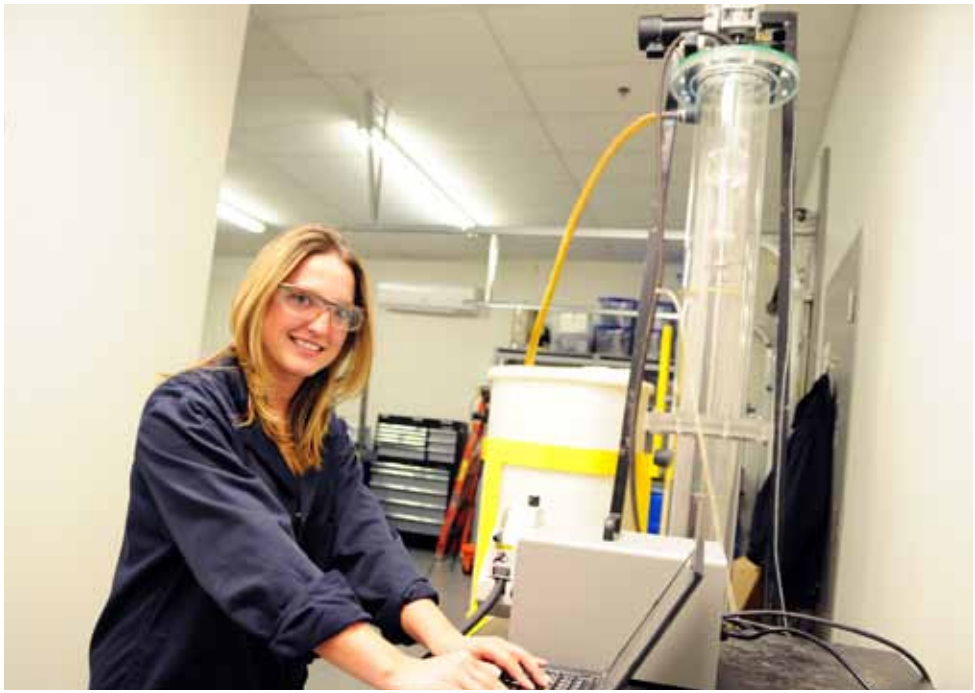
As a technology company, Outotec needs highly qualified employees and suppliers. In Outotec's customer projects, also local subcontractors need to be trained specialists, and therefore the risk profile regarding affront/violation of human rights is relatively low. We defined and published a new Supplier Policy in 2011 and continue developing further our supply chain management and supplier selection procedures.

Globally integrated QEHS system

Outotec is committed to acting responsibly, utilizing the best know-how available in the areas of quality, environmental and occupational health and safety.

Outotec operates as one globally integrated company to enable business growth and enhance productivity and quality. Therefore, our management systems for Quality, Environmental Health and Safety (QEHS) are being unified. The 'One Outotec' QEHS management system defines the procedures, working instructions and templates that are to be used in global business processes. Outotec adopted a new QEHS policy in 2011. This policy addresses issues from a general perspective, leaving specific details to be elaborated and applied as required. It is each employee's responsibility to comply with this policy.

Several steps in establishing a world class integrated QEHS management system were taken in 2011. We established global teams and nominated local persons responsible for QEHS in order to optimize the current QEHS management in all units and locations. These teams identified related KPIs, recorded initial data and prepared a QEHS manual with main integrated global procedures and templates. Modular and integrated QEHS management system is expected to boost our business and profitability. The documentation was approved and published Outotec-wide in 2011.



Outotec's QEHS procedures include Technology and Plant Safety Management (TPSM). A dedicated team made instructions and developed templates for TPSM and organized induction for the employees globally.

Furthermore, preparations for ISO 9001 certification were done in six countries and preparations for multi-site ISO 9001 certificates in seven countries. The system is based on ISO standards and focuses on Total Quality Management (TQM) and other modern ways of management.

Our target is to establish modern management systems to cover all Outotec locations, introduce the Key Performance Indicators and data collection by 2013, and ultimately achieve the new QEHS management system certification in 2013. The challenge is to integrate our business requirements into the one system while keeping the existing certificates valid during the implementation of the new system.

Read also Outotec strategy, p. 6.

Our way of working

Employees

Outotec had a total of 3,883 employees at the end of 2011. Temporary personnel accounted for about 9 percent of the total. In addition to own employees, Outotec had approximately 620 full-time equivalent contracted professionals working in project execution.

Nearly half of Outotec's employees are based in Europe; however, the company has operations and employees in all the continents.

Educational background

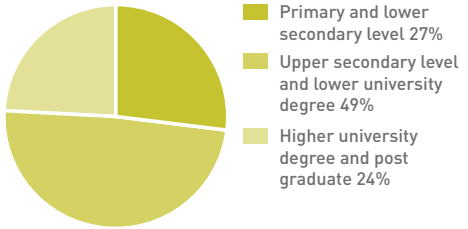
Outotec's position as an industry leader requires strong technological expertise, understanding of customers' production processes, engineering and project implementation know-how, and production plant operating expertise. In 2011, 24 percent of Outotec's employees had a higher university level or postgraduate degree, and some 49 percent of the employees had an upper secondary level or a lower university level degree.

Learning how to work in a global matrix

While extensive internal changes were implemented at Outotec in 2011, employees had a high workload due to intensive sales work and a record amount of new orders and projects under execution. The financial result for the year 2011 was very good, which is a clear indication that the operational model taken in use in 2010 is gradually being implemented and that the organization is learning how to cooperate globally in a matrix organization. However, the matrix and the operational model have also brought along some challenges that need the management's attention. These were partly addressed in "Working Together" workshops organized in all major Outotec locations as a part of the work related to redefining our values and principles.

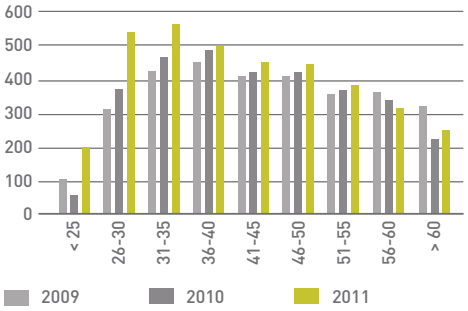
Implementing the growth strategy, defined in 2010, required a lot of effort in recruiting new talent. Our permanent personnel increased by approximately 700 new employees. This was a stretch achievement, although not enough, and therefore proper resourcing remains a key target for the Human Capital function in 2012. A new global resourcing strategy was prepared in 2011, which will direct recruitment activities in 2012 and onwards.

Educational background



2011: n=2503 (coverage: 64%)

Personnel by age range



2011: n=3616 (coverage: 93%)

Employees	2011	2010	2009	GRI indicator
Number of employees at year end	3,883	3,130	3,128	LA1
Number of employees on average	3,516	3,151	2,612	LA1
Temporary, % of the total number	9	8	8	LA1
Number of full-time equivalent contracted professionals	620	328	250	LA1
Share of women in employees, %*	20	20		LA2
Share of women in management, %**	14	11		LA2, LA13
Wages and salaries paid, EUR million	284.4	224.4	159.5	EC1
Average age of employees	40.7	41.3	43.7	LA2

* 2011: n=3756 (coverage: 97%)

** 2011: n=564 (a total of 631 employees in management; restrictions in gender data use in some countries)

Personnel by area	Dec 31, 2011	Dec 31, 2010
EMEA (including CIS)	2,327	1,945
The Americas	972	759
Asia Pacific	584	426
Total	**3,883**	3,130

Personnel survey, %	2011	2010	2009	2008
Employee satisfaction	**65.6**	63.7	66.4	63.9
Survey coverage	**79.4**	74.6	73.1	79.0

Redefining values, principles and Code of Conduct

In 2011, a dialogue with employees was started about Outotec values, principles, and Code of Conduct with the purpose to discuss and redefine them. Approximately 60 percent of the employees participated in workshops and gave also their input in an online questionnaire. Approximately 110 senior leaders started also an ethical dialogue in the Management Forum on various corporate responsibility and values related topics. The work will be finalized in 2012. The target is to publish the refined set of Outotec Values and integrate them into the management system, including recruitment, performance evaluation, promotions, and leadership development. The Code of Conduct will be renewed and an e-learning platform built. Ethical dialogue will continue in internal social media with all employees and in the Management Forum. The long-term target is to provide training related to Code of Conduct to all employees.

Work satisfaction slightly behind the global benchmark

The O'People personnel survey measuring work satisfaction globally was conducted in October/November 2011. The number of respondents rose from 2010 by nearly five percentage points to 79.4 percent. According to the survey, both overall satisfaction and commitment bounced back to improvement curve. Commitment is at the same level with the global benchmark, while the satisfaction index still remains slightly behind. All areas in the survey improved in overall results. The biggest decrease was seen in 'Involvement in decision making' and 'Bureaucracy' as the organization started to experience working in matrix (decision making) and harmonizing processes and systems (bureaucracy). Management was perceived more positively than in the benchmark, as was the case also in the previous survey.

Lowest employee turnover in Europe

During 2011, employee turnover remained lowest in Europe. More detailed reporting on employee turnover was possible because of the new master data system taken in use in 2011.

Competence development

Competent and motivated people are essential to Outotec's success. Therefore, the company provides continuous training and competence development as well as a healthy and safe working environment for the personnel.

To implement major changes globally requires commitment of all employees and enhanced communication and training. While the previous year was more concentrated on the design of the new operational model and matrix organization, in 2011 the management and employees focused on learning a common way of working. To support the communication as well as the onboarding and induction of new employees and summer trainees, two Outotec tailor-made e-learning applications and several webcasts were globally in use. Nearly 1,100 employees took the e-learning course.

In learning and development, 70 percent of Outotec's emphasis is on on-the-job learning, 20 percent on learning from others, and 10 percent on formal training programs. In 2011, the operational model, performance management, and leadership were the key themes in training to increase the understanding of the matrix relationships, cooperation, and the way of working.

Employee turnover rate	2011	2011	2010	GRI indicator
by age group	#	%		
<25	15	8	n/a	LA2
26–30	40	7		
31–35	43	8		
36–40	29	6		
41–45	23	5		
46–50	20	5		
51–55	7	2		
56–60	18	6		
>60	9	4		
Total*	204	6		
by gender				
Women	45	6.1	n/a	LA2
Men	195	6.5		
by region				
Finland	51	4	n/a	LA2
Germany	16	3		
Rest of Europe	12	3		
The Americas	83	9		
Australia	18	5		
Rest of the world	60	15		

* The reason for the difference in the total number in the category 'employee turnover rate by age group' is restricted data of age from one reporting unit.

On-the-job learning

As part of on-the-job learning and personal growth, job rotation was very much encouraged, and approximately 160 employees took on new challenges. Outotec's new employees participated in various customer projects to get practical experience. Hundreds of employees participated in different development initiatives in Outotec, such as the strategy planning process and designing global business processes. To enable lifelong learning and uniqueness of knowledge in certain expertise areas, we encourage our experienced specialists to take an educator role to share their expertise and train successors.

Learning from others

Mentoring is also used to transfer tacit knowledge from more experienced specialists to newcomers or less experienced employees. During 2010–2011, some 80 employees participated in the mentoring programs as mentees and mentors. Also a new cross-border mentoring concept was completed, in which two persons mentor a group of 10 persons for a year.

Outotec has its own concepts to strengthen leadership and supervisory skills. Leadership development and new key expert position holders in a matrix organization were supported by coaching programs. In 2011, there were about 40 personal coaching processes to support key employees in their challenging job. Management teams of the Services, Ferrous Solutions, and Non-ferrous Solutions business areas, and the Supply function participated in the development program conducted for 50 executives in total. Furthermore, Outotec has an in-house coach pool to meet different needs with regular monitoring of the quality and achievement of targets of coaching.

Different tools, such as EQ-i Emotional Intelligence (100 participants), 360 assessments (55 participants), and MBTI assessments (60 participants), were used as part of personal growth and coaching.

Training programs

Outotec organized some global training programs in 2011 focusing on leadership development. Outotec's top management (150 managers) had a one-day training session on personal health and energy management, which focused on all dimensions of energy and implications from neglecting them. The training included simple ways to take care of sufficient physical exercise, rest/recovery, and nutrition facts, highlighting the importance of proactive and preventive actions in health. After the training, all participants had access to a virtual training system, which included brain activity exercises and nutrition tips.

Most of the personnel in Outotec's major locations (altogether approximately 2,000 people) participated in a one-day workshop which focused on the "Working together" theme and on revisiting Outotec values. These workshops gave direct input from the personnel on how the Values should be refined to reflect the current organization, mission, and strategic intent of the company. Employees' input will be an essential part when defining the new Code of Conduct in 2012.

In addition, there were some local leadership development programs, as well as safety, language, and ICT trainings. Outotec's business lines and product lines organized technical training for employees and customers worldwide. Furthermore, cross-cultural training about Middle Eastern cultures was organized for the employees.

Training	2011	2010	GRI indicator
All types of vocational training and instruction		n/a	LA10
Number of employees	1,288		
Hours	32,948		
Paid educational leave provided by the reporting organization for its employees		n/a	LA10
Number of employees	318		
Hours	4,240		
Training or education pursued externally and paid for in whole or in part by the reporting organization		n/a	LA10
Number of employees	1,237		
Hours	16,569		
Training on specific topics such as health and safety		n/a	LA10
Hours	9,955		

Coverage of the benefits provided by Outotec

Benefit	Full time employees covered (%)	Temporary employees covered (%)	GRI indicator
Life insurance	30	10	LA3
Health care	80	50	LA3
Disability/invalidity coverage	90	40	LA3
Maternity/paternity leave	90	40	LA3
Retirement provision	45	30	LA3

n=3119 (coverage = 80%)

Over 400 employees received training for MS Office, Lotus Notes, SAP, and Siebel applications, and many employees participated in external training and graduation programs.

Performance Development Dialogues

In 2011, Outotec used a new electronic workbook application for Performance Development Dialogues (PDD), and approximately 360 managers globally were trained to use the tool. Our PDD is a participative process between an employee and a line manager, and target setting is tied to an annual bonus system. Personal competence development plans were discussed in the mid-year review. A total of 92 percent of the employees globally had a PDD in 2011, showing an increase of eight percentage points from 2010.

We also started to develop a new integrated tool to support all Outotec's performance management related processes. The target for 2012 is that 90–95 percent of employees have their PDD supported by the new tool which allows automated individual target setting and review.

Labor practices

Outotec Round-Table discussed strategy and internal development programs

Outotec Round-Table is a discussion forum for personnel representatives and management on matters concerning the whole company. It is based on the European Works Council directive 94/95 EU, Article 6 and it covers all employees in the EU countries as well as in Norway (and Switzerland). Outotec Round-Table was held twice in 2011. Topics discussed included strategy, acquisitions, organizational change, and internal development programs. 23 personnel representatives participated in the meetings.

Employee benefits

Outotec has several pension plans in various countries. The plans are mainly classified as defined contribution pension plans. In Germany, we use defined benefit pension plans. Other post-employment benefits relate to retirement medical arrangements in Germany.

Fair and motivating compensation is achieved through pay that is in line with the requirements of the job and the performance and competences of the employee.

54 percent of employees are covered by collective bargaining agreements. Binding collective agreements are followed in each country where they are applicable to Outotec employees.

Almost all Outotec employees are covered by an annual bonus system to encourage their performance and development. The bonus is paid only to those who have been employed by the company at least six months during the accounting period, or if a person has been hired during the accounting period, the minimum employment time is 4 months, and in addition the employee needs to be employed by Outotec on the 31st of December 2011.

In addition, 89 key employees were part of the company's share based incentive program in 2011.

Read more in the Outotec Financial Statements 2011, page 27.

The minimum notice periods regarding significant operational changes depend on locations and national legislation, and therefore differ significantly. The range can be from 2 to 8 weeks up to one year.

Health and safety topics are not covered in formal agreements with trade unions. Health and safety issues are covered by statutory regulations in different laws, and therefore there is no need for agreements.

Health and safety

The main focus in the area of Quality, Environmental Health and Safety (QEHS) is to harmonize the QEHS-management systems and to create common procedures, instructions and tools for all the Outotec offices. The target for health and safety is that all main offices are working according OHSAS18001 management system before the end of 2013.

During 2011, Outotec has taken into use a global health and safety reporting system. The new reporting system is used for setting and following common health and safety targets for all of the Outotec offices. This reporting tool also provides qualified metrics that can be used by Outotec top-management, clients, and partners. As a result of this new reporting system, Outotec was able to report its health and safety performance globally for the first time in 2011.

In 2011, Outotec established a medical and security services agreement with the global service provider International SOS to ensure the security and well-being of its employees. This service covers all Outotec employees for emergencies that occur during business trips, through providing medical and security assistance 24/7.

