

SUSTAINABILITY REPORT 2011



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“ We are going to have to accept that a less secure world demands that we spend more time preparing for and managing change. Sustainability offers us a prism through which we can view and review our progress towards managing this change. ”



An insecure world

The world has changed since our last Sustainability Report. The dramatic events in Japan and the Middle East have demonstrated to us how exposed we are to our dependence on energy. They have shown that a focus on generating more and more energy creates risks that people are simply no longer willing to accept. They have shown that more than ever it's time to save energy.

Yet, whilst dramatic, these events are only a part of the insecure world with which we as a company and as a society have to come to terms. The continued fiscal problems of governments in Europe and the United States are undermining our faith in the financial system and the ability of our markets to operate normally. The volatility of energy and raw material prices is becoming the norm and no longer the exception. Even the responses to these problems, such as a move towards low energy buildings, demands that we come to terms with new realities.

As we move forward, the simple truths of yesterday are no longer sufficient to cope with the complexities of today. We are going to have to accept that a less secure world demands that we spend more time preparing for and managing change. Sustainability offers us a prism through which we can view and review our progress towards managing this change. This, our second Sustainability Report, provides a view of how we are starting to do this. We show how we are increasing our ability to ensure that the benefits that our products bring to society are fully recognised. We also show what we as a company are doing to make us better able to handle volatility and change.

As the CEO of a company whose products bring so many benefits, I remain convinced that Knauf Insulation is part of the solution and as you will see throughout this report and below, whilst we still have much to do to, we have made good progress towards becoming a more sustainable company.

Tony Robson
Group CEO, Knauf Insulation

Selected performance indicators at a glance

This table shows some operational performance trends. For targets and commitments on our wider approach to sustainability, please see the relevant chapters or the summary table on page 32.

	2008	2009	2010	Trend
People				
Fatalities	0	1	0	+
Number of lost time accidents (LTA)	94	128	103	+
LTA frequency rate	16	20	16	+
LTA severity rate	43	29	21	+
Training (hrs/employee)	n/a	12.9	16.8	+
Gender diversity (% female employees)	n/a	16%	16%	=
Environment				
Energy use (MWh/tonne output)	3.02	2.99	2.84	+
CO ₂ emissions (tonnes CO ₂ /tonne output)	0.58	0.52	0.51	+
Water use (m ³ /tonne output)	2.69	2.20	1.94	+
Water discharge (m ³ /tonne output)	0.45	0.59	0.38	+
Non-hazardous waste arisings (kg/tonne)	84.5	92.4	70.0	+
Hazardous waste arisings (kg/tonne)	2.16	2.50	3.03	-

+ Positive trend in performance
- Negative trend in performance

A quick word on data: in 2010 the boundary of our reporting covered 30 manufacturing sites in Europe, Commonwealth of Independent States (CIS), North America and Asia, including the first complete year of data for the Lannemezan plant in France. Of the products we produce Mineral Wool accounts for over 80% of our total annual production. Safety data cover all production plants. Our environmental data currently exclude XPS/EPS/XPE foams and Wood Wool.

About this Report

This Sustainability Report relates to Knauf Insulation, part of the Knauf Group. This, our second Report, sets out our activities during 2010 and includes some information from 2011. The content and quality of the information are guided by the Global Reporting Initiative's (GRI) G3 sustainability reporting guidelines. An accompanying GRI index can be downloaded from our website.

The contents of the Report are complemented by information available online and from other local Knauf Insulation company websites. For details on our management approach to health, safety and environment please refer to our 2010 Report online.

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www.knaufinsulation.com

Who we are and where we are going

Knauf Insulation is an international insulation manufacturer, the third largest in the world, with employees in more countries than ever before. We continue to grow with new plants in 2011 in Turkey and Russia, and increased capacity across our existing manufacturing base. During this time of change we cannot escape the external influence of issues such as climate change and energy security, a construction market struggling to recover from an economic downturn and pressure from internal and external stakeholders.

