

# Sustainability

RHI stands for sustainable management in all processes and customer requirements. On the one hand, sustainability means responsible management and control of the company keyed to long-term value creation. On the other hand, sustainability refers to dealing carefully with nature and raw materials and to assuming social responsibility and the responsibility towards society. RHI attaches great importance to open and transparent stakeholder management. For RHI, it includes establishing and fostering good relationships and contact with customers, suppliers, investors, employees, politicians, local communities, the media, social partners as well as international organisations and interest groups in the long term.

Quality management, environment protection and health and safety at work were combined in an Integrated Management System (IMS) to ensure more efficient control of all company-relevant processes, legal requirements and technical regulations in these areas. An IMS officer for the Group, together with the persons responsible for IMS at the individual locations provides for mapping, maintaining and the continuous improvement of the IMS at all sites, organises internal and external audit and certification programmes, coordinates and supports issues of legal and notification management and is responsible for assessing customer satisfaction throughout the company.

In 2010, a legal audit was performed at all Austrian locations, which dealt with checking legal compliance. The audits performed externally attested a high level of legal security.

In 2010, each RHI location was audited for the ISO management systems by RHI IMS auditors, 31 of them according to ISO 9001:2008 and 22 according to ISO 9001:2008 and ISO 14001:2004. 18 locations were audited in accordance with Lloyd's Register Quality Assurance Limited. In order to increase the high level of the RHI auditors further, auditor training sessions were held in Austria, Germany and Mexico. The professional expertise was provided by Lloyd's Register.

In the past financial year, information on customer satisfaction was collected systematically in all Divisions and Business Units using standardised questionnaires. Twice a year product quality, service quality and corporate topics such as sustainability, brand loyalty and criteria for the choice of suppliers were assessed. The results of the survey will be published in the Annual Report 2011.

RHI undertakes great efforts to maximise resource conservation and energy efficiency and to minimise CO<sub>2</sub> emissions in the energy-intensive production of refractory materials. Efficient production not only makes sense from an ecological point of view, but also contributes to saving energy and raw material costs, thus increasing economic sustainability. Compliance with mandatory environmental standards and regulatory requirements are a matter of course for RHI. In addition, RHI's specialists in research and development, engineering and production constantly strive to reduce RHI's environmental footprint beyond legal requirements. The environmental impact is periodically reviewed and evaluated in all organisational units and further targets for improvements are derived from the results.

## **Integrated Management System**

## **Quality management**

## **Environmental management**

Quantified environmental targets are defined as part of the certified environmental management system, and their realisation and implementation supervised and checked. Environmentally relevant improvements thus can be measured and reached faster.

More than two thirds of RHI's locations and work places have been certified in accordance with ISO 14001: 2004 by Lloyd's Register Quality Assurance Limited.

### **International climate protection**

RHI is fully committed to climate protection. Climate change is a global problem that requires global solutions. The EU has already set ambitious CO<sub>2</sub> reduction targets, but other large, global emitters including the USA, China, India and other emerging countries must also make a binding contribution to CO<sub>2</sub> reduction in order to ensure fair competition and to make climate protection sustainable.

### **European emissions trading system**

Production at RHI is subject to the European Emissions Trading System (ETS). Within the third ETS period (2013 - 2020), RHI falls under the Carbon Leakage exemption rules with the three segments magnesia, refractories and doloma. The objective is to protect those sectors which show high trading activities and which would incur high costs by purchasing CO<sub>2</sub> certificates from competitive disadvantages. In December 2010, the European Commission presented a decision regarding the allocation rules of free-of-charge CO<sub>2</sub> certificates, which is now subject to adoption by the European Parliament. RHI actively follows this process as a technology pioneer for the refractories industry.

### **CO<sub>2</sub> Balance**



Europe: 1,035,200t  
Asia: 79,200t  
North and South America: 37,700t

In 2010, CO<sub>2</sub> emissions amounted to roughly 1.2 million tonnes worldwide. RHI has significantly expanded and refined its monitoring system (integration of smallest emission sources) and also extended it to those locations where it is not required by the authorities. RHI continuously strives to reduce its CO<sub>2</sub> emissions further, but repeatedly encounters limits in doing so. Emissions related to raw materials are inevitable in the production of raw materials and cannot be reduced any further. Magnesite (magnesium carbonate MgCO<sub>3</sub>) for example consists of 50% magnesium oxide and 50% chemically bonded CO<sub>2</sub>. When magnesite is converted to sintered magnesia (magnesium oxide MgO), the CO<sub>2</sub> bound in the raw material is fully emitted.