Health and safety	2011	2010	GRI indicator
Non-fatal injury arising out of or in the course of work	48	n/a	LA7
Fatal injury arising out of or in the course of work	0	n/a	LA7
Lost Time Injury rate (LTIR) (number/200,000 working hours)	1.62	n/a	LA7
Occupational diseases	0	n/a	LA7
Occupational disease rate (number/200,000 working hours)	0	n/a	LA7
Lost days because of an occupational accident or disease	408	n/a	LA7
Lost day rate (number/200,000 working hours)	13.76	n/a	LA7
Work-related fatalities (The death of a worker due to an occupational injury or disease)	0	n/a	LA7

n=3394 (coverage=87%)

Target for 2011	Performance in 2011	Target for 2012	GRI indicator
	Technology and Plant Safety Management (TPSM) as part of the QEHS procedures, instructions and templates were developed and published and global inductions executed.	**Technology and plant safety: implement TPSM in all locations with engineering activities. (NEW)** **Long term target:** **Zero harm=** **zero fatalities+** **zero incidents+** **zero property damages** **for Outotec and our Partners**	LA7

Gender balance and age structure

Because of the new master data system taken in use in 2011, we are able to report detailed information of the share of females and age structure in each employee category. The low share of women may reflect the typically high share of men in the history of the mining and metallurgical industry.

There were no reported incidents of any type of discrimination cases in 2011.

Procedures for local hiring

When Outotec starts a new operation in a country, normally an expatriate is sent to take care of integration of the new operation. However, the target is that senior management of the local operation is hired locally. Currently Outotec has an office or operating entity in 25 countries and a local manager in 83 percent of them.

Case, Safety award:
Arcelor Mittal selected Outotec as the Number One Contractor for Safety Performance in Canada. Arcelor Mittal is the world's leading steel company, operating in more than 60 countries. In Canada, Arcelor Mittal produces steel products and iron ore with extensive mining, steelmaking, and tube manufacturing facilities in the provinces of New Brunswick, Ontario, and Quebec.

John Blais, Outotec's Safety Specialist in Canada says, "I am pleased to announce that Arcelor Mittal, celebrating their global safety day, selected and awarded Outotec as the Number One Contractor on site for Safety Performance. It was noted that there are some 1,200 contractors that expedite work on their sites throughout the year completing various jobs. It was also noted that we worked 100,000 man-hours with no Lost Time Injury. We had daily approximately 16–24 men on site performing various tasks, for example, torpedo car demolition and coil repair, all of it work that involves high risk and requires careful attention."

Employee categories, gender balance and age structure	2011	2010	GRI indicator
Total number of employees in each employee category*		n/a	LA13
Senior management	135		
Middle management	496		
Specialists	1,959		
Blue-collar workers	516		
Senior management (%)**		n/a	LA13
Women	11		
Men	89		
< 30 years old	0		
30–50 years	68		
> 50 years old	32		
Middle management (%)**		n/a	LA13
Women	12		
Men	88		
< 30 years old	3		
30–50 years	68		
> 50 years old	29		
Specialists (%)**		n/a	LA13
Women	27		
Men	73		
< 30 years old	21		
30–50 years	57		
> 50 years old	22		
Blue-collar workers (%)**		n/a	LA13
Women	4		
Men	96		
< 30 years old	22		
30–50 years	49		
> 50 years old	29		
Board of Directors (%)		n/a	LA13
Women	14		
Men	86		
30 years old	0		
30–50 years	29		
> 50 years old	71		

* Grading of all employees not completed yet (n=3106; coverage=80%)
** Data coverage 80% because of local restriction of data reporting

Targets related to employees

Target for 2011	Performance in 2011	Target for 2012	GRI indicator
Have a dialogue with employees about Outotec values, principles, and the Code of Conduct to redefine them. Long-term target is to provide training related to the Code of Conduct to all employees.	Target was partially achieved. Outotec Principles were revisited, and approximately 60% of employees participated in workshops and gave their input in an online questionnaire. In the Management Forum, approximately 110 senior leaders started ethical dialogue on various corporate responsibility and values related topics.	**Finalize and publish the refined set of Outotec Values and integrate them into the management system. Publish the new Code of Conduct and a related e-learning platform. Continue ethical dialogue in internal social media with all employees and in the Management Forum.**	SO3
Implement the HC master data system globally and develop it to include relevant personnel data needed to establish corporate-wide indicators.	Human Capital master data system covering basic personnel data was implemented globally.	**Define and implement the HC Master Data related processes. Develop the HC Master Data system and HC reporting further.**	LA1–13
90–95% of employees have a Performance Development Dialogue.	94% of employees had a Performance Development Dialogue. A new integrated tool to support all performance management related processes was developed.	**90–95% of employees have their PDD using the new tool. Develop the tool to include a module for creating individual development.**	LA12

Read also Interaction with stakeholders, p. 23.

R&D and innovation

Outotec's success is based on a strong portfolio of world-class technologies, robust expertise and, innovative personnel. To stay at the forefront of sustainable solutions, we continuously improve and develop our proprietary technologies. We will further strengthen our portfolio of sustainable solutions for the entire value chain from ore to metals and complement our in-house R&D with acquisitions and partnerships.

We cooperate with universities, research institutes, and customers in R&D. Outotec has over 580 patent families, over 5,300 national patents and applications, and over 70 trademarks. Key areas of expertise are physical separation, metallurgy of solid-state materials, chemistry including pyro- and hydrometallurgy, as well as gas handling technologies. We have two in-house research centers, state-of-the-art laboratories, and test facilities, which have made it possible that dozens of Outotec technologies are today best available techniques (BAT) and industry standards. Outotec has also extensive knowledge of material technology, plant and equipment engineering, equipment and process automation, and the implementation of large international projects.

Outotec actively strives to explore new applications for its technologies. Among other sectors, energy and industrial water treatment in particular offer significant and attractive growth opportunities. Both of these sectors require solutions for utilizing scarce raw materials in an efficient and environmentally sound way. For some time now, rising costs of energy and stringent legislation have led users to seek out energy efficient technologies. Water is also an increasingly scarce resource, and its efficient use, along with the

R&D and innovation	2011	2010	2009	GRI indicator
R&D expenditure, EUR million	**33.5**	28.5	20.5	EN6, EN26
R&D expenditure, % of sales	**2.4**	2.9	2.3	EN6
R&D grants, EUR million	**2.1**	1.3	2.0	EC4
Amount of new patent applications filed	**41**	50	56	
New national or regional patents granted	**326**	287	286	
Amount of patent families	**583**	565	539	
Proportion of Environmental Goods and Services in order intake, %	**87**	72	76	EN6

Target for 2011	Performance in 2011	Target for 2012	GRI indicator
Increase the percentage of Environmental Goods and Services (EGS) in order intake, long-term target is to reach a level of 80–90%.	87% of order intake classified as EGS.	**Keep the percentage on the level of 80–90%.**	EN6
Increase the investment in R&D in line with business growth.	Target partially achieved. R&D expenditure was EUR 33.5 million, representing a 17.5% growth from 2010. However, because of the strong business growth in 2011, the share of R&D of sales was 2.4%, which is lower than in 2010 (2.9%).	**Continues**	EN6, EN26
Continue growth through acquisitions to complement Outotec's technology portfolio.	Acquisitions of Energy Products of Idaho and ASH DEC brought new sustainable technologies for renewable energy applications and phosphorous recycling to the company.	**Continues**	EC1

recycling and purification processes, is a goal of steadily mounting importance in the customer industry.

The growth opportunities offered by adjacent industries, such as energy and industrial water treatment, are attractive as they show high synergy potential and manageable risks. Outotec's energy and environmental solutions business includes offerings for bioenergy, water, improved heat recovery, and applications for oil shale and oil sands. Naturally, all of the company's business areas focus on energy and water efficiency, emission reductions and waste management in their product development. In addition to in-house R&D, Outotec develops sustainable solutions in partnership with other companies. For example, by utilizing its expertise in solid-water separation technologies, Outotec cooperates with Kemira to improve the oil recovery and water efficiency in oil sands extraction.

In 2011, Outotec launched a two-stage partial roasting process to purify contaminated copper and gold concentrates as a pre-treatment to actual extraction processes. We also established a new continuous pilot plant at our research center in Frankfurt, Germany to test customer concentrates with the new process.

Another highlight of 2011 was when Outotec and one of the world's leading sustainability consulting companies, PE International (Germany), started cooperation to develop a new software interface for evaluating metals production sustainability and life cycles. The new interface, which will be based on PE International's GaBi 5 and Outotec's HSC Chemistry® software, will markedly facilitate determining of the best available technique (BAT) from several alternatives. The new interface will allow users to develop product and process modeling simulations and scenarios using a life cycle perspective. In addition, Original Equipment Manufacturers (OEM) and metals manufacturers will be able to plan their operations and make material selection decisions based on the sustainability and life cycle information of current and future metal manufacturing scenarios and their environmental impacts. This will help to lower the environmental footprint of these products and production facilities.

Outotec granted a Technology Award to 25 employees in 2011 to encourage creation of new inventions and innovations and to reward individuals and teams for their significant contributions to Outotec and the industry in general. The awards totaled EUR 110,000.

Outotec also agreed to collaborate with the Ministry of Mineral Resources and Energy of Mongolia (MME) to support MME in its development of Mongolia's mining and metallurgical industry utilizing country's vast mineral resources by using the most sustainable approaches possible.

Targets related to R&D

An essential part of Outotec's strategy is to complement the company's technology portfolio of sustainable products and services through acquisitions. In R&D, Outotec focuses on technology development to increase resource efficiency, for example by reducing energy and water consumption and environmental impacts of the company's products and services. We plan to keep the current percentage of Environmental Goods and Services (EGS) in our offering and the order intake on the level achieved in 2011 through product development and acquiring sustainable technologies.

Code of Conduct, values and principles

As defined in our Corporate Responsibility Policy, corporate responsibility needs to be an integral part of all Outotec operations, activities, and decision-making everywhere we operate. Compliance with laws forms the basis of all Outotec's actions. This Policy serves currently as guidelines for Outotec's business ethics, and management as well as employees are expected to comply with it.

Corporate responsibility policy comprises Outotec's Code of Conduct, anti-money laundering policy (approved in 2011) prohibits questionable vendor and customer arrangements, competition compliance policy removes obstacles from free and fair trade practices, and disclosure policy provides for timely and accurate investor communication.

In order to develop our performance and reporting, we strive for a continuous dialogue on corporate responsibility issues with our customers, employees, shareholders, suppliers, as well as public and non-governmental organizations. As a listed company, Outotec is committed to increasing the shareholder value. We deliver on this commitment by developing and maintaining competitive and profitable operations based on ethical business practices. We apply principles of good corporate governance and transparent accounting. Outotec's Corporate Governance Statement 2011 has been prepared in accordance with recommendation 54 of the Finnish Corporate Governance Code and related instructions issued by the Securities Markets Association.

	UN Global Compact Ten Principles	Outotec
Principle 1:	Businesses should support and respect the protection of internationally proclaimed human rights	• Outotec Principles • Corporate Responsibility Policy • Quality, Environmental Health and Safety (QEHS) Policy • Local health and safety systems • Employee training and development • Collective bargaining agreements
Principle 2:	Businesses should make sure that they are not complicit in human rights abuses	• Corporate Responsibility Policy • Outotec Principles • Supplier Policy
Principle 3:	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining	• 54% of employees covered by collective bargaining agreements
Principle 4:	Businesses should uphold the elimination of all forms of forced and compulsory labor	• Corporate Responsibility Policy • Supplier Policy
Principle 5:	Businesses should uphold the effective abolition of child labor	• Corporate Responsibility Policy • Supplier Policy
Principle 6:	Businesses should uphold the elimination of discrimination in respect of employment and occupation	• Corporate Responsibility Policy
Principle 7:	Businesses should support a precautionary approach to environmental challenges	• R&D, technology development to improve process solutions environmental performance, comply with all relevant environmental legislation, risk management (materials used, products, processes) • QEHSmanagement systems • Risk management system • Technology Policy
Principle 8:	Businesses should undertake initiatives to promote greater environmental responsibility	• R&D, technology development • Energy efficiency agreements in Finland • QEHS systems • Outotec products and services comply fully with local environmental laws and regulations
Principle 9:	Businesses should encourage the development and diffusion of environmentally friendly technologies	• BAT offerings, sustainability KPIs in Outotec solutions • Outotec mission and vision • Sustainability features in product design
Principle 10:	Businesses should work against corruption in all its forms, including extortion & bribery	• Corporate Responsibility Policy • Anti-money Laundering Policy

Committing to the Global Compact initiative

Outotec has signed the United Nations Global Compact initiative and committed to its principles of human rights, environment, labor, and anti-corruption in 2010. By joining the corporate responsibility

Global Compact initiative Outotec has expressed its intent to further advance sustainability and social responsibility principles in its business practices.

In August 2011, Outotec submitted its first Communication on Progress (COP) to the United Nations Global Compact initiative. Outotec's COP qualifies for the Global Compact Active level. In spring 2011, Outotec was invited to give a presentation in the Global Compact Nordic Network meeting held in Helsinki.

Redefining values, principles and Code of Conduct

Outotec Principles are Sustainable technology, Lead in life and work, Pro customer, and Share and care. In 2011, a dialogue with employees was started about Outotec values, principles, and Code of Conduct with the purpose of discussing and redefining them. Approximately 60 percent of employees participated in workshops and gave also their input in an online questionnaire. Approximately 110 senior leaders started also an ethical dialogue in the Management Forum on various corporate responsibility and values related topics. The work will be finalized in 2012.

Compliance with regulations and laws

Outotec endorses ethical business practices and complies with national and international laws and regulations. In 2011, there were no incidents of corruption or anti-trust behavior reported. No fines or sanctions for the non-compliance with laws and regulations were imposed. Nor had any issues emerged concerning the rights of indigenous people.

Our products comply with industrial health and safety standards and regulations. We provide extensive product information for the customers in the form of user manuals and technical descriptions. No non-compliance concerning the provision and use of products and services has been reported to Outotec.

In 2011, Outotec's subsidiary in South Africa embarked on a program to develop its Broad-Based Black Economic Empowerment (BBBEE) initiated by the South African government to distribute wealth across as broad a spectrum of South African society as possible scorecard and become compliant to industry expectations to this regard. Various initiatives were planned and executed, which resulted in achieving a Level 6 Contributor status to BEE. This means all customers within South Africa can now recognize 60 percent of the money they spend on Outotec products as BBBEE Preferential Procurement.

Internal control and audit

Internal control is a fundamental part of Outotec's corporate governance system. Internal control can be defined as a set of processes designed to provide reasonable assurance on achievement of company objectives in areas of effectiveness and efficiency of processes and economic use of resources, reliability of financial reporting information, compliance with external rules and regulations, as well as internal policies and procedures.

Internal audit helps Outotec to comply with good corporate governance, give an independent perspective for management in considering and reviewing company operations, and accomplish its objectives by bringing a systematic, disciplined approach to evaluating and improving the effectiveness of risk management, control, and governance processes.

The existing internal and external audit processes take into account eventual corruption suspicions. Legal seminars are held throughout the organizations on a regular basis to train employees in the organization's anti-corruption policies and procedures.

Targets regarding Code of Conduct, values and principles

The target for 2012 is to publish a refined set of Outotec Values and integrate them into the management system, including recruitment, performance evaluation, promotions, and leadership development. The code of conduct will be renewed and an e-learning platform built. Ethical dialogue will continue in internal social media with all employees and in the Management Forum. Long-term target is to provide training related to the Code of Conduct to all employees.

Read also our Corporate Responsibility Policy at www.outotec.com/sustainability.

Target for 2011	Performance in 2011	Target for 2012	GRI indicator
Have a dialogue with employees about Outotec values, principles and Code of Conduct to redefine them. Long-term target is to provide training related to the Code of Conduct to all employees.	Target was partially achieved. Outotec Principles were revisited, and 60% of employees participated in workshops and gave also their input in an online questionnaire. Over 100 senior managers started ethical dialogue on corporate responsibility and values related topics.	**Finalize and publish the refined set of Outotec Values, and integrate them into the management system.** **Publish the new Code of Conduct and a related e-learning platform.** **Continue ethical dialogue in internal social media with all employees and in the Management Forum.**	SO3

Governance and sustainability

Outotec follows the Finnish Corporate Governance Code (available at www.cgfinland.fi) issued by the Securities Market Association and adopted by the NASDAQ OMX Helsinki stock exchange. Outotec complies with the regulations and recommendations issued by NASDAQ OMX Helsinki.