A mixed outlook

Across our main operating regions in North America and Europe, the economic outlook remains mixed. Europe's construction market is beginning to recover and, supported by strong regulatory pressure to improve the energy efficiency of new and existing buildings, we expect that market conditions will continue to improve. Nonetheless, the continuing fall-out from the 'credit crunch' means that the pace of recovery may be slower than expected. In North America, whilst the Canadian market remains robust, US market conditions remain difficult. Still, we expect to see improvements in the near future and we are convinced that North America will be a strong area of growth over the coming years.

Committed to growth

Notwithstanding the bumpy ride towards economic recovery, we remain convinced of the positive future for our existing markets and for potential growth in new markets. We have had to take difficult decisions in the US to manage the effects of continued weak market conditions across the globe. Despite this we are demonstrating, through the acquisition of new plants in Turkey and Russia, and increased capacity across our European operations, that we believe the medium term outlook for the insulation industry remains very positive. Today, we are an international insulation manufacturer, the third largest in the world. Tomorrow we plan to play an even greater role in helping to make buildings more energy efficient across the globe.

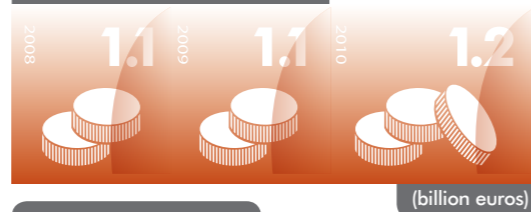
Facts & figures

- ⇒ One of the largest insulation manufacturers in the world
- ⇒ Employees in more than 35 countries at 30 plants
- ⇒ A wide range of insulation manufactured - Glass Mineral Wool (GMW), Rock Mineral Wool (RMW), Wood Wool (WW), Extruded Polystyrene (XPS), Expanded Polystyrene (EPS) and Extruded Polyethylene (XPE)
- ⇒ Primary markets in Buildings, Industrial and OEM applications
- ⇒ Part of the family-owned Knauf Group, a leading manufacturer of building materials

Manufacturing sites



Financial turnover



Employees



NOW WE'RE TALKING

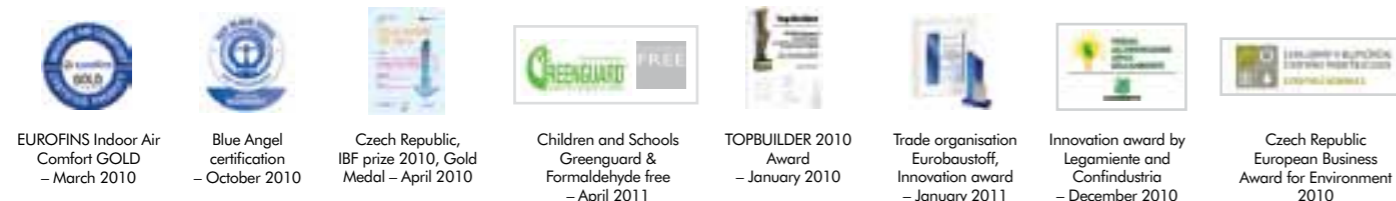


Venus Ignak, General Manager of Knauf Insulation Turkey

It is exciting to be leading a challenging and growing market with rising cost of energy to be managed as well as the new legislative changes in the insulation market in Turkey in the coming years.

Performance and innovation

Throughout 2010 and early 2011 we've had similar success to that in 2009, for our performance as a company as well as continued recognition for our Glass Mineral Wool with ECOSE® Technology.



Getting ourselves organised

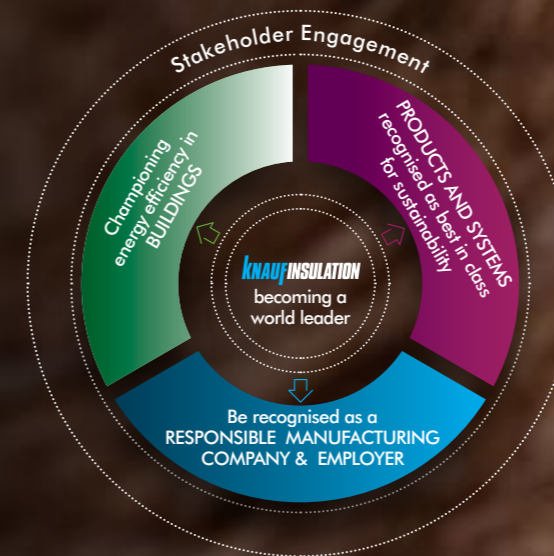
A new sustainability strategy

As a family-owned company producing energy efficiency products we understand that we have a responsibility to think and act sustainably. In fact since the early 2000s we have focused on a number of initiatives relating to product innovation, energy efficiency at major plants, human resources initiatives and high level policy advocacy.