### **Energy efficiency**

The RHI environment and energy competence centre of the RHI Technology Center Leoben constantly strives to increase energy efficiency in refractories production and to lower energy consumption through continuous measures. Based on energy efficiency analyses, the savings and optimisation potential is analysed systematically and the corresponding environmentally relevant investment projects are developed and implemented worldwide.

Despite full capacity utilisation in production in the year 2010, energy consumption only amounted to 2,593,383 Megawatt worldwide.

### Environmentally relevant investments

The significance of environmental protection and energy efficiency at RHI is reflected in the environmentally relevant investments that RHI made in 2010. Of the total investment volume of roughly € 50 million, € 6.5 million were allocated to measures designed to improve the environment. The most important projects were implemented in the areas of waste heat recovery and energy reduction.

In Dalian, China, a new waste heat concept was implemented in the course of constructing the third tunnel kiln. Based on first computer simulations, an optimisation of the tunnel kiln cooling zone was developed. Moreover, the additionally blown in air is re-used as a source of energy and the excess air is used for water treatment. The hot water is used for the sanitary facilities at the plant, but the main part is used to operate machinery. As a result of this project, 2,317 tonnes less of CO<sub>2</sub> were emitted thanks to the savings in fossil fuel in 2010.

In Trieben, Austria, a special heat recovery process is used to recuperate energy for the tunnel dryer and for impregnation, so no natural gas is used. Moreover, the waste gas of the tunnel kiln is used to produce hot water.

In Bayuquan, China, one of the two tempering kilns was re-installed and a common thermal afterburner installed for the purification of exhaust gas, which is equipped with heat exchangers. The energy recovered from the heat exchangers is sufficient to supply the new tempering kiln 100%.

In 2009, RHI started the project "Stretchhood packaging – refractories optimally packaged" at two pilot plants. In 2010, this initiative was successfully carried out by implementing eight plant projects. A new and innovative packaging solution with an intelligent film to safeguard transport enables the customer to reduce waste. It is easy to handle and provides the best possible protection for the delivery of products to the customer. Since its introduction, more than 300,000 packages were delivered to over 990 customers in more than 90 countries. In the two pilot projects in Breitenau and Duisburg, more than 180 tonnes of packaging material and more than 30,000 cubic meters of gas were saved per year. A similar reduction is to be expected at the other RHI plants. The Breitenau project was considered by the Austrian initiative to prevent waste for this environmentally friendly packaging solution.

Duisburg realised an increase in the rate of recycling through pure dust recuperation based on the use of smaller, decentralised dedusting systems.

In Marone, Italy, RHI eliminated low level odour nuisance from production through extraction and containment.

In the year 2010, RHI recorded a waste volume of 27,369 tonnes. Only some 12% of this waste is classified as dangerous according to ÖNORM S 2100 Waste Catalogue. Dangerous waste includes used oil, fats, industrial sweepings and sand catcher residues.

### Energy distribution by source 2010



Gas: 1,663,631,259 kWh  
Electricity: 353,107,772 kWh  
Pet coke: 350,552,859 kWh  
LPG: 189,898,229 kWh  
Propane/oil/diesel: 36,131,064 kWh

in tonnes	Europe	Asia	America	Africa
Waste (non hazardous)	18,576	2,235	2,067	1,620
Waste (hazardous)	1,754	648	68	400

### Recycling

In its "European Raw Materials Initiative," which was initially published in 2008 and adapted at the beginning of the year 2011, the European Commission defined resource efficiency and recycling as one of the three pillars for European industries to secure raw material supply in the long term. Intensified recycling measures are to accomplish an improvement in waste management in order to minimise the outflow of valuable and important secondary raw materials from Europe to third countries.

The use of secondary resources is also gaining significance in the refractories industry: this is on the one hand due to continuous price increases for raw materials, limited availability (e.g. export licenses) or regulatory framework conditions; on the other hand, increased use of recycling materials corresponds to RHI's concept of sustainable use of resources, reduces costs, but above all the ecological footprint and improves the environmental balance – also for the customer. Enhanced cooperation with recycling companies, which break out the revert materials, leads to the use of selected materials; moreover, a comprehensive approach can be chosen which supports the idea of a zero waste concept.

RHI was one of the first refractories suppliers to deal with the topic of recycling in the 1990s and started – to a lesser extent – to treat MagCarbon converter bricks from the steel industry for recycling. Until today, one of the main challenges the research and development department deals with is to realise the required consistent quality based on secondary raw materials. This work is based on secondary raw material concepts adapted to products and production sites. This know-how has enabled RHI to re-use nearly all refractory revert materials, which are used in the steel industry. In addition, refractory revert materials from other industries, such as the glass industry, are also used.