At Outotec, the highest level of responsibility for issues related to sustainability of our products and services lies with the Technology and Product Board chaired by the CEO. Decisions made, actions, and commitments are reported to the Board of Directors. In addition, Outotec has a separate sustainability working group that meets two to three times annually. The group is headed by the Chief Technology Officer (CTO), and decisions made at these meetings are communicated to the Technology Board including the CEO and to Business Areas' Presidents.

Sustainability working group

In 2011, Outotec's Technology and Product Board and sustainability working group set sustainability targets and monitored and reviewed the company's sustainability actions. The CEO received regular updates on sustainability-related issues from the CTO, who in turn received reports from the Director of Environment and Sustainability.

The purpose of the working group was to identify Outotec's actions related to sustainability and climate change. The group was also responsible for the annual calculation of the company's carbon footprint and the emissions avoided through the use of Outotec's technology solutions. It is through these means that the company monitors the progress it has made in its actions to mitigate climate change issues.

Monetary incentives for management related to sustainability

Employees whose responsibilities include working with sustainability and environmental issues have personal targets set in their annual bonus plans. This pertains mainly to environmental and sustainability managers. Inventors working with new, patentable solutions also receive monetary rewards for their inventions. In general, the inventions that qualify are those with potential for introducing energy savings and reductions in CO_2. Furthermore, Outotec rewards all employees for making proposals that improve the sustainability of the company's internal processes.

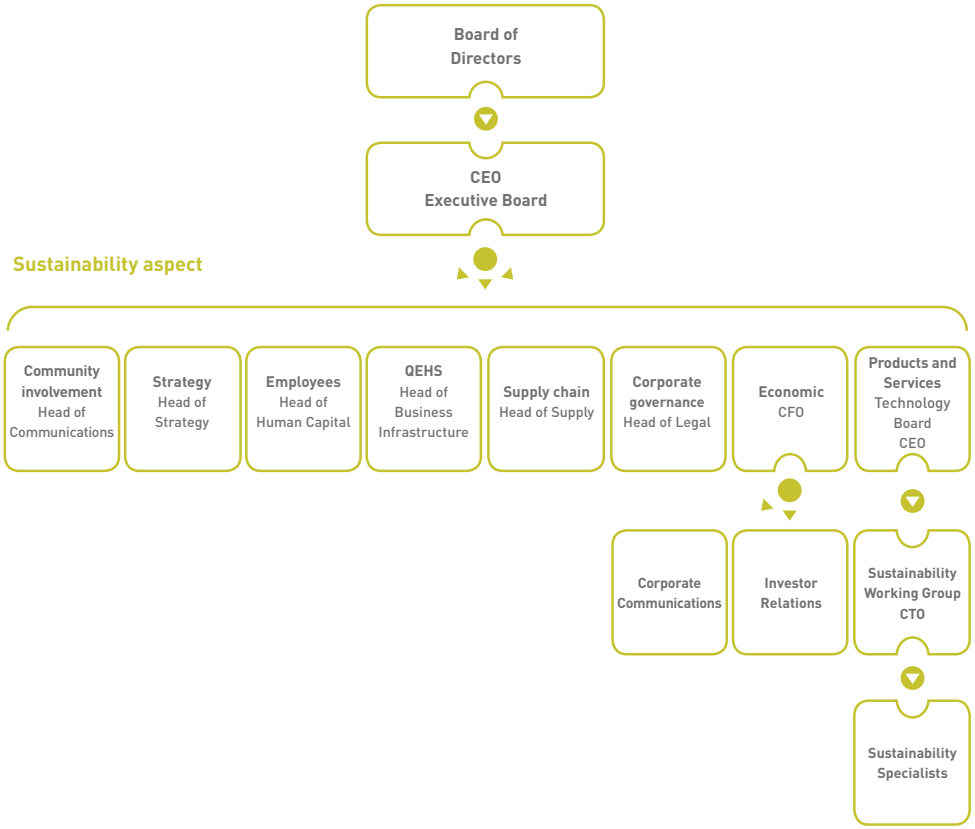
The company's research center in Pori, Finland applies a reward system based on balanced scorecard indicators. The majority of Outotec's technology development projects focus on raw material and energy efficiency improvements and thus CO_2 emissions reductions, but management of other emissions has been the target a longer period of time. Water efficiency is also often a driver for Outotec's research, and customers expect Outotec to develop new technologies that result in energy and cost savings. Employees of the research center are rewarded if the number of inventions and patent applications exceed a defined annual target.

Board work

The Board of Directors of Outotec consists of seven members, six of which are independent. Tapani Järvinen, who was the former CEO of the company until the end of 2009, is defined as dependent because of his employment relationship. One of the Board members is female.

In 2011, the Board of Directors met 19 times. The average attendance of

Decision making in sustainability issues



members at Board meetings was 95 percent. The Board of Directors assesses its performance annually. The annual evaluation regarding 2011 was conducted by an external advisor.

The remuneration of the Board members is described in the Outotec Financial Statements 2011, p. 78. There is no linkage between the compensation for Board members and the social or environmental performance.

The Board of Directors established a human capital committee in 2010 consisting of three members. The Human Capital Committee was established to ensure that all human capital related topics, such as ethics and values, resourcing strategy, competence and performance management, and compensation arrangements support the strategic aims of the business and enable the recruitment, development, motivation, and retention of key personnel while complying with the requirements of regulatory and governance bodies and satisfying the expectations of shareholders. The human capital committee met five times in 2011 and all members were present.

The Board of Directors in its entirety determines the qualifications and expertise of the candidates for the members of the board and decides who will be submitted to the Annual General Meeting. One objective of Outotec's Board of Directors is to have both genders represented when proposing candidates for future compositions.

The Board has an audit committee consisting of four Board members, who are independent of the company. The committee's task is to review, in greater detail than is possible for the Board as a whole, the auditing work, the internal controls, the scope of internal and external audits, invoicing by the auditors, the company's financial policies, and other procedures for managing company-specific risks. In addition, the audit committee prepares recommendations to the General Meeting of Shareholders concerning the election and fees of the auditors for the company. In 2011, the Audit Committee met four times and all members were present.

Target for 2011	Performance in 2011	Target for 2012	GRI indicator
Improve sustainability governance processes, data collection, and reporting.	Data collection was improved: - New data collection systems were used (e.g. SAP Master Data, financial reporting system HFM) - Six new indicators and four indicators changed from partly to fully reported Four CR team meetings in 2011 Sustainability working group meetings Sustainability materiality workshop	**Continues** **Improve the system for sustainability KPIs collection.** **Include relevant sustainability KPIs in core business and shared function processes.**	
Update the acquisition process to include sustainability assessment in due diligence.	Potential acquisition targets were assessed by using the following indicators: - Are solutions energy efficient - Is water usage efficient - Does the acquisition provide an opportunity to offer environmentally friendly technologies - Does the acquisition promote greater environmental responsibility - How the target respects employee well-being, local health and safety systems, local bargain agreements and human rights in overall - Ethical standards - International norms	**Continue sustainability assessments in acquisitions.**	EC1
Publish Outotec's first GRI-based sustainability report and web-based communication platform.	First GRI report published. Sustainability website published.	**Continue reporting based on GRI 3.0. The long-term target is to follow GRI G4 guidelines.**	

Targets related to governance

We continue improving our sustainability governance processes, data collection, and reporting. In 2012, the focus is on sustainability KPIs.

Read more on Outotec's Corporate Governance Statement 2011 at www.outotec.com/cg.

Interaction with stakeholders

Outotec's most important stakeholders are customers, current and future employees, suppliers, shareholders, and the scientific community. These key stakeholders have been prioritized in the sustainability working group. In addition, we cooperate with media as well as public and non-governmental organizations. Outotec has dedicated functions to deal with the key stakeholders in an open and continuous dialogue and to enhance transparency.

Keynote speakers of Outotec's client event in Shanghai were Pertti Korhonen, President and CEO of Outotec; Matti Heimonen, Consul General of Finland; Chen QuanXun, Chairman of CNIA; Wu ShaoHui, President and CEO of ENFI and Zhu JiaMing, Technology Management Department General Manager of CHALIECO. Wang XiaoYang from Ministry of Industry and Information Technology; Guy Thiran, Secretary General of Eurometaux; and Li Jie Dean, Ph.D, Professor, from Central South University presented the sustainability issues for the industry. Outotec also signed a collaboration agreement with ENFI.

Customers

Outotec's customers comprise large global mining companies as well as small and medium-sized mining and metallurgical companies operating locally. In addition, our customers include companies utilizing natural resources as their raw material, such as fertilizers and energy producers. We have long relationships with the majority of our customers. As a provider of tailored technological solutions and services, we continuously interact with our customers on various levels during the lifetime of their investment or plant. Personal discussions and site visits are always needed in Outotec's business. In a number of cases we have joint R&D projects with the customers in order to develop the best possible solution for the customer's specific need.

In addition to regular business contacts, we organize seminars, users' meetings, training, and workshops for the customers. To get feedback and information on customers' expectations, we make customer satisfaction surveys and case study interviews. Furthermore, it is industry practice that the experts of both producers and technology suppliers exchange information and experiences and meet frequently at technical conferences and trade shows around the world.

In 2011, Outotec agreed on collaboration with the Ministry of Mineral Resources and Energy of Mongolia (MME). According to the agreement, Outotec supports MME as a technical advisor to develop mining and metallurgical processing of Mongolian mineral resources in the most sustainable way.

Outotec organized a client meeting in Shanghai in May 2011 in cooperation with China Nonferrous Metals Industry Association. The event was built around the theme of sustainability in the mining and metals processing industry and gathered together 140 professionals from different mining and metal processing companies. The meeting provided a good platform for the Chinese mining and metal processing industry to enhance cooperation and share information. Additionally, Outotec experts presented our technologies and their impact on sustainability including energy savings, emission reduction and recycling.

Sustainability expectations

In 2011 Outotec studied its customers' sustainability targets and requirements they set on their suppliers. The study included 195 companies and was based on information publicly available.

Case, Global meeting of Outotec's copper and nickel Flash Smelting licensees in Zambia:
The world's copper and nickel smelting experts met in Livingstone, Zambia at the 13th International Flash Smelting Congress organized in October 2011 by Outotec for the licensees of the Outotec® Flash Smelting technology. The Flash Smelting Congress is a users' meeting where the participants can learn about new technological improvements and exchange their experiences. They also have the opportunity of visiting smelters with new modernizations, expansions, or new technology.

The 13th Congress gathered together over 100 participants from 20 countries. The program included visits to two smelters: BCL smelter in Botswana and KCM Nchanga smelter in Zambia. The key topic of the week-long Congress was 'Thinking ahead smelter life-cycle'. The congress session themes covered the smelter life-cycle issues, green smelting, recovery and recycling, thinking ahead, and future challenges. Additionally, sustainability was covered increasingly in the sessions in terms of environmental issues and health and safety.

According to the study, the most reported targets were on energy consumption, greenhouse gases (emissions), water use, waste management, and safety performance. The requirement for suppliers was often the supplier's code of conduct, or sometimes customers expect suppliers to follow their own code of conduct. Other requirements Outotec's customers set on their suppliers were linked to human right issues and sustainability.

In addition, Outotec studied the sustainability expectations of twelve major metals producers based on their sustainability reports. As expected, the main challenges were related to energy efficiency, GHG emissions reductions, GHG emissions trading, other emissions to air, water efficiency, water protection, waste management, efficient use of resources, environmental protection, biodiversity, as well as health and safety. Because of the mature nature of the sampling group, many of the planned actions were targeted to the improvement of existing operations. For the companies studied, it is of utmost importance that sustainability not only ensures their license to operate but also improves their profitability. For instance energy efficiency, reduced CO_2 emissions, and efficient resource use are essential factors for improved cost-effectiveness.

Outotec's customers are very well aware of their sustainability aspects and publish this information in their sustainability reports and web pages. Often environmental legislation drives their activities to improve their sustainability performance (e.g. emission reductions, land use, safety). However, customers are increasingly realizing the potential to improve profitability by energy, water, and resource efficient processes.

Awards in customer work

Boliden Harjavalta, producing anode copper and nickel matte in its smelters in Harjavalta, Finland, gave its first ever Top Partner award in 2011 to Outotec. "The Top Partner award is given for good work performance. Outotec Service Team has had solid performance in several areas of appraisal. Their results in safety development, environmental protection, cost efficiency, and quality of operations as well as collaboration willingness and ability were decisive factors in our selection," explained Boliden Harjavalta's President Jyrki Makkonen. There was a special selection committee consisting of the management and employee representatives of Boliden Harjavalta. 21 areas of appraisal were assessed, and the criteria included both hard facts and soft values.

Sterlite Industries, a subsidiary of Vedanta in India, rated Outotec as an A-grade supplier with the highest rating in all its criteria, covering quality performance, delivery performance and buyer feedback on vendor. Outotec has delivered tankhouse equipment to Sterlite's copper refinery in Tuticorin and Outotec's service team has been working in the refinery in 2010 and 2011.

Current and future employees
Outotec's aim is to be an open and equal work community. The company culture encourages everyone to discuss and develop Outotec's operations. Regular briefing and interactive events are organized for personnel regarding the company's financial situation, targets, and successes. In addition, various channels are used for discussion and influence, such as the intranet, Outotec Round-Table, and meetings with employee representatives. A new collaboration tool was introduced in 2011 to enable interactive communication and information sharing globally.

Outotec Young Professionals network was piloted in Finland in 2011 and will be expanded globally in the future. The network is meant for young or young-minded Outotec employees to ease networking across business units, improve professional pride, and distribute career experiences across the organization. The target is to create a pool of young, active, and energetic people for fairs, career infos, customer events, student visits, photo shoots, summer trainee mentoring, and round table discussions. The new network arranged activities with positive thrive: lunch dates, after work activities such as game evenings, sports, and picnics.

Read more about our employees, p. 11.

Students

We have identified students and future employees as an important stakeholder

Case, Student cooperation:
In 2011, Outotec awarded Sustainability Prizes for four students participating in Endeavour 2011, celebrating 150 years of Engineering Education at The University of Melbourne. There was a prize for each of the departments: Mechanical Engineering, Infrastructure Engineering, Computer Science and Software Engineering, and Electrical and Electronic Engineering. The prizes promote the importance of engineering design, innovation, and creativity to sustainability. The winners were judged on the merit of the sustainability of their project and innovation.

group with an increasing interest in sustainability and our performance as a responsible employer.

To increase recognition and to strengthen its employer image, Outotec has actively sought different forms of collaboration with university students, especially in Finland, Germany, Brazil, Australia, and Chile. This collaboration is planned to be expanded in other countries as well. We organize visits, internships, cooperative work on research, topics and supervision for diploma theses, field trips to production plants, and lectures on various topical issues. Many graduate students have contributed to the development of Outotec's technologies through their M. Sc. and post-graduate research.

Investors

In recent years, investors have been requesting more and more information on Outotec's corporate governance and sustainable technologies.

Widely spread shareholder base

Outotec's investor base is geographically widely spread and the company's free float close to100 percent. Some half (December 2011) of the company's shares are held outside Finland and the largest three shareholders account for some 15 percent of the shares. The shareholder structure means there are numerous requests for information from the capital markets regarding the company's business operations, financial performance, corporate governance as well as environmental and social issues. The aim in communicating with the capital market is to ensure that the market has a true and fair view of the company's financial position, operations, and future prospects in order to make investment decisions.

On November 8, 2011, holding of Tamares Nordic Investments B.V. in shares of Outotec exceeded 5 percent and was 2,356,519 shares, representing 5.15 percent of the share capital and votes in the company (December 31, 2011: 2,457,219 shares, 5.37%). At the end of 2011, Outotec had 13,921 shareholders. Shares held in 17 nominee registers accounted for 54.19 percent and Finnish households held roughly 11.3 percent of all Outotec shares.

Continuous dialogue

Outotec's IR team has a continuous dialogue with investors and analysts and meets them on a regular basis at quarterly reporting events, investor meetings, road shows, industry semi-

Target for 2011	Performance in 2011	Target for 2012	GRI indicator
	Outotec established a Facebook page and started to use Twitter and LinkedIn more actively for recruitment and communication.	**Further improve the employer image to become a preferred employer: increase use and develop content of social media channels (such as Facebook, Linkedin, Twitter, XING). (NEW)** **Survey on employer image using social media participants.**	

nars, and annual general meetings. In conjunction with the interim and annual financial reviews, the company hosts webcasts in order to disseminate public information simultaneously to the market. In addition, Outotec organizes the CEO's mid-quarter Q&A sessions (started in 2010) and Capital Market Days (CMD). As part of Outotec's CMDs, management sheds more light on company strategy, business operations, and long-term plans, as well as introduces technologies and solutions in more detail to the capital market. In addition to Finnish law, EU directives, Corporate Governance, and stock exchange rules and regulations, Outotec's IR policy is based on self-regulation, which is embodied, for the most part, in Corporate Governance and Outotec's Disclosure Policy.