Over the last year however sustainability has taken an even stronger focus in the company as we worked towards fulfilling the commitments set in 2010, with the establishment of a Sustainability Steering Committee and internal 'sustainability champions' group.

Progress on all commitments and an overview of our new commitments for 2011 can be found on page 32.

The outcome of this is a new strategy for sustainability at Knauf Insulation that sets out a clear path to help us become the world leader in energy efficient systems for buildings. The strategy has three parts, shown below.



We hope that this strategy will help cement the valuable momentum achieved over recent years by consolidating sustainability within our growing company. Specifically this new approach will help us to put our house in order, benchmark ourselves against recognised standards and set forward plans for action.

Our Steering Committee

Our new Sustainability Steering Committee comprises people from operations, marketing, human resources, purchasing, regulatory affairs, technical, finance and public affairs. Task groups set up are working to ensure that clear objectives, measurable progress and adequate resources are in place to succeed. Through this process we have established our key issues.

Sustainability Steering Committee

Task group 1 Built environment

Task group 2 Products and Systems

Task group 3 People welfare and development

Task group 4 Sustainable operations

Task group 5 Stakeholders

Our Long Term Aims

Our engagement work and the new Sustainability Steering Committee have helped us review the most significant issues for Knauf Insulation. Through this process we have identified the key areas where we believe we should focus our efforts and set a number of long term aims that will help guide our decision making going forward:

Buildings

- ⇒ A leading advocate for a low energy and sustainable built environment
- ⇒ A zero carbon building stock (owned and operated)

Products and Systems

- ⇒ Products best in class for sustainability

Company

- ⇒ Zero carbon production
- ⇒ Zero negative impact on resource use
- ⇒ Zero waste to landfill and zero waste water discharge
- ⇒ Employer of first choice
- ⇒ Zero harm

Building for change



The Ras Lanuf oil refinery 29 March 2011 in Ras Lanuf, Libya

The modern world is defined, in part, by its addiction to fossil fuels. But we can break this addiction, starting with reducing energy use in buildings.

Our addiction to oil is reckless because alternatives exist that save us all money, are good for the environment and are abundant. This addiction leaves our economies and all of us exposed to the volatility of energy prices. Fortunately, the addiction can be broken by making buildings more energy efficient.

Can buildings really make a difference?

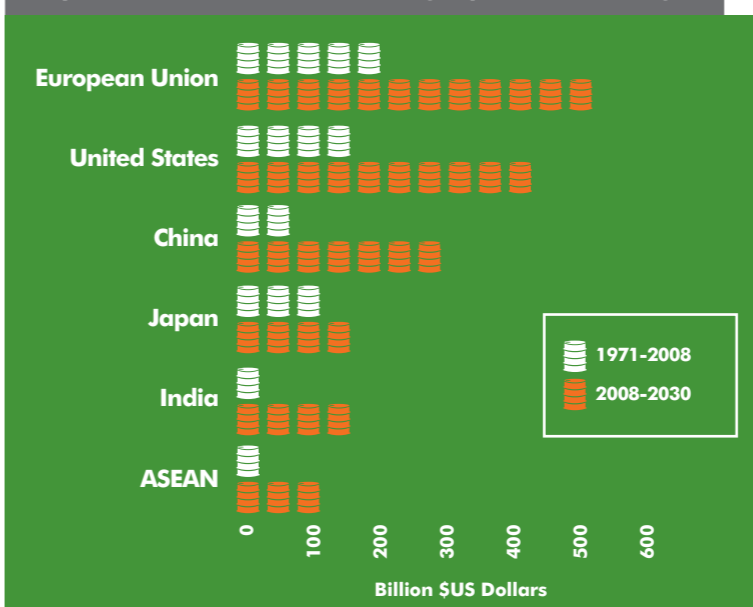
Yes. Buildings are the largest contributor to global greenhouse gas emissions and account for 40% of global energy consumption – mostly used to heat and cool offices and homes. If society could achieve the goal of low energy consumption in all buildings, new and old, collectively we could reduce our global energy use on a vast scale.