The share of revert material used in the past financial year amounted to 80,000 tonnes (2009: 55,000 tonnes), which corresponds to a recycling share of 4.4% in production.

### Transport and logistics

All logistics activities are controlled by the Leoben and Vienna offices. For many years, RHI has developed targeted and comprehensive activities as part of logistics management in order to use all means of transport as economically and efficiently as possible, while at the same time saving resources. In the year 2010, freight in the outbound segment increased by 20% in comparison with the previous year. The portion of rail freight was increased further in comparison with goods transported by truck in 2010. In the inbound segment, rail transport has proven to be the economically more efficient solution as compared with sea transport, especially on routes from China to Europe. Overall, roughly 33,000 tonnes of raw materials were transported by the Trans-Siberian Railway for the plants in Austria. 80,000 tonnes per year of raw materials supplied from Turkey are carried by rail directly to Austria.

Moreover, roughly 120,000 tonnes of raw materials are delivered to Austria and Germany from the north and south harbours in post-carriage and by European suppliers. The portion of deliveries by train in European continental shipping was increased from 27% in 2009 to 33% in 2010.

The RHI mines in Austria, Italy and Turkey have provided the most important resources for RHI's refractory products for over 100 years: magnesite and dolomite. State-of-the-art and sustainable methods and processes are employed in order to get the best economic, and especially the best ecological use out of the mines, thus securing availability for the generations to come. In open-cast mining, which is applied in three of five mines, the recultivation of near-natural habitats is of great importance: stable, re-forested soil provides for safety and often also means a new diversity of species in fauna and flora. RHI's activities go beyond the legally defined minimum – not only in mining, but also around production sites. The following projects represent examples of RHI's extensive recultivation measures:

- >> Reforestation and recultivation measures at the dolomite mine Marone, Italy.
- >> Ongoing recultivation of the mine on Weißenstein in Hochfilzen, Austria.
- >> Continuation of creation of green areas around the Ramos Arizpe plant, Mexico.
- >> At the site in Veitsch, Austria, the successful reforestation project of the former mine was continued: more than 2,000 bushes and trees were planted in cooperation with the local forestry school and the local school.

As a Good Corporate Citizen, RHI takes social responsibility at all locations by carrying out projects that make a positive and sustainable contribution to improving living conditions. The projects and sponsoring activities address the areas of health, fighting poverty, education and sports. RHI supports communities and non-profit organisations such as the Red Cross. Further examples include:

- >> Support of international organisations as part of disaster relief programs for Haiti with a considerable sum (e.g. the United Nations).
- >> The Austrian sites focus on supporting sports for young people and school sports, on promoting culture and education, for example language weeks for students. With respect to university education, Technology Center Leoben (TCL) continued its long-standing cooperation with the University of Leoben and supported symposiums and events, organises excursions for students and grants "internship cheques", which provide financial support for students during their education. Language weeks for students were supported by the Veitsch site. The partnership with SOS Children's Villages, which has been ongoing for many years, was continued with donations by employees and the company in 2010.
- >> The support of local volunteer organisations such as ambulances and fire brigades represents support on the local level by RHI sites.
- >> In Germany, activities mainly focused on projects supporting disadvantaged groups, for example by donations to people in need, such as children or older people without means and socially disadvantaged families, and to employment projects in retirement and nursing homes. Moreover, the German sites supported institutions which provide free food to people in need. Social activities also included supporting disabled people by using products from sheltered workshops and projects helping ill or injured children.

## **Recultivation**

## **Social responsibility**

- >> In Turkey, RHI's Eskisehir site promotes social and health-relevant projects as well as projects and awards that motivate students to protect the environment.
- >> The Italian site in Marone concentrated on providing support for social institutions in the community in 2010, supported health research projects and at the same time set up an important social fund for employees, which covers health expenses.
- >> In Spain, the local RHI organisation supported the city's most important cultural events to maintain customs and traditions – by means of financial assistance, but to an event greater extent through the participation of the organisation's employees.
- >> The support of projects of the Red Cross in disaster management as well as donations to and organisation which makes free-of-charge operations possible for children with heart disease form the basis of Corporate Citizenship of RHI's Ramos Arizpe site in Mexico.
- >> In China, RHI concentrates on projects aiming to fight poverty of students and the rural population in the vicinity of its sites.

### **Health and safety at work**

As competitive pressure increases, the health of employees becomes a key resource of sustainable companies and organisations in all industries. Only a sustainable health and safety at work policy protects and promotes the safety and health of employees in the long term, maintains their employability and increases their performance. Therefore investments in sustainability are worthwhile for all those involved – equally for the company and its employees.