In 2011, Outotec had 28 road show days and hosted 130 investor meetings at the company headquarters. 20 analysts conducted research on Outotec. One key task for the company in 2011 was to introduce the new CFO to the capital markets. Capital Markets Day 2011 was held in London on November 15. "Sustainable technology" was the overall theme for the day with presentations from business area heads as well as the CEO and the company's sustainability expert. Some 75 attendees participated the day including both analysts and investors. The event was webcasted live. The CEO's Q&A sessions continued to be an important channel in order to maintain a dialogue in between the interim reviews and to comply with fair disclosure. These live webcasts aim to give further clarity on information made public earlier. In order to serve the capital market efficiently, to ensure equal access to company-related information, and to comply with disclosure requirements, the live webcasts are recorded and available on demand for future reference.

Outotec included in the Carbon Disclosure Leadership Index

Being transparent means that we try to answer, to the extent possible, to various sustainability-related questionnaires sent by investors and analysts. One example of these is the Carbon Disclosure Project (CDP). For the third consecutive year Outotec was included in the Nordic Carbon Disclosure Leadership Index, which highlights companies with the most professional approach to climate change disclosure practices. Outotec received 81 out of 100 points and was ranked among the top 10 percent of the 260 companies in the CDP's Nordic Report 2011. The CDP's analysis is based on greenhouse gas emissions, emission reduction targets, as well as on understanding of risks and opportunities associated with climate change.

The index provides an evaluation tool for institutional investors and other stakeholders.

In 2011 Outotec organized a high-level Non-ferrous Metal Sustainable Solutions Technical Meeting in Beijing, China. The meeting was convened by China Non-ferrous Metals Industry Association (CNIA) on behalf of the Ministry of Industry and Information Technology of the People's Republic of China (MIIT). The aim is to enhance, develop and apply both Chinese and foreign advanced technologies to reduce energy consumption and emissions in the non-ferrous industry and, at the same time, initiate cost savings in metals production. Chinese metals production and engineering companies took also part in the two-day meeting, in which the major challenges of the industry were presented in a very open way.

Good reputation amongst investors

In 2011, Outotec was ranked 8th best company in a survey made by Reputation Management Consultancy Pohjoisranta for evaluating the reputation of 100 listed companies in Finland in 2011. Outotec's ranking was the 6th in 2010.

The survey has six different dimensions to measure reputation, using factors related to corporate culture and leadership, financial excellence, public image, products and services, social responsibility, and operational dynamics.

Outotec made a remarkable leap landing in the 7th place in 2011 from 23rd in 2010, and thereby joining the top 10 websites in Finland, according to a survey made by the KWD Webranking. The ranking is based on an annual survey sent out to investors, financial analysts, business journalists, and students in Europe. 296 professionals from the capital market replied to the questionnaire, which was set out to examine how they use the web and what content and functionalities they require of corporate websites. Outotec's website was ranked 7th scoring 66 points out of 100. The average score for Finnish corporate websites was 55.89 points. The career and corporate social responsibility sections of Outotec's website were recognized, both ranking high in the Finnish ranking and the industrial sector ranking according to the KWD Webranking report.

Read more about dividends in the Outotec Financial Statements 2011, p. 71 and about shareholders and share-related key figures on p. 57.

Suppliers

Outotec uses thousands of suppliers around the world for its customers' projects. These include mechanical workshops, component manufacturers and local construction and engineering companies.

In 2011, Outotec took two new internal policies in use to set the framework for interaction with suppliers. The policies provide the governance with a way to develop and operate a reliable and agile supply base supporting our strategy. In addition, a new Supplier Policy was published. Outotec expects its suppliers to comply with this policy in their dealings with Outotec, their own employees and suppliers, as well as with third parties. The policy covers among other things principles of ethical conduct, compliance of laws and regulations, environment, health and safety, labor relations (e.g. no child or forced labor), intellectual property, and improper benefits.

Read more about our suppliers in Impact of our supply chain, p. 45.

Scientific community

As a technology company, we cooperate closely with universities, research institutes, and international organizations.

Outotec continued its active work in the development of environmentally sound technologies in various organizations. As an expert in the European Union's technical working group and in an environmental working group of the Federation of Finnish Technology Industries, an Outotec representative participates in the updating of the BREF on non-ferrous metals, a reference document which defines the best available techniques (BAT). In addition, Outotec has been involved with the work of the International Copper Association's Health, Environment and Sustainable Development Steering Committee, among other organizations. In addition, one of Outotec's experts is a lead author and editor of a document on recycling technology under the auspices of Dr. Ernst von Weizsaecker, the co-chair of the UNEP resource panel.

The board of the Aalto University School of Science and Technology established the Tapani Järvinen Environmental Technology Fund in 2010 in honor of Outotec's retired CEO Tapani Järvinen. The fund aims to promote the research of environmental technology and will fund the research and development work of distinguished individuals. The basic capital for the fund was donated by Outotec. In 2011, a scholarship from CEO Tapani Järvinen's environmental technology fund for modeling environmentally friendly chemical processes was granted to Prof. Ville Alopaeus.

Read also Commitment to external initiatives, p. 28.

Commitment to external initiatives

Outotec works actively in various organizations and in engaging with policy makers. A representative of Outotec participates in the definition of the best available techniques (BAT) for non-ferrous metals as an expert in the European Union's working group. In addition, Outotec has been involved in the committee work of the International Copper Associations' Health and Environment Program, among others.

The United Nations Global Compact initiative

Outotec signed the United Nations Global Compact initiative in 2010, committing to its principles of human rights, environment, labor, and anti-corruption. By joining the corporate responsibility Global Compact initiative, Outotec expresses its intent to further advance sustainability and social responsibility principles in its business practices. In August 2011, Outotec submitted its first Communication on Progress (COP) to the United Nations Global Compact initiative.

Carbon Disclosure Project

Outotec has participated in the Carbon Disclosure Project (CDP) since 2009. The CDP analysis is based on a questionnaire focusing on greenhouse gas emissions, emissions reduction targets, and the risks and opportunities associated with climate change. Companies are scored on their climate change disclosure, with high scores indicating good internal data management and an understanding of the climate change related issues affecting the company.

Read more about our performance in the CDP 2011 in Investors, p. 26.

Support and active cooperation with scientific communities

Outotec donated EUR 245,000 to Finnish universities to further enhance the level of research and education and to strengthen the company's wide cooperation with the scientific community.

Sponsorship of the Millennium Technology Prize

Outotec continued its sponsorship of the Millennium Technology Prize. In 2010, the prize was awarded to Professor Michael Grätzel, who is recognized as the developer of third-generation dye-sensitized solar cells. Grätzel cells are likely to have an important role in low-cost, large-scale solutions for renewable energy. The next prize will be awarded in June 2012.

Research program to foster sustainable water use

Since 2010, Outotec has participated in an industrial research program of the University of Alberta intended to foster sustainable water use in Canadian oil sands extraction. In addition, we established a Natural Science and Engineering Research Council of Canada (NSERC) industrial research chair at the university entitled "Water Quality Management for Oil Sands Extraction". The research chair is a joint effort between Outotec and the companies Kemira and Suncor Energy Services, the Canadian government, and the Alberta Water Research Institute. The five-year research program focuses on water quality management studies to address water consumption, reuse, and recycling by the in situ oil sands extraction industry.

Cleantech Finland®

Since its inception, Outotec has been involved in developing the Cleantech Finland® brand together with Finpro. The Cleantech Finland® brand brings Finnish clean energy and environment experts together in an effort to build clean technologies as part of Finland's competitive advantage.

Commitment to rehabilitating the Baltic Sea

Outotec contributed EUR 40,000 to the Baltic Sea Action Group's initiatives to improve the state of the Baltic Sea. In addition, Outotec has been carrying out investigations and development in order to determine the best concepts to remove partly toxic organic contaminants from Estonian oil shale operations, aiming to clean or even reuse the waters for in-house operations, thus reducing pollution to the Baltic Sea. For these challenging waste waters in question, several new innovative and state-of-the-art methods have been applied.

Technology Industries of Finland Centennial Foundation Fund for the Association of Finnish Steel and Metal Producers

Outotec is one of the five founding members of the Foundation aiming to give EUR 300,000 annually in grants and scholarships to students and university research groups. The fund awarded grants for 2011 to the amount of EUR 295,750.

Finnish Business and Society

Outotec is a member of Finnish Business & Society which promotes financially, socially, and ecologically sustainable business in Finland and is a member of CSR Europe, CSR 360 Global Partner Network, and the Global Reporting Initiative.

Support for children and youth

Outotec's support for local communities, whether international, national, or local, primarily targets sustainable development, arts and music, as well as student and youth activities. The focus of Outotec's donations to charitable causes is on projects that aim to improve sustainable development and/or human life.

In 2011, Outotec continued to sponsor the renowned Tapiola Choir, which is composed of about 70 young, talented singers and musicians aged 9 to 18. Outotec also supported a group of young Finnish architects and architecture students that aim at creating socially and ecologically sustainable architecture in their Kouk Khleang Youth Center project in Phnom Penh, Cambodia. Construction of the center will begin in January 2012.

Donations to charitable causes included support for the "Estrellita de Mar" pre-school located in Puerto Huarmey, Peru. The objective of the donation was to make the school facilities suitable and safe for small children and enable them to go to the pre-school in their own hometown.

Outotec employees and the company made a donation to help the victims of the flooding in Queensland, Australia, where many communities were devastated and some families lost everything. Outotec donated a dollar for every dollar that Outotec Australian employees donated to this appeal.

In 2011, Outotec's donations to charitable causes totaled approximately EUR 110,000.

Principal international stakeholder organizations

Organization	Interest area	Outotec's engagement
International Copper Association	Increase the awareness and usage of copper by communicating the unique attributes that make this sustainable element an essential contributor to the formation of life	Member, member of Environment Program Advisory Committee
International Zinc Association	Improvement of zinc production methods	Member
International Chromium Association	Promote sustainable ferrochrome production	Member
International Committee on Ferro Alloys	Promote the holding of International Ferro Alloy Congresses to retain the established high technical standard of the industry.	Member
Eurometaux	Non-ferrous metals industry in Europe	Member via the Association of Finnish Steel and Metal Producers
Federation of European Mineral Programs	Support international education and research	Member
Finnish Environmental Cluster for China (FECC)	Increase the awareness of Finnish environmental solutions in China	Member, consultation
European Industrial Research Management Association	R&D method management and development	Member of the Board
Finnish Business and Society	Promote financially, socially and ecologically sustainable business in Finland	Member
Cleantech Finland	Promote clean technologies	Member since 2009
Baltic Sea Action Group	Improving the state of the Baltic Sea	Member since 2009
EU IPPC Bureau T W G evaluating the reference values for BAT on non-ferrous metals	Ensure in cooperation with the Finnish non-ferrous metals industry that the technologies and emission values relating to them are realistic and reachable	Outotec's employee member since 2007
Excellence Finland	Promote sustainable excellence and competitiveness in Finland	Member
Federation of Finnish Technology Industries	Ensure that the Finnish technology industry has the preconditions for success in the global marketplace.	Member of Technology & Business Working Group, member of Association of Finnish Steel and Metal Producers, Member of Environmental Working Groups
Carbon Disclosure Project	Greenhouse gas emissions reduction	Reporting since 2009
United Nations Global Compact	Business sustainability guidelines	Participant since 2010
Global Reporting Initiative		Outotec sustainability report 2010 according to GRI guidelines
European Technology Platform on Sustainable Mineral Resources	Address the future technological and societal challenges in the European minerals industry	High Level Group participant since 2005
Finnish Metals and Engineering Competence Cluster (FIMECC)	Boost cooperation between companies and research institutes	Member of the Board
Cluster for Energy and Environment (CLEEN)	Facilitate and coordinate world class industry driven research in the field of energy and environment	Member of the Board

Our impact

Metals and sustainability

Though metals and minerals, once extracted, have a very long usage life cycle and are often close to 100 percent recyclable, their production is often linked to negative impacts on the environment as well as on society. As a provider of technologies and services for these industries, we see our role as an essential contributor to a change for the better. As part of the varied solutions we offer, we aim to address the main sustainability challenges facing our customers.

Outotec's role

As a technology company, the bulk of Outotec's impact on the environment and communities unfolds through our customers. Our primary sustainability challenge is therefore to help minimize any negative effects our customers' operations may have on the social well-being in communities. This includes assisting them with reducing their impact on the surrounding environment and aiding them in the reuse and recycling of resources involved in their processes. The minimization of energy and water consumption and the effective utilization of raw materials not only reduce environmental impact but also improve profitability.

The industry's impact on the environment and on local communities

Resource-based industries have great potential to assist the economic development of the communities in which they operate. The mining industry has, for example, aided the development of several areas in the United States, Canada, and Australia, as well as helped Chile to emerge as South America's most successful economy. Unfortunately, there are also many challenges, such as corruption, that countries face when attempting to translate their wealth of natural resources into economic prosperity.

Historically, the mining and metals sectors have been heavy consumers of energy. For this reason, climate change concerns are a significant risk for the industry. Energy is often the most significant cost in the processes of Outotec's customer industries. Energy accounts for around 70 percent of costs in aluminum production, and the energy consumption of concentrators attached to mines amount to approximately 50 percent of total operating costs.

In many mining regions such as Chile and Australia, the quality and quantity of water also pose problems, as the water demands of companies can result in conflicts with local communities that depend on the same resources. Furthermore, mining and mineral work is often carried out in parts of the world that are rich in natural resources, yet particularly environmentally sensitive. Production processes also create slag and other potentially harmful by-products, waste, and eco-toxic emissions.

Read also Industry drivers, p. 34.

Expert's view: Outotec's contribution to sustainable growth of the non-ferrous metals industry in China

Outotec's Director, Environment & Sustainability, Dr. Ilkka V. Kojo is responsible for Outotec's technology portfolio's sustainability. He is also a member of several international stakeholder organizations such as the International Copper Association and WFEO Task Group on Sustainable Development and Mining. In addition, Dr. Kojo has worked closely with the Chinese non-ferrous industry for nearly a decade.

Today we are facing the ecological limits of the planet. It now takes the Earth 1.5 years to regenerate what we use in a year. Fortunately awareness of this development has started to steer decision making in the energy intensive mining and metals industry around the world.

We are now in the situation where the use of the best available techniques and modern infrastructure need to be demanded also by legislation in order to cut down energy consumption and thereby emissions of the industry. These issues are the very ones that initiated Outotec's collaboration with the Chinese authorities in 2011.

Unconventional is the word to describe our cooperation with the Ministry of Industry and Information Technology of the People's Republic of China (MIIT) and the China Non-ferrous Metals Industry Association (CNIA), which is the non-ferrous industry producers' organization. Private company from one side without governmental intermediate consulting the Chinese government is exceptional.

Seemingly our recent, large copper smelter and secondary copper smelter deliveries to China have earned us a reputation as a technology company with sustainable solutions and a perspective that always takes the sustainability dimension into account. Low emissions and low energy consumption have been the absolute precondition for all new smelter projects in China.

To kick-off cooperation we teamed up in a two-day seminar we organized in Beijing in December 2011. The meeting was convened by the CNIA on behalf of the MIIT. Some 30 local influencers from the non-ferrous industry and universities as well as representatives from MIIT addressed the most prominent sustainability issues and demands set by the 12th Chinese Five-Year-Plan. The challenges deal with three dimensions of sustainability: social, environmental, and economic, all which are tightly intertwined. When consulting our customers, our focus is on the environmental dimension including energy, which affects positively the other two. At the seminar we had an opportunity to present our full technology portfolio and thereby alternatives to overcome the challenges addressed.

Sustainable production gives a social license to operate

The framework for the cooperation is that in a global scale China is a major producer of metals. For example, some 25 percent of the world's copper is produced in China, and for aluminum the figure is nearly 40 percent, with a notable 25 percent growth rate last year. Here lies a global dilemma; the world increasingly needs metals, yet ore grades are declining and need to be processed with more advanced technology.

Metal producers in China – as elsewhere – require technologies that enable the highest recovery with minimal use of energy. We have translated this requirement into our mission statement "Sustainable use of Earth's natural resources". We at Outotec have the technologies and the systematic, holistic view of the process to solve the challenge stated above.

It is like a puzzle where every piece has its seamless place. For example Outotec's Flash Smelting and Flash Converting used for copper are sealed processes in which the energy contained in the raw materials is utilized and recycled. This also minimizes the environmental footprint, as it is easy to collect the process gases and capture the contained emissions.