The objective of Health & Safety (H&S) Management at RHI is to develop – against the background of a working environment that changes constantly and increasingly rapidly – new tools, methods and measures that characterise modern health and safety at work. These measures were tested at individual sites of RHI AG in 2010 and implemented at plants worldwide. RHI thus has a health and safety policy that withstands change processes and persists on a sustained basis.

Health and safety at work can only be successful in the long term if it is integrated into the structures and processes of the company. As part of the integrated management system, the health and safety at work segment prevents disruptions of operational procedures, for example caused by accidents, work-related illness or events of damage, and makes a contribution to the financial success of the company. Moreover, the RHI H&S management system also improves legal security in terms of responsibility vis-à-vis employees, customers, and the authorities.

Being a global company, RHI has been dealing with different values regarding safety and health, different behaviours, expectations and needs in the individual countries and markets where the company is present. At all locations worldwide – regardless of their size – we therefore attach great importance in H&S management to the sustainability of measures to ensure holistic workplace health promotion, which form part of the corporate culture. Processes have been implemented in order to ensure the active participation of all employees in operations from the beginning according to

a systematic analysis. They equally comprise clear targets and realistic, integrated measures with the corresponding responsibilities and budgets. The cooperation of internal experts such as company doctors, safety experts, personnel department and development, works council or communications and, as required, external support through accident insurance, health insurance and external consultants contribute essentially to the success of the measures. Use of the participatory health management processes for systematic learning processes and for changes in behaviour in terms of health is the key to a long-term successful H&S policy at RHI.

The measures taken to date have attached special attention to both ergonomic and safe design of the work place and to the prevention and minimisation of psychological stress. Strengthening personal health competence is a focal point in prevention. RHI employees have the option to have a health profile created regularly by occupational medicine as part of the health screening, which is offered on an ongoing basis.

Some new projects were developed in 2010 and implemented in various different locations. One example is an H&S legal decision management system, which keeps the H&S officers up to date on laws and regulations in the area of H&S, so that they can react in time. In addition, all safety liaisons at all locations have to complete an audit in which they have to evaluate three working areas and two of the working areas are defined. In the Health & Safety sector RHI has carried out extensive work-life balance activities for several years. In 2010, employees were given the opportunity to get to know their own stress behaviour by means of biofeedback, impulse test and quality-of-life index according to Elliot and to counteract stress and burdens by increasing resources.

As part of the project "I AM – Information as Motivation", apprentices evaluate their workplace, prepare an analysis and take measures together in order to eliminate potential risks. Projects for young employees who are still undergoing training in the company – and exchanges in particular – have traditionally had great importance. The following projects only represent a few examples:

"RHI-On-Tour": for four years, German RHI apprentices are given an insight into the working world at other RHI sites in Europe as part of a programme of several weeks. The young colleagues work on projects with experienced colleagues and gain new personal perspectives as regards contents and language far away from home. In 2010, seven apprentices spent three weeks at the plants in Clydebank, Scotland and in Marone, Italy. These projects were supported by „Leonardo da Vinci“, a promotion programme of the European Union, which provides, amongst other things, funds to support projects for initial training.

"Money and fire": apprentices from the refractories sector swapped their job with apprentices from the service sector (bank) for a few days, gaining new knowledge and views and widened their social competence. Within presentations, tests, workshops and developments of work pieces they saw new perspectives in the working environment. The opinions and experiences of the young people were recorded in comprehensive questionnaires, evaluated and rated excellent. Started as a pilot project, this initiative is to be extended to other locations in the future.

The site in Hochfilzen, Austria, received an award for its extensive activities in training and further education of apprentices.

It goes without saying that all programmes that have been running for several years were continued and many employees participated. They include health forums, back school, healthy diet (fruit free of charge, healthy menus), safety days, sports programmes (such as the RHI Marathon), and the pro-fit week for all employees.

Many national and international awards reflected the successful path that H&S management has taken in the RHI Group in 2010, for example the quality certificate for workplace health promotion for the years 2010-2012. RHI again received the "MOVE Europe" prize of the European Union for companies that have managed to integrate a healthy lifestyle into everyday work life in an outstanding way. RHI won this award for the project "Work in tune with life," a work-life balance project with biofeedback measuring, pulse test and quality-of-life index.

RHI has attained an excellent position in the area of Health & Safety through a continuous learning and improvement process, comparisons and the exchange of experience. RHI aims to strengthen this position and expand it further in the interest of all employees and a sustainable company development.