The CNIA is preparing a draft of the emission control legislation to the MIIT to fulfill the sustainability targets required by China's 12th Five-Year-Plan. It forces non-ferrous industry to further cut down energy consumption and emissions and to improve resource efficiency. In most cases those three go hand in hand, and that is where

Outotec's Director of Sustainability, Dr. Ilkka Kojo, gives us an outline of how the metal production is developing in China and how Outotec is supporting the industry development towards the sustainable use of our shared natural resources.

Outotec's solutions can tackle some of the issues.

For that purpose the MIIT and the CNIA ordered us to evaluate the Chinese copper, nickel, zinc, and aluminum smelters' emission levels with the equivalent European ones. According to the assessment, the situation in China is quite close to the levels in Europe. Only the mercury and cadmium levels permitted in China are still ten-fold.

In general, the environmental performance of the Chinese non-ferrous industry is relatively good after making great progress in energy conservation and emission reduction by closing down 'backward' production facilities and allowing foreign, advanced technologies during the previous Five-Year-Plan period.

Today, e.g. 95 percent of the copper is produced with modern technology in China. The remaining 5 percent are those small scale backward plants with insufficient resources for emission control, and they will therefore lose their license to operate in a few years.

Until today, the problem has been insufficient law enforcement by the local authorities who have allowed poor environmental performance. The legislation will be revised this year or the next, and the enforcement has been shifted from regional to governmental level, eliminating "free-riders".

Without any chest pounding we can say that we have been one of the key players in improving the non-ferrous industry's environmental performance in China.

For example, the Yanggu Xiangguang Copper smelter (2007) located in the delicate rural area is a showcase of the state-of-the-art copper smelter operating one Flash Smelting and one Flash Converting lines. It competes neck and neck with any copper smelter in the U.S. or Japan, which are known to be the cleanest in the world due to very strict legislation and our technology. Traditional producer countries Australia and Chile are far behind with the permitted emissions, and some production facilities have been closed down for environmental reasons. In Yanggu, Outotec processes combined with sulfuric acid plants can capture 99.99 percent of the sulfur.

In fact, the mining industry contributes to 1.8 percent of global carbon dioxide (CO_2) emissions, less than the public perception anticipates. The adoption of BAT technologies could save another 280–460 million tonnes of CO_2 emissions in iron & steel, aluminum, and non-ferrous metals production. That should, of course, be a target globally!

Enabling the cleanest possible operations

Still, emission control is just one aspect of the sustainability issues the non-ferrous industry in China, or anywhere in the world, is facing. Another environmental concern is the so called red mud, a residue of refining bauxite in order to provide alumina for the aluminum production. China being the biggest aluminum producer in the world, the country's waste issue is severe. Typically an alumina refining plant produces one to two times as much red mud as alumina. In China that averages to over 30 million tonnes of toxic red mud that is pumped into ponds, which takes up land area that cannot be used for farming or housing now or later.

From the environmental point of view, there is a lot to be achieved in this area. The ultimate goal is to utilize the red mud as a raw material for iron production, because it contains a dominant amount of oxidized iron, but at the moment that is still a future scenario. Meanwhile, Outotec has to offer methods to remove heavy metals and alkaline to lower the environmental burden of the red mud. That technology could really have potential in China and was discussed in the seminar.

New Industrial Emissions Directive harmonizing the environmental permission levels in the EU countries

China is revising their environmental legislation – and the EU is creating its own. In the environmentally conscious EU, the legislation is still inconsistent, currently merely in forms of Directives, which allow member countries some freedom in their adoption. However, a step forward was the Industrial Emissions Directive (IED), which was adopted in November 2010. The principles of this directive were also the basis for the assessment we delivered to the CNIA.

The IED specified the role of the BREF documents and BAT technologies that give information on a specific industrial sector, techniques and processes, current emission and consumption levels, techniques to consider in the determination of the best available techniques (BAT), and associated emission levels. Currently a total of 20 of Outotec's processes are BATs, and we have had an active role in defining the BREF document.

As a technology company without own production, our own emissions are not that much of an issue in a global scale. Instead, we consider having a vital indirect role in supporting our customers to lower the environmental footprint of their operations. And, how do we do that? By determinedly developing new technologies that ensure sustainable minerals and metals processing and a global society as healthy as possible. In our global society the geographical or political borders do not matter.

Industry drivers

Outotec believes that the increasing awareness of sustainability is the most important megatrend driving industries today. This trend can be seen not only in developed economies but also in emerging and developing markets.

Much of global development can be attributed to metals and minerals. However, the society is confronted by a dilemma: the need for metals is growing, while there is a great concern over the environmental impacts of producing them. As a technology company, we at Outotec believe that this dilemma can be resolved.

Decision-makers have realized that the current exploitation of nature cannot continue. Increasing energy consumption and criticism against nuclear power plants, pollution, and lack of clean water are growing issues that need to be addressed. At the same time, employee health and safety requirements are increasing. All of the aforementioned developments stimulate increased investment into sustainable solutions, a trend that we believe will continue to strengthen over time.

The companies producing minerals, metals, and materials face many challenges and require a social license to operate. We have identified six trends that act as drivers of sustainable development. These contribute to an increased demand for new technology, presenting great opportunities for Outotec's technologies and solutions.

INDUSTRY DRIVERS

1. Ore grades are declining and the demand for metals is increasing. In order to meet the demand, more ore needs to be processed with more advanced technology.
2. Making metals requires a lot of energy, and energy costs are constantly climbing. More energy-efficient processes are needed.
3. Mining and metallurgical industries are major emitters of CO_2 and eco-toxic substances. Cleaner solutions must be developed.
4. Water availability and pollution are critical issues. Advanced solutions for water cleaning, conservation, and recycling are needed.
5. Peak oil is approaching. Oil is expected to run out by 2050 with current production rates; thus, alternative sources are needed.
6. The need for recycling is growing, thus requiring new technologies for turning scrap and waste into products.

Read also Metals and sustainability, p. 31.

Risks and opportunities

Outotec's business environment is impacted by the fact that while developed economies are stagnating, emerging countries keep growing fast, especially China. This accelerates urbanization, the growth of middle class, and the use of natural resources. The exhaustion of natural resources as well as a new energy paradigm, where oil is expected to run out by 2050 and nuclear power is being abandoned by many countries, requires improvement in the eco-efficiency of resources and materials. Awareness is increasing in environmental, social, and economic sustainability all over the world. Furthermore, there is a trend of outsourcing non-core activities. This means that networking and partnerships will be increasingly important, both for our clients and us, in R&D and tailoring solutions. The industry is consolidating, resulting in fewer but bigger customers, and competition will further increase.

From an environmental, social, and governance perspective, Outotec's greatest risks and opportunities unfold through our customers. Within Outotec, an in-house system of risk management is in place throughout the company to identify operational risks and opportunities. The Board of Directors is responsible for the company's risk management procedures and for ensuring that risks are taken into account in strategic planning and business operations. In turn, the Project Board is primarily responsible for the risk assessment procedure. Furthermore, Outotec's Technology Management function includes a team that concentrates on the environment and sustainability.

The risks and opportunities discussed below are those that have been deemed as key risks by management and which bear a strong link to sustainability. Outotec has defined a risk to be anything that may have an impact on the company's business activities. While risks can be threats, uncertainties, or lost opportunities, they may also be potential opportunities. Outotec's risk management policy defines a balanced risk profile from the perspective of all stakeholder groups.

Strategic and business risks are associated with the nature of the business and are often difficult to quantify. Among other areas, strategic risks relate to Outotec's business portfolio, market position, and major investments. Business risks are connected to the operating environment, customers' and subcontractors' operations, and overall economic outlook.

Outotec follows up on environmental legislation, competitors' technologies, and best available techniques, as well as our own operations and solutions offerings.

Climate change poses risks and opportunities

We continuously look for new business opportunities to address the challenges that our customers are facing. These challenges include improved energy efficiency, reducing CO_2 and other emissions, as well as improved recovery of metals and greater efficiency in the utilization of raw materials in general. We also assess the water consumption in our customers' processes.

We aim to capitalize on these opportunities to introduce technology improvements or develop new technologies that mitigate climate change and promote sustainability. By successfully implementing our technologies and solutions to address customer challenges, Outotec's references increase, which also enhance competitiveness.

While climate change presents Outotec with attractive business opportunities, some risks may affect our customers and therefore indirectly Outotec. International, national, regional, or state regulations on emissions may present risks, and excessively strict limits on emissions can threaten the operations and existence of some customers. Furthermore, cap and trade schemes may force our clients to move operations into areas with less stringent regulations, and in some cases excessively strict regulation may lead to plant closure. High energy prices, which may be a cause of the cap and trade schemes, also compromise our customer's competitiveness.

Outotec's technologies are designed to improve the efficiency of our customers' processes and therefore help them address these risks. They help customers to reduce emissions to air, water, and soil, and thus help them control the financial implications of regulatory risk. For instance, energy savings, which lead to reduced carbon emissions, make customers less vulnerable to fuel and energy taxes and regulations. These include international, national, regional, or state regulations on emissions, carbon taxes, as well as cap and trade schemes.

In order to help customers reduce their exposure to emissions and energy related regulatory risks, Outotec provides proven environmentally sound and energy saving solutions that meet environmental standards and regulations. Regulatory opportunities can help Outotec grow its business because inefficient mining and metallurgical processes need to be replaced with new technologies. Outotec's solutions, for instance, help cushion customers against carbon taxes and secure their competitiveness. Furthermore, with the carbon trade mechanisms, customers utilizing Outotec's technologies may have the opportunity to turn the CO_2 savings into a profit and obtain emis-

sion reduction credits (ERCs). Outotec's customers will not be threatened by tighter environmental regulation and will be able to indicate that their production requires less energy and results in fewer emissions than their competitors. In the future, a premium may be placed on clean production, but strictly speaking the main benefits are maintaining a license to operate, lower operation costs, and improved recovery.

We work in close partnership with our customers to continuously develop our technology solutions, a task that is carried out both in-house and in cooperation with universities and research institutes globally. In 2011, Outotec's R&D expenditure was EUR 33.5 million. We also plan to acquire new technologies to meet the customer needs.

Outotec revised its operational model in spring 2010 for the purpose of better addressing the growing sustainability challenges our customers face. As a response to the increasing significance of climate change, all business areas now focus on improving energy and water efficiency, carbon dioxide reductions, waste management, and life cycle services.

Many growth opportunities are seen in adjacent industries, such as the energy sector, for environmental solutions, including industrial water treatment. New opportunities in environmental technologies, such as materials recycling, renewable energy solutions, and waste management as well as industrial water treatment, are steadily increasing. In order to be less dependent on the cycles of the mining and metals industries, Outotec has begun to pursue opportunities to deliver its technologies to other process industries.

Sustainability driver	Opportunity for Outotec	Risk for the customer and/or Outotec
Ore grades are declining, ores are more complex and more difficult to process.		
Average copper ore grade is 0.8%, which is 20% less than ten years ago, and it is forecasted to fall further to 0.65% by 2020. To produce one tonne of copper requires 30 more tonnes of ore to be milled, which also results in an increased amount of tailings and the consumption of energy and water.	Outotec's vast knowledge of mineralogy and process technologies, as well as comprehensive R&D facilities enable the company to develop new process solutions for low- grade and complex ores. Outotec's technologies enable efficient ore processing and higher yield thanks to advanced process control in the grinding and flotation phases. Customers replace inefficient mining and metallurgical processes with new technologies. There are increased business opportunities also for energy and water efficient solutions.	Developing new incremental technologies is expensive and takes time. If Outotec fails to develop new technologies or keep its portfolio competitive, it may lose business. Customers' operations require sufficient amounts of water, coal, fossil fuels, rock and mineral resources. Any changes related to the availability or the price of these commodities has financial implications. The operational costs (energy and water) may rise too high for the customers and they may need to close down some operations, which could also reduce Outotec's business.
Making metals is energy-intensive and energy costs are constantly climbing.		
Minerals and metals processing is very energy-intensive. The GHG emissions in this industry are mainly related to energy use. Roughly 7% (2008) of the world's energy is used by the metals sector and will increase due to falling ore grades. Grinding mills alone take up 10% of Australia's total energy consumption.	Several Outotec technologies are rated BATs by the EU thanks to their energy-efficiency and low CO_2 emissions. Outotec designs sealed processes that utilize the energy contained in the raw materials. For example, the adoption of best practice technologies in iron and steel, aluminum and non-ferrous metals production worldwide would reduce CO_2 emissions annually by 280–460 million tonnes (IEA 2007; Tracking Industrial Energy Efficiency and CO_2 Emissions). Through Outotec's technology solutions impacts of carbon taxes for our clients are cushioned and their competitiveness secured.	Price changes prompted by resource scarcity, energy shortages, and changes in consumer attitude imply high financial risks for our customers and subsequently for Outotec. If in consumers' point of view the CO_2 footprint from plastic is smaller than from aluminum or copper, they might change attitudes and buying habits, which would risk our customers' and Outotec's business.
Cleaner solutions need to be developed.		
Sulfur – being a constituent in many ores – is released as sulfur dioxide (SO_2) in smelting and refining. Metals industry emits annually over 13 million tonnes of SO_2, with the largest amounts in Peru, Chile, Russia and Australia. SO_2 emissions have a significant local impact. Fine particulate matter emissions to air cause health problems. Heavy metals in hazardous dusts and fumes can cause occupational exposure. Eco-toxic substances from metallurgical operations impact air quality, water and soil.	Outotec's sustainable technologies guarantee license to operate far into the future and make it easier for the producers to get financing for their investment. Modern metallurgical processes combined with sulfuric acid plants can capture 99.99% of the sulfur. Efficient gas cleaning captures mercury, arsenic, antimony, bismuth, and lead from off-gases, and sealed processes minimize fugitive emissions. Outotec is continuously working to further develop its technologies and to innovate new ones, and therefore the company is well positioned in the competition.	Too strict laws and regulation can result in unprofitable operation and the customer may lose its license to operate. If Outotec fails to provide competitive solutions for the customer, it may lose business.

Sustainability driver	Opportunity for Outotec	Risk for the customer and/or Outotec
Availability of water and water pollution.		
Availability of water is becoming a critical issue at many mine sites, because when ore grade declines by 20%, water consumption increases respectively. For example, processing one tonne of ore requires 3,500 liters of water, one tonne of nickel 377,000 liters of water in a hydrometallurgical process, and one tonne of gold 252 million liters of water. Furthermore, mining and metals extraction can impact nature due to discharges of contaminated water.	Outotec has technologies which lead to significant reduction in fresh water consumption, recycling of process water and decrease in water loss. For example, advanced filters separate water from concentrates energy-efficiently. Paste thickening separates water from tailings and reduces water consumption by approximately 10%. Paste can directly be used as a back fill in the mine. The company is also developing new applications for industrial effluent treatment and cooperating with Kemira in developing solutions for water-intensive industrial applications.	Customers who have operations in areas of drought may be forced to close down their operations, which may reduce Outotec's business.If Outotec fails to develop new water-efficient applications, it may not be able to grow its business.
Peak oil is approaching.		
Global energy demand is expected to increase by 44% in the next two decades (EIA, 2009). With the current rate of production, the industry estimates that conventional oil reserves will be exhausted in 40 years. The world's proven oil shale reserves are 3 trillion barrels, many-fold compared to conventional oil reserves. Current methods for oil shale and oil sand processing are inefficient in oil recovery, energy and water consumption and have a substantial impact on the environment.	Outotec has some technologies which enable environmentally sustainable use of oil shale, oil sand and bio fuels as new alternative energy sources, and the company is developing new applications in cooperation with Eesti Energia, Kemira, and some other companies, universities and research institutes. The demand for sustainable technologies for alternative energy sources is increasing and Outotec can expand its business in the energy sector.	Too high energy prices due to carbon taxation and emission trading schemes can cause our clients to lose their competitiveness and stop operation. If the first oil shale processing reference plant using Enefit technology fails, Outotec's growth opportunities will reduce. If the environmental regulation will tighten so much that oil shale and oil sand processing will not be allowed, Outotec may lose business. There is also a risk that the development of new technologies will not succeed.
The need for recycling is increasing.		
Metals are almost 100% recyclable, and this potential is not fully taken advantage of. Product lifetime is becoming shorter, and thus the need of recycling is growing. Manufacturing new products from recycled metal consumes much less energy than from virgin metal. There is also a need for the recycling of process water and turning waste into products.	Outotec can grow its business by selling solutions for the production of metals from secondary materials, such as electronic waste, metallic scrap, cabling, and battery paste/scrap. Outotec's technologies are used for the recovery of metals from residues, fume dusts and waste stockpiles at production sites. They utilize raw materials efficiently reducing the amount of emissions, residues and waste.	If the industry does not succeed in organizing the recycling of scrap and waste properly, opportunities for Outotec may be reduced.

Impact of our products and services

Outotec innovates, develops, and delivers solutions which utilize natural resources and raw materials efficiently, reduce energy and water consumption, produce less waste and emissions, as well as minimize the plant's lifetime operating costs. Through our vast experience and in-house R&D centers, we have the ability to tailor processes for different raw materials, test and scale up, and develop new processes for complex raw materials. We have a strong portfolio of world-class technologies for the entire value chain of processing ore to refined metals. Each of Outotec's technological developments has the potential to reduce the environmental impact of a large number of industrial operations worldwide.

Our concentrator technologies enable efficient ore processing and higher yield thanks to an advanced process control in the grinding and flotation phases. Outotec has technologies which lead to a significant reduction in fresh water consumption, recycling of process water, and a decrease in water loss. For example, advanced filters separate water from concentrates energy-efficiently. Paste thickening separates water from tailings and reduces water consumption by approximately 10 percent. Paste can be used directly as a back fill in the mine.

Modern metallurgical processes combined with sulfuric acid plants can capture 99.99 percent of the sulfur. Efficient gas cleaning captures mercury, arsenic, antimony, bismuth, and lead from off-gases, and sealed processes minimize fugitive emissions. In metallurgical processing, energy is the most significant cost item and the main reason for CO_2 emissions. Outotec designs sealed processes that utilize the energy contained in the raw materials. The annual emissions avoided by the metallurgical industry through use of five Outotec technologies (ferrochrome production, copper flash smelting, alumina calcinations, ceramic filters, and cogeneration in ferrochrome process) amounted to 4.8 million tonnes of CO_2 equivalency (CO_2-e) in 2011. In addition, Outotec's new CO filter enables the use of process gas in direct electricity generation.

Once a plant is built and commissioned, we assist the customer by providing services and technological improvements to maintain the plant so that it will run smoothly, safely, and efficiently at all times.

Through hundreds of successful projects, we have made a significant global impact by creating new revenue streams, reducing our customers' carbon footprints, and increasing well-being in local communities.

Several Outotec technologies are best available techniques (BAT) rated by the EU thanks to their energy-efficiency and low emissions. Outotec designs sealed processes that utilize the energy contained in the raw materials. For example, adoption of best-practice technologies in iron and steel, aluminum, and non-ferrous metals production worldwide would reduce CO_2 emissions annually by 280–460 million tonnes (IEA 2007; Tracking Industrial Energy Efficiency and CO_2 Emissions). Through Outotec's technology solutions, impacts of carbon taxes for our clients are cushioned and their competitiveness secured.

Outotec's BAT-rated products:

- Flash smelting and flash converting for copper and nickel
- Zinc direct leaching
- Electrolytic refining of copper, nickel, zinc
- Direct reduction of iron ore fines
- Traveling grate process for iron ore pelletizing
- Emission optimized sintering for iron ores
- Ferrochrome process
- Alumina calcination
- Aluminum smelting (rodding plant, green paste plant)
- Partial roasting of copper concentrate
- Zinc roasting in fluidized bed
- Pyrite roasting
- Sulfuric acid production (single/double absorption)
- Spent acid regeneration
- Wet electrostatic precipitator
- Top submerged lance technology

Products and services that address customers' challenges

The industries in which our customers operate face many crucial and growing challenges. At the present time, ore grades are declining, more efficient energy consumption is essential, and the availability of water and natural resources is at risk. Peak oil is rapidly approaching, carbon dioxide emissions need to be drastically reduced, and recycling is increasingly essential. These circumstances mean that the demand for sustainable technologies is growing. In this global situation, we see opportunities to apply our wide technology platform even more broadly and tap unused market potential.

Product safety

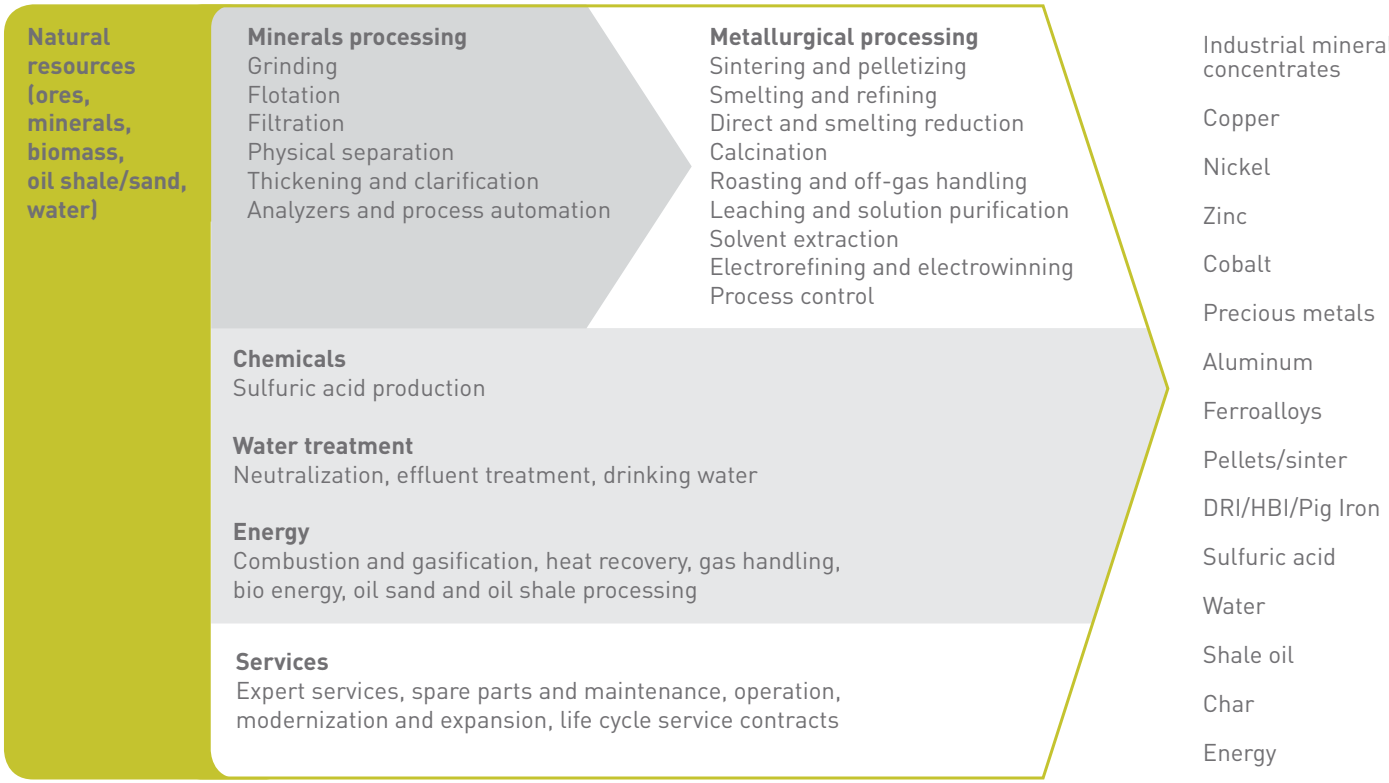
As a leading provider of technology, Outotec has established a Technology and Plant Safety management process to ensure that all products engineered and delivered by the company worldwide are reliable and meet all applied safety standards during all phases of the life cycle. The equipment fulfill the safety related industrial standards such as ISO 12100, IEC 62061 for the

safety of machinery and all required European directives such as 1997/23/EG, 2009/105/EG, 2006/42/EG, 94/9/EG (ATEX), 2004/108/EG, 2006/95/EG, and IEC 61508, IEC 61511 for process plants. Detection of hazards such as explosion, fire, and lightning followed by examination of HAZOP according IEC 61882 and SIL-Allocation Assessments are mandatory at Outotec. We provide information to our customers about the impacts of our products and services (e.g. their energy consumption, emissions, metal recovery, and water usage) and safety information according to industry standards. In industrial processes, safety is an integrated part of the operational manuals. Outotec manuals cover the entire delivery, follow the new IEC 82079-1 standard, and contain information on maintenance. In addition, customers are offered maintenance as a service package.

We also provide training services to our customers, including safety training.

Read also Industry drivers, p. 34.

Outotec's expertise in a value chain from natural resources to minerals, metals, energy, water, and other materials



Ecological footprint of our operations

Outotec operates globally, mainly in offices which are located in 25 countries. In addition, the operations include two research centers in Finland and Germany, two manufacturing workshops in Finland, assembly shops in Canada, China, and the USA, a ceramic plate production plant in Finland, and some warehouses. However, the majority of Outotec's manufacturing is outsourced.

The bulk of Outotec's operations involve engineering and business management, the environmental impact of which is relatively small and is managed through the use of unit-specific environmental and quality management systems. In addition, at our workshop in Turula and at our Pori Research Center, we are committed to the Federation of Finnish Technology Industries' energy efficiency program. No spills were reported from these activities in 2011. Despite the strong business growth and increased number of personnel in 2011, our total energy consumption decreased from 2010.

In 2011, Outotec made four acquisitions that contributed to an increase of scope 1 and 2 greenhouse gas (GHG) emissions. Due to increased business activities, scope 3 GHG emissions from air travel rose.

Business travel

GHG emissions from air travel are the biggest single source of Outotec's emissions. Therefore, 25 new video conferencing systems were installed in 2011 in Outotec's facilities to reduce air travel. Flights to visit customers are an integral part of Outotec's business, by which means Outotec also contributes indirectly to avoid emissions through the use of Outotec's technology solutions and services. The positive impact of Outotec's business travels can be best illustrated by comparing Outotec's annual greenhouse gas emissions in 2011 (26,025 tonnes CO_2-e) with emissions avoided through our goods and services (4,800,000 tonnes CO_2-e).

Outotec has paid attention to the use of responsible air carriers and hotels. 90 percent of the flights used by Outotec employees are operated by Lufthansa and other Star Alliance members and Finnair. For instance, Lufthansa and Finnair use a relatively new fleet. When Outotec makes agreements with hotels, the hotels that have a social responsibility policy and system in place are preferred.

Energy consumption, TJ	2011	2010	2009	GRI indicator
Direct energy consumption:	**22.2**	25.6	11.5	EN3
Propane gas	**8.7**	9.8	0.02	
Light fuel oil	**0.5**	0.5	0.4	
Coal, coke, semi coke	**0.4**	1.0	1.1	
Natural gas	**6.7**	8.2	6.2	
Diesel and gasoline	**5.9**	6.1	3.8	
Indirect energy consumption:	**119.3**	124.4	90.0	EN4
Electricity (incl. cooling*	**67.0**	67.6	51.3	
District heating	**50.3**	53.4	35.6	
Steam	**2.0**	3.4	3.2	
Total energy consumption	**141.5**	150.0	101.6	EN3, EN4

* MWh converted to TJ: 18,605 MWh (2011), 18,770 MWh (2010), 14,258 MWh (2009)

Greenhouse gas emissions, tonnes of CO_2-e	2011	2010	2009	GRI indicator
Scope 1 emissions (own fuel combustion, company cars)	**2,841**	2,993	1,659	EN16
Scope 2 emissions (purchased heat and electricity)	**8,323**	10,212	6,933	EN16
Scope 3 emissions (air travel and commuting)	**14,861**	11,049	9,512	EN17
Total greenhouse gas emissions	**26,025**	24,254	18,104	EN16
Greenhouse gas emissions avoided through use of Outotec technologies	**4,800,000**	4,200,000	4,100,000	EN18

Materials used, tonnes	2011	2010	2009	GRI indicator
Paper	**90.8**	100.1	92.1	EN1

Waste, tonnes	2011	2010	2009	GRI indicator
Waste recycled	**1,949.7**	1,480.3	843	EN22
Landfill waste and incinerated waste	**1,086.5**	678.3	584.9	EN22
Hazardous waste	**23.5**	27.3	25.5	EN22, EN24
Total waste	**3,059.7**	2,185.9	1,453.4	EN22
Paper recycled	**98.3**	96.3	59.8	EN22

A small amount of hazardous waste is formed in the final surface treatment of filter presses in the Lappeenranta works. In addition, oily waste from lubricants used in the Turula works is hazardous. The hazardous waste is sent for treatment to local hazardous waste treatment facilities.

Water consumption, m^3/year	2010	2010	2009	GRI indicator
Total water withdrawal	**55,997**	43,774	30,305	EN8

Water is purchased locally from municipal water suppliers, and waste water is sent to municipal waste water systems. Because our workshops are mainly assembly shops, no process water is discharged.

Energy consumption and emissions in Finnish units (Research Center in Pori and Turula works)	2011	2010	2009	GRI indicator
Energy consumption, TJ	**40.3**	44.5	46.8	EN3, EN4
Energy saved due to efficiency improvements, TJ	**7.6**	3.4	1.1	EN5, EN7
Emissions, tonnes CO_2-e	**2,703**	2,983	3,140	EN16

Company cars in Finland	2011	2010	2009	2008	GRI indicator
Company car emissions, g CO_2-e/km	**134**	147	173	191	EN16
Reduction from 2008, %	**30**	23	9		

The CO_2 emission limit for company cars in Finland was 180 g/km in 2011.

Targets related to environmental performance

Target for 2011	Performance in 2011	Target for 2012	GRI indicator
Increase video conferencing globally and introduce 20 new installations.	25 new video conferencing systems installed globally to reduce air travel.	**Double the use of video conferencing facilities from 2011 level.**	EN18
		Study the possibilities to increase the sustainability of our own operations e.g. telecommuting i.e. remote work from home (social and environmental impacts). (NEW)	EN18

Local unit-specific targets

In addition to the common Outotec-wide targets, we have local or unit-specific targets regarding the energy efficiency of operations. The Outotec Research Center and the Turula works in Finland are committed to the Federation of Finnish Technology Industries' energy efficiency agreements 2008–2016 and plan to save 9 percent in energy consumption compared to the baseline year 2006. Actions taken to achieve the targeted savings include the implementation of energy efficient air conditioning and heating at the new production facilities in Turula and the refurbishment of the ventilation system at the main building at the research center.

Outotec's target in Finland is to reduce company cars' emissions per km by 18 percent by 2013 compared with the base year 2008.

Read also Management approach, p. 9.

Economic impact

Through solid financial performance, Outotec benefits all company stakeholders. Profitable business enables growth and development of the business as well as prosperity of owners and employees. Through providing sustainable solutions to our customers, we create jobs and wealth locally in countries where we operate or where our customers' projects are located.

Strong growth in 2011
2011 was a record year for Outotec in terms of financial performance. Growth in the emerging markets, coupled with growing sustainability requirements, encouraged our customers to invest in new technologies, capacity, and services. This resulted in an all-time high order intake and strong organic sales growth. We achieved the financial targets that we had set for 2011. Despite significant investments in developing the business operations, our profitability continued to develop towards our long-term target.

Financial targets
Outotec's long-term financial targets to ensure continuous profitable growth are

- to grow faster than the market resulting in a compound average annual sales growth of 10–20 percent;
- annual operating profit margin from business operations, excluding one-time costs and purchase price allocations of acquired businesses, to be at 10 percent on average; and
- to maintain a strong balance sheet in order for the company to have operational flexibility and to execute acquisitions.

In addition, we aim to grow the sales of our services to an annual level of EUR 500 million by the end of 2015.

Added value to stakeholders

Generation of added value

+ Customers
Sales EUR 1,385.6 million

- Suppliers
Cost of goods, materials and services purchased
EUR 966.5 million

= EUR 419.1 million
Added value

Outotec

Distribution of added value

Employees
Wages and salaries
EUR 284.4 million

Public sector
Direct taxes
EUR 33.5 million

Creditors
Interest on debt and borrowings EUR 6.6 million

Shareholders
Dividends EUR 34.3 million

Tax expenses
Outotec pays taxes to 24 governments in countries where the company either has its own operations or customer projects. Our tax rate and taxes paid in a certain year vary according to large projects under implementation or completed in that particular year and the legislation of the country in which the project is located.

Our income tax expenses in 2011 totaled EUR 34.0 million (2010: EUR 10.4 million). These expenses include taxes paid on the basis of local tax legislation, tax adjustments from previous years and the effect of annual change in deferred taxes. The direct taxes (current taxes in Outotec's consolidated financial statements) were EUR 33.5 million in 2011 (2010: EUR 30.9 million), out of which EUR 29.1 million in 2011 (2010: EUR 30.2 million), came from outside Finland. The most significant countries in terms of current tax expenses in 2011 were Chile, Australia, Finland, and Germany, whereas in 2010 the respective countries were Germany, Chile, Australia, and South Africa.

Dividends
The value of Outotec's share sank 21 percent on the NASDAQ OMX Helsinki in 2011, and the closing price at the end of the year was EUR 36.40 (Dec 31, 2010: EUR 46.24). At the same time, the NASDAQ OMX Helsinki portfolio index, OMX Helsinki CAP, decreased 24 percent.

Outotec's market capitalization at year-end was EUR 1,666 million (Dec 31, 2010: EUR 2,117 million).

Outotec's target as defined in the company's dividend policy is to distribute at least 40 percent of annual net income of the preceding financial year per share as dividends.

Our profitability from business operations improved in 2011. Earnings per share were EUR 1.75 (2010: EUR 0.59). Earnings per share in 2010 were impacted by the one-time costs related to the company's cost savings program. The Annual General Meeting decided that a dividend of EUR 0.85 per share be paid out for 2011. This is a total of EUR 38.9 million, and it will be paid to shareholders in April 2012 (dividends paid for 2010: EUR 34.3 million).

Donations
According to Outotec's donation policy, the focus of donations is on global projects that aim to improve sustainable development and/or human life. Outotec will not give donations to individuals, political parties or pressure groups, religious organizations, or any organizations showing or encouraging any type of prejudice (for example racial, sexual, or religious). Outotec does not give political contributions.

Outotec's donations to charitable causes amounted to approximately EUR 110,000 in 2011.

Read more about Outotec's financial performance in Outotec Financial Statements 2011.

Impact of our supply chain

At Outotec the supply chain has historically been managed on a project-by-project basis. In 2011, Outotec established global supply chain management as a key strategic pillar for the company and streamlined its supply activities.

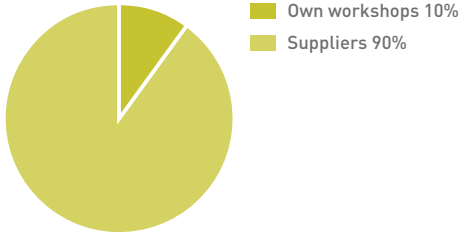
Supply chain management

Outotec sees its supply chain as encompassing both our own activities and the management of our suppliers. We deliver large tailored solutions to our customers all over the world and hence use various suppliers in our projects. In 2011, Outotec spent approximately EUR 967 million on external sourcing.

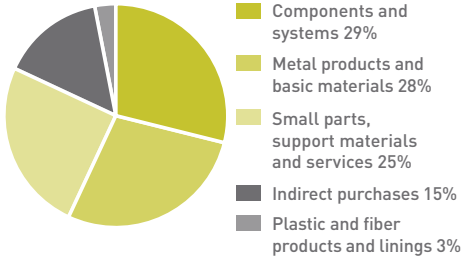
Some 90 percent of manufacturing is sourced from external suppliers. The remaining 10 percent of Outotec's manufacturing takes place in the company's three manufacturing workshops in Finland and three assembly shops located in China, the USA, and Canada.

Besides managing our own manufacturing facilities, we also operate construction sites on behalf of our customers. For this reason, installation and services comprise an important part of our supply chain. On the supplier side, Outotec's supply chain management encompasses supplier selection and project purchasing.

Manufacturing



Supplies by category



Sustainability aspects in supply chain

Supplier selection is of key importance in Outotec's business. Outotec gives performance guarantees for the plants and processes we deliver to our customers. Naturally, Outotec is responsible for the equipment and materials supplied as well as engineering and construction work provided by our subcontractors and project-specific suppliers. We therefore aim to develop long-term relationships with selected suppliers and establish procedures to ensure that results meet with our expectations.

In 2011, Outotec defined its Supplier Policy and launched it globally. Outotec expects its suppliers to comply with this policy in their dealings with Outotec, their own employees and suppliers, as well as with third parties. The policy covers ethical conduct, compliance with laws and regulations, environmental, health and safety performance, labor relations (e.g. no child or forced labor), respecting intellectual property, improper benefits, conflicts of interest, as well as sub-suppliers and management system. Suppliers are requested to continuously improve their competence in providing Outotec reliable, cost-effective, and innovative services and goods. Furthermore, they are expected to monitor compliance with Outotec policy, identify any area which does not comply with it, and implement improvements to achieve compliance, as well as provide status, related improvement actions, and supporting information to Outotec.

From a wide variety of procedures existing earlier within the company, Outotec developed in 2011 one Outotec-wide standardized supplier qualification process, which systematically includes sustainability aspects as specified in Outotec's supplier policy. This process was piloted in 2011, and it will be refined and globally deployed in 2012.

As a technology company, Outotec needs high-quality suppliers. In Outotec's customer projects, also the locally sourced subcontractors need to be trained specialists, and therefore the risk profile regarding affront/violation of human rights is relatively low. However, more emphasis will be put on supplier selection procedures in the future to improve our supply chain management and thus also our sustainability performance.

Safety in field operations

Safety is an important aspect in Outotec's field operations at customers' sites. Outotec's project manager is responsible for the company's own and subcontractors' site activities and follows the management of environmental issues, safety, systematic practices, and cleanliness. All Outotec's project and service specialists follow the customer's safety regulations at site. From the occupational safety standpoint, the greatest risks are associated with work assignments in countries that have little awareness of safety issues and a weak occupational safety culture. In these countries, Outotec employees are instructed to follow the company's own occupational safety principles.

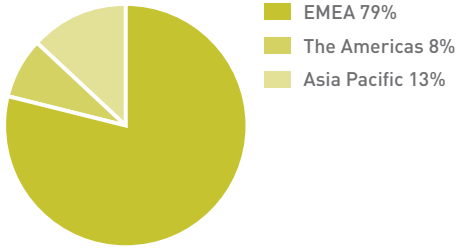
In its main locations, Outotec provides training in occupational safety for all employees whose work involves or will involve participating in installation, commissioning, maintenance, or general site operations related to plants, equipment, or services delivered by Outotec to its customers. The objective of the training is to teach employees hazard recognition and methods of preventive action and to improve practical collaboration between the customer and supplier organizations on shared sites.

In 2011, we launched a new Technology and Plant Safety Management process, which is mandatory in all Outotec entities. By following the new Technology and Plant Safety Management process as well as the HAZOP and SIL methods (worldwide known methods to analyze risks for personnel and environment within process plants), we ensure that we deliver a safe product which causes no harm to human beings or the environment.

Our manufacturing/assembly shops

Outotec operates three manufacturing workshops in Finland and assembly shops located in China, the USA, and Canada. These facilities have unit-specific local quality, health, and safety systems in place, and they care of proper sorting and further handling of wastes, including hazardous wastes. There were no operations identified as having significant risk for incidents of child labor, forced, or compulsory labor.

Location of major suppliers



Coverage: 70%

Outotec uses thousands of suppliers around the world for our customers' projects. These include mechanical workshops, component manufacturers, and local construction and engineering companies. The majority of purchasing (approximately 79%) takes place in the EMEA region (Europe, Middle East, Africa).

Outotec has defined Supply as a strategic function, and it is highly prioritized as a development area in the company's strategy, which builds and manages the supplier base through sourcing category management. Furthermore, it leads and develops sourcing activities with locally based purchasing for projects and services.

Targets regarding supplier activities

Outotec started to systematically improve the supply chain management in 2010. This also included the creation of a Supply function and redefining Outotec's supply practices. This long-term supply initiative in itself sets the basis for a systematic development of the sustainability of Outotec's supply.

In 2011, the specific sustainability related targets in relation to activities with suppliers was to define, communicate, and make the Outotec supplier policy publically available. In addition, a project was initiated to harmonize the supplier assessment process across the company and to cover the sustainability aspects. This process has been developed and piloted with a few suppliers. The target for 2012 is to refine the process and to deploy it globally.

Read also Impact of our supply chain, p. 45.

Target for 2011	Performance in 2011	Target for 2012	GRI indicator
Assess the supplier base, update and develop the sourcing policy.	Target was partially achieved. The new Supply function built the basis for the systematic sustainable development of Outotec's supply base globally. Outotec supplier policy, covering sustainability, was defined and published. A harmonized supplier assessment process including sustainability aspects was developed and tested.	**Refine the supplier assessment process further covering sustainability aspects and deploy it globally.**	EC6, HR2

About the report

Report scope and profile

This report covers the company's sustainability performance for the 2011 calendar year and is an update to the Sustainability Report 2010. In the upcoming years, performance and targets will be reported annually on the company's website. Outotec's sustainability reporting is prepared according to the Global Reporting Initiative (GRI) sustainability reporting guidelines and the UN Global Compact principles. If you are interested in specific issues relating to corporate responsibility, we recommend that you check the 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.

Outotec reports on the core indicators of most relevance to its operations, solutions, and stakeholders. The selected core indicators are of importance at the corporate level and are based on those proposed by the GRI guidelines.

We report on our own operations but do not include delivery projects, use of the technology, and supply chain. The report boundary includes all our major operations. Our aim is to expand information collection and include site operations, construction, and commissioning work carried out at our customers' sites.

Data collection

The environmental data reporting system was introduced in Outotec in 2009. The data on environmental performance is based on Outotec's financial reporting system 'Hyperion Financial Management' (HFM), where each business unit reports its environmental figures. After data collection, the reported figures were retrieved from the HFM system and Microsoft Excel was deployed to carry out calculations. In 2011, Outotec acquired the Energy Products of Idaho and Kiln Services Australia businesses. These new businesses are included in the environmental data reporting.

For collection of social performance data, a global master data system was applied. Outotec HC Master Data system has been built on the SAP HCM (Human Capital Management) software. It includes accurate data of each Outotec employee globally and covers all major business units. The system was introduced in 2010 and has been further developed in 2011. In addition, Outotec has taken into use a global health and safety reporting system for setting and following common health and safety targets in all Outotec operations. It also provides qualified metrics. This report includes the health and safety data that covers Outotec globally.

Because of the improvements in social data collection systems, we were able to include new information in this report:

- employee turnover by age group, gender, and region
- breakdown of employees per category according to gender and age group
- more detailed reporting on training and benefits provided by Outotec
- global health and safety reporting

The data reported does not cover all Outotec employees yet, which is an area that needs further improvement.

Performance data on environmental aspects of sustainability have been collected from major business units for electricity, heating, owned or leased company cars, flight emissions, water, paper, recycled waste, and landfill waste. In addition, the combustion of fuels in the company owned combustion sources (scope 1 emissions) and hazardous waste occurring in Outotec's research centers, equipment manufacture workshops, and ceramic plate production plant are included in the report. The sources of own fuel combustion are identified through separate environmental data reports provided on an annual basis. When required, e-mail correspondence was used to collect the information from the different business units.

Environmental data was available for Outotec's most important and largest business units, whereas the smallest offices were not able to report environmental data, because they are located in bigger office premises together with other companies. They pay a monthly lump sum to the office providers, and therefore it is not possible to identify electricity, heat, or water consumption. For this population, an average number was calculated based on the available data.

Economic performance data is based on data collection through ERP systems and Outotec's management reporting system HFM. The figures used in the consolidated financial statements of Outotec have been prepared according to IFRS (International Financial Reporting Standard). In addition, some data has been collected manually from MS Excel sheets.

In preparing the report, the "Guidance on Defining Report Content" has been applied. The content of this report was reviewed and approved by Outotec Executive Board in March 2012.

We have identified our investors, customers, current and future employees, and suppliers as the main users of this report.

Key targets for 2012

The materiality assessment and the CO_2 emissions avoided through Outotec's technology solutions clearly illustrate where Outotec can achieve the most positive impacts on sustainability – namely through improvements in its technologies to enable customers to reduce the environmental impact of their operations. Besides efforts in R&D and providing customers with process solutions, technologies, and services, Outotec also strives to improve the economic, environmental, and social performance of its own operations. By joining the corporate responsibility UN Global Compact initiative, Outotec has expressed its intent to further advance sustainability and social responsibility principles in its business practices.

The key targets are collected in this table:

Economic and governance

Target for 2011	Performance in 2011	Target for 2012	GRI indicator
Improve sustainability governance processes, data collection, and reporting.	Data collection was improved: - New data collection systems were used (e.g. SAP Master Data, financial reporting system HFM) - Six new indicators reported and four indicators changed from partly to fully reported Four CR team meetings in 2011 Sustainability working group meetings Sustainability materiality workshop	**Continues** **Improve the system for sustainability KPIs collection** **Include the relevant sustainability KPIs in core business and shared function processes**	
Continue growth through acquisitions.	Outotec made four acquisitions in 2011. The largest of those, Energy Products of Idaho, is expected to increase Outotec's sales by EUR 60–90 million annually.	**Continues**	EC1
Update the acquisition process to include sustainability assessment in due diligence.	Potential acquisition targets were assessed by using the following indicators: - Are solutions energy efficient - Is water usage efficient - Does the acquisition provide an opportunity to offer environmentally friendly technologies - Does the acquisition promote greater environmental responsibility - How the target respects employee well-being, local health and safety systems, local bargain agreements, and human rights in overall - Ethical standards - International norms	**Continue sustainability assessments in acquisitions.**	
Publish Outotec's first GRI-based sustainability report and web-based communication platform.	First GRI based sustainability report was published in 2011. Sustainability website published.	**Continue reporting based on GRI 3.0. The long-term target is to follow the GRI G4 guidelines.**	

Environmental

Target for 2011	Performance in 2011	Target for 2012	GRI indicator
Increase the percentage of EGS in order intake; the long-term target is to reach a level of 80–90%.	87% of order intake in 2011 was classified as Environmental Goods and Services.	**Continue on the level of 80–90%.**	EN6
Increase the investments in R&D in line with business growth.	Target partially achieved. R&D expenditure was EUR 33.5 million, representing 17.5% growth from 2010. However, because of the strong business growth in 2011, the share of R&D of sales was 2.4%, which is lower than in 2010 (2.9%).	**Continues**	EN6, EN26
Harmonize the QEHS systems in and for all units and locations with international certifications by 2013.	One global QEHS policy and manual developed and published. Procedures, instructions and templates (modules) for quality part of integrated QEHS management system published and implemented. Preparations for ISO 9001 certifications executed in 6 countries (currently without ISO certification), preparations for multi-site ISO 9001 certificates in 7 countries executed. QEHS teams established globally.	**Develop all needed EHS Modules (14001 and 18001) and implement them in all locations.** **Preparations for global certification.** **ISO 9001 Certification for 6 new countries.** **ISO 14001 and OHSAS 18001 certification of one additional location.**	
Over 5% annual increase in the amount of avoided CO_2 emissions through the use of Outotec technologies and solutions.	4.6 million tonnes CO_2 emissions avoided through the use of three Outotec technologies, representing a 9% increase from 2010. 4.8 million tonnes CO_2 emissions avoided through the use of five Outotec technologies (flash smelting, ferrochrome production, alumina calcination, ceramic filters, co-generation in ferrochrome process).	**Continues**	EN26
Increase the use of video conferencing globally and introduce 20 new installations.	New video conferencing systems installed in 25 locations globally.	**Double the use of video conferencing facilities from 2011 level.**	EN18
		Study the possibilities to increase the sustainability of our own operations, for example telecommuting, i.e. remote working from home (social and environmental impacts). (NEW)	EN18

Social

Target for 2011	Performance in 2011	Target for 2012	GRI indicator
Have a dialogue with our employees about Outotec values, principles, and Code of Conduct and redefine them. The long-term target is to provide training related to the Code of Conduct to all employees.	Target was partially achieved. Outotec Principles were revisited, and 60% of employees participated in workshops and gave also their input in an online questionnaire. Over 100 senior managers started an ethical dialogue on corporate responsibility and values related topics.	**Finalize and publish the refined set of Outotec Values and integrate them into the management system.** **Publish the new Code of Conduct and the related e-learning platform.** **Continue ethical dialogue in internal social media with all employees and in the Management Forum.**	SO3
Implement the HC master data system globally and develop it to include relevant personnel data needed to establish corporate-wide indicators.	Human Capital master data system covering basic personnel data was implemented globally.	**Define and implement the HC Master Data related processes.** **Develop the HC Master Data system and HC reporting further.**	
	Technology and Plant Safety Management (TPSM) as part of the QEHS procedures, instructions and templates were developed, and published and global inductions executed.	**Technology and plant safety: take TPSM in use in all locations with engineering activities. (NEW)** **Long term target:** **Zero harm=** **zero fatalities+** **zero incidents+** **zero property damages** **for Outotec and our Partners**	LA7
90–95% of employees have a Performance Development Dialogue.	92% of employees had a Performance Development Dialogue. A new integrated tool to support all performance management related processes was developed.	**90–95% of employees have their PDD using the new tool.** **Develop the tool to include individual development.**	LA1–13
	Outotec established a Facebook page and started to use Twitter and LinkedIn more actively for recruitment and communication.	**Further improve the employer image to become a preferred employer: increase use and develop the content of social media channels (such as Facebook, Linkedin, Twitter, XING). (NEW)** **Survey on employer image using social media participants.**	
Assess supplier base, update and develop the sourcing policy.	Target was partially achieved. The new Supply function built the basis for the systematic sustainable development of Outotec's supply base globally. Outotec supplier policy, covering sustainability, was defined and published. Harmonized supplier assessment process including sustainability aspects was developed and tested.	**Refine the supplier assessment process further covering sustainability aspects and deploy globally.**	EC6, HR2

Independent Assurance Report – Outotec Sustainability Report 2011

To the Management of Outotec Oyj
Insinööritoimisto Ecobio Oy (hereafter Ecobio) has been commissioned by Outotec Oyj (hereafter Outotec) to perform a limited third party assurance engagement regarding the content of Outotec's Sustainability Report for 2011.

Outotec's Responsibility
Outotec was responsible for the collection, preparation and presentation of the information in the Sustainability Report (hereafter Sustainability Information) according to the Sustainability Reporting Guidelines (version 3.0) set up by the Global Reporting Initiative (GRI). Ecobio, as an independent assuror was not involved in the preparation of any Sustainability Information, apart from the Independent Assurance. The Management of Outotec has approved the information provided in the Sustainability Report.

Practitioner's Responsibility
Ecobio's responsibility was to present a conclusion on the Sustainability Information subject to the assurance performed by Ecobio.

The scope of work included assurance of completeness and correctness of information presented by Outotec in the Sustainability Report 2011. The assurance engagement was limited to the non-financial performance data disclosed in the Sustainability Report for the reporting period of January 1st 2011 to December 31st 2011.

The Sustainability Information assured included the Standard Disclosures (GRI; sections 1 to 4), and the reported Environmental and Social Performance Indicators. In addition, the level of the consistency of the Economic Performance Indicators reported was checked against the GRI G3 Sustainability Reporting Guidelines.

Ecobio disclaims any liability or responsibility for any third party decision based upon this assurance report.

Methodology
Ecobio based the assurance process on the following guidelines and standards: the Global Reporting Initiative (GRI) G3 Sustainability Reporting Guidelines 3.0, the International Standard on Assurance Engagements 3000 (ISAE3000) and Outotec's internal reporting guidelines. The assurance process was performed utilizing Ecobio's internally developed GRI assurance tool, covering the principles, standard disclosures and indicators of the GRI G3 Guidelines. All Standard Disclosures, Management Approaches and reported Performance Indicators were assessed individually.

Concerning limited assurance engagement the evidence-gathering procedures are more limited than for a reasonable assurance engagement, and therefore less assurance is obtained. This assurance engagement was conducted from February to March 2012. The assurance process included:

- Interviewing employees responsible for data collection and reporting at Outotec's group level.
- Evaluating procedures for gathering, analyzing, and aggregating quantitative data for the Sustainability Report 2011 as well as performing cross-checks on a sample basis concerning environmental data.
- Checking the internal guidelines of the data collection.
- Checking the sufficiency of the documentation of the data gathering process.
- Checking the consistency of the Sustainability Report 2011 compared to the GRI G3 Sustainability Reporting Guidelines.

Conclusions

Based on the work described in this report, nothing has come to our attention that would cause us to believe that the information presented in Outotec's Sustainability Report 2011 is not fairly stated, in all material respects, or that it would not comply with the Reporting Criteria stated before.

Outotec claims that an Application Level of B+-level is achieved. We assessed the scope of Sustainability Information provided by Outotec for each Standard Disclosure and Performance Indicator included and evaluated that an Application Level of B+ is achieved.

Observations and Recommendations

Based on our limited assurance engagement we provide the following observations and recommendations related to GRI Sustainability Reporting principles. These observations and recommendations do not affect the conclusions presented earlier.

- In general, the report is comprehensive, well-structured and claims are reported in a reasonable fashion.
- Due to improved data gathering processes especially for social data, Outotec has been able to extend the number of indicators reported ("partly reported" from 18 to 19 and "fully reported" from 29 to 34). It is, however, recommended for future reporting periods to further improve the accuracy and completeness of the data provided.
- As stated in the Independent Assurance Report 2010, we recommend the boundary of the report to be expanded in future reporting periods to include, where possible, project execution as well as site and supplier performance.
- To improve transparency even further, it is strongly recommended for Outotec to also include possible failures in the report content.
- As the data gathering process has undergone changes it is recommended that the documentation of the data gathering process and internal guidelines of the data collection are brought up to date. By improving the documentation it will enhance the accuracy and completeness for future reporting periods.

Practitioner's Independence and qualifications

Ecobio is an independent consulting company that specializes in Environmental, Health and Safety management with over 20 years of history. Ecobio provides environmental consultancy services, combined with training, research and planning, for companies in the infrastructure, industry and service sectors. Ecobio's team is skilled and experienced within non-financial assurance and has good knowledge of industry related sustainability issues.

As an independent consultancy, Ecobio has no financial dependencies on Outotec beyond the scope of this engagement. Ecobio has conducted this assurance independently, and there has been no conflict of interest.

Helsinki, 9th of March 2012
Insinööritoimisto Ecobio Oy

Taru Halla
Managing Director

Thomas Andersson
Project Manager

Global Reporting Initiative Index and UN Global Compact

Based on its own assessment, Outotec has self-declared this report to comply with the GRI application level B+. The application level has been checked by a third party, Ecobio Ltd.

	GRI Content	Reference page	Reported	Global Compact principles
	Standard Disclosure			
1	**Strategy and analysis**			
1.1	CEO's statement	CEO's message to stakeholders, p. 4–5	Fully	
1.2	Key impacts, risks and opportunities	Materiality assessment, p. 7–8 Risks and opportunities, p. 35–38 Key targets, p. 49–51	Fully	
2	**Organizational profile**			
2.1	Name of the organization	Outotec in brief, p. 2	Fully	
2.2	Primary brands, products, and/or services	Outotec in brief, p. 2	Fully	
2.3	Operational structure of the organization, including main divisions, operating companies, subsidiaries, and joint ventures	Outotec in brief, p. 2	Fully	
2.4	Location of organization's headquarters	Outotec in brief, p. 2	Fully	
2.5	Number of countries where the organization operates	Outotec in brief, p. 2	Fully	
2.6	Nature of ownership and legal form	Outotec in brief, p. 2	Fully	
2.7	Markets served	Outotec in brief, p. 2	Fully	
2.8	Scale of the reporting organization	Outotec in brief, p. 2 Economic impact, p. 43–44	Fully	
2.9	Significant changes during the reporting period regarding size, structure, or ownership	Outotec in brief, p. 2	Fully	
2.10	Awards received in the reporting period	Highlights 2011, p. 3 Customers, p. 23–24	Fully	
3	**Report parameters**			
3.1–3.4	Report profile	Report scope and profile, p. 48 Contact information, p. 58	Fully	
3.5	Process for defining report content	Materiality assessment, p. 7–8 Interaction with stakeholders, p. 23–27	Fully	
3.6	Boundary of the report	Report scope and profile, p. 48 Data collection, p. 48	Fully	
3.7	State any specific limitations on the scope or boundary of the report	Report scope and profile, p. 48	Fully	
3.8	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities	Report scope and profile, p. 48 Data collection, p. 48	Fully	
3.9	Data measurement techniques and the bases of calculations	Data collection, p. 48	Fully	
3.10	Explanation of re-statements	Outotec in brief, p. 2	Fully	

	GRI Content	Reference page	Reported	Global Compact principles
3.11	Significant changes from previous reporting periods in the scope, boundary, or measurement methods	Outotec in brief, p. 2 Data collection, p. 48	Fully	
3.12	Table identifying the location of the Standard Disclosures in the report	GRI Index and UN Global Compact, p. 54–57	Fully	
3.13	Assurance	Independent assurance, p. 52–53	Fully	
4	**Governance, commitments, and engagement**			
4.1–4.10	Governance	Governance and sustainability, p. 21–22 Risks and opportunities, p. 35–38	Fully	1–10
4.11–4.13	Commitments to external initiatives	Commitment to external initiatives, p. 28–30 Risks and opportunities, p. 35–38	Fully	1–10
4.14–4.17	Stakeholder engagement	Employees, p. 11–16 Interaction with stakeholders, p. 23–27	Fully	
	ECONOMIC PERFORMANCE INDICATORS			
	Management approach to economic responsibility	Management approach, p. 9–10 Economic impact, p. 43–44	Fully	1,4,6,7
EC1	Direct economic value generated and distributed	Economic impact, p. 43–44	Fully	
EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change	Risks and opportunities, p. 35–38	Fully	7
EC3	Employee benefit obligations	Employee benefits, p. 14–15	Partly	
EC4	Significant financial assistance received from government	R&D and innovation, p. 17–18	Fully	
EC6	Spending on local suppliers	Supply chain, p. 45–47	Partly	
EC7	Procedures for local hiring	Labor practices, p. 14–16	Partly	6
EC8	Development and impact of infrastructure investments and services provided primarily for public benefit	Commitment to external initiatives, p. 28–30	Partly	
EC9	Understanding and describing significant indirect economic impacts	Economic impact, p. 43–44 Management approach, p. 9–10	Partly (NEW)	
	ENVIRONMENTAL PERFORMANCE INDICATORS			
	Management approach to environmental responsibility	Management approach, p. 9–0 Ecological footprint, p. 41–42	Fully	7,8,9
EN1	Materials used	Ecological footprint, p. 41–42	Partly	8
EN3-5	Energy consumption and energy saved	Ecological footprint, p. 41–42	Fully	8,9
EN6	Initiatives to provide energy-efficient or renewable energy-based products and services	R&D and innovation, p. 17–18	Partly	8,9
EN7	Initiatives to reduce indirect energy consumption and the reductions achieved	Ecological footprint, p. 41–42	Partly (NEW)	8,9
EN8	Water withdrawal	Ecological footprint, p. 41–42	Fully	8
EN11	Location and size of land holdings in areas of high biodiversity		Not relevant	8
EN12	Description of significant impact of activities, products, and services on biodiversity		Not reported	8
EN16–17	Greenhouse gas emissions	Ecological footprint, p. 41–42	Fully	8
EN18	Initiatives to reduce greenhouse gas emissions	Ecological footprint, p. 41–42	Fully	7,8,9
EN19	Emissions of ozone-depleting substances by weight		Not relevant	8
EN20	NOx, SOx, and other significant air emissions		Not relevant	8

	GRI Content	Reference page	Reported	Global Compact principles
EN21	Water discharge		Not relevant	8
EN22	Waste by type and disposal method	Ecological footprint, p. 41–42	Fully	8
EN23	Total number and volume of significant spills		Not relevant	8
EN24	Hazardous waste	Ecological footprint, p. 41–42	Fully	8
EN26	Initiatives to mitigate environmental impacts of products	R&D and innovation, p. 17–18	Partly	7,8,9
EN27	Percentage of products sold and their packaging materials that are reclaimed by category		Not reported	8,9
EN28	Compliance with environmental laws	Code of Conduct, values and principles, p. 19–20	Fully	8
	SOCIAL PERFORMANCE INDICATORS			
	Labor practices and decent work			
	Management approach to labor practices and decent work	Management approach, p. 9–10 Labor practices, p. 14–16	Fully	1,3,6
LA1	Total workforce by employment type, employment contract, and region	Employees, p. 11–16	Fully	
LA2	Total number and rate of employee turnover by age group, gender, and region	Employees, p. 11–16	Fully	6
LA3	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Employee benefits, p. 14–15	Fully	
LA4	Percentage of employees covered by collective bargaining agreements	Employee benefits, p. 14–15	Fully	1,3
LA5	Minimum notice period(s) regarding significant operational changes	Labor practices, p. 14–16	Partly (NEW)	3
LA7	Rates of injury, occupational diseases, lost days and absenteeism, and total number of work-related fatalities by region	Health and safety, p. 15	Fully	1
LA8	Education, training and prevention programs regarding serious deseases		Not reported	1
LA9	Health and safety topics covered in formal agreements with trade unions	Health and safety, p. 15	Partly (NEW)	1
LA10	Average hours of training per year per employee category	Competence development , p. 12–14	Partly	
LA11	Programs for skills management and lifelong learning	Competence development , p. 12–14	Fully	
LA12	Percentage of employees receiving regular performance and career development reviews	Competence development , p. 12–14	Fully	
LA13	Composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership, and other indicators of diversity	Employees, p. 11–16	Fully	1,6
LA14	Ratio of basic salary of men to women by employee category		Not reported	1,6
	Human rights			
	Management approach to human rights	Management approach, p. 9–10 Code of Conduct, p. 19–20	Fully	1,2,3,4,5,6
HR1	Investment agreements with human rights clauses or that have undergone human rights screening		Not reported	1,2,3,4,5,6
HR2	Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken	Sustainability aspects in supply chain, p. 45–46	Partly	1,2,3,4,5,6
HR3	Employee training on policies and procedures concerning human rights relevant to operations	Management approach, p. 9–10 Employees, p. 11–16	Partly (NEW)	1,2,3,4,5,6

	GRI Content	Reference page	Reported	Global Compact principles
HR4	Total number of incidents of discrimination and actions taken	Labor practices , p. 14–16	Fully	1,2,6
HR5	Operations identified in which the right to exercise freedom of association and collective bargaining may be at significant risk		Not reported	1,2,3
HR6	Operations identified as having significant risk for incidents of child labor	Sustainability aspects in supply chain, p. 45–46	Fully	1,2,5
HR7	Operations identified as having significant risk for incidents of forced or compulsory labor	Sustainability aspects in supply chain, p. 45–46	Fully	1,2,4
HR9	Total number of incidents of violations involving rights of indigenous people and actions taken	Code of Conduct, values and principles, p. 19–20	Fully	1,2
	Society			
	Management approach to society	Management approach, p. 9–10 Employees, p. 11–16	Fully	10
SO1	Nature, scope, and effectiveness of any programs and practices that asses and manage the impacts of operations on communities	Commitment to external initiatives, p. 28–30 Sustainability aspects in supply chain, p. 45–46	Fully	
SO2	Percentage and total number of business units analyzed for risks related to corruption	Code of Conduct, values and principles, p. 19–20	Partly	10
SO3	Percentage of employees trained in organization's anti-corruption policies and procedures	Code of Conduct, values and principles, p. 19–20	Partly	10
SO4	Actions taken in response to incidents of corruption	Code of Conduct, values and principles, p. 19–20	Fully	10
SO5	Public policy positions and participation in public policy development	Principal international stakeholder organizations, p. 30	Fully	1-10
SO6	Total value of financial and in-kind contributions to political parties, politicians, and related institutions	Economic impact, p. 43–44	Fully	10
SO7	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices	Code of Conduct, values and principles, p. 19–20	Fully	
SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	Code of Conduct, values and principles, p. 19–20	Fully	
	Product responsibility			
	Management approach to product responsibility	Management approach, p. 9–10 Impact of our products and services, p. 39–40	Fully	1–8
PR1	Health and safety impacts of products and services	Impact of our products and services, p. 39–40	Fully	1
PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services	Code of Conduct, values and principles, p. 19–20	Fully	1
PR3	Type of product and service information required by procedures, and percentage of significant products and services subject to such information	Impact of our products and services, p. 39–40	Partly	8
PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling	Code of Conduct, values and principles, p. 19–20	Fully	8
PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction	Customers, p. 23–24	Fully	
PR6	Programs for adherence to laws, standards, and voluntary codes related to marketing communications		Not reported	
PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	Code of Conduct, values and principles, p. 19–20	Fully (NEW)	

Contact information

Minna Aila
Senior Vice President – Communications and
Corporate Responsibility
e-mail: minna.aila@outotec.com

Dr. Ilkka Kojo
Director – Environment and Sustainability
e-mail: ilkka.kojo@outotec.com

Harald Huppe
Sustainability Specialist
e-mail: harald.huppe@outotec.com

Eila Paatela
Director – Corporate Communications
e-mail: eila.paatela@outotec.com

Saija Kinanen
Communication Specialist – External Communications
e-mail: saija.kinanen@outotec.com

Outotec Oyj
Corporate management
PO Box 86, FI-02201 Espoo, Finland
Tel. +358 20 529 211

www.outotec.com/sustainability
www.facebook.com/Outotec
www.linkedin.com/company/outotec
www.twitter.com/outotec

Design: Miltton Oy

Outotec

Outotec Oyj
Riihitontuntie 7, PO Box 86
FI-02200 Espoo, Finland

www.outotec.com