Is a low energy built environment achievable?

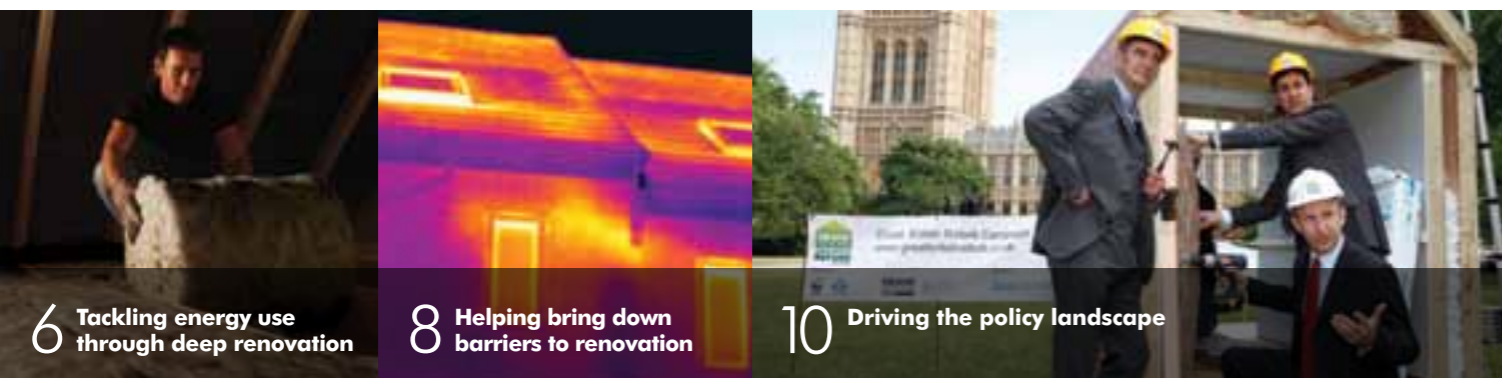
Yes. And the solutions do not require breakthrough technologies; they exist already. As a society we just have to use them.

At Knauf Insulation, we have set our sights on becoming the world leader in energy efficient systems for buildings, and we are working to ensure that by 2050, nearly all buildings will be 'low energy'. As one of the world's largest and fastest growing insulation companies, we feel it is our duty to take a leadership role in working with policymakers to ensure their commitment to 'deep renovation' and to unlocking the necessary finance. Our message is simple – it's time to save energy. Now.

Projected increase in annual average spend on oil and gas



In this section



6 Tackling energy use through deep renovation

8 Helping bring down barriers to renovation

10 Driving the policy landscape

Deep renovation: tackling existing buildings

Many governments have made a priority of improving the way new buildings are designed and constructed. By 2020, newly constructed buildings across Europe will need to perform at 'near-zero' energy levels and although the relevant regulations must be enforced to be effective, their very existence represents a good start to building a better future. But to fully attack the problem of energy use in buildings, we cannot just address the construction of new buildings. We need to renovate existing ones.

New buildings are not replacing old ones

Buildings that are being constructed are rarely replacing old ones – they just add to the building stock. Take Europe as an example; of Europe's existing buildings, only about 0.1% are demolished in any given year, compared to a new build rate of 1% per year. The only way to be effective in making the built environment truly energy efficient is to renovate existing buildings. And if we are to be effective, the only way to do this is by going deep. Deep renovation alone can reduce the energy use of existing buildings between 60% and 90%.

So how deep is deep?

In our view, deep renovation means improving the energy performance of the built environment by at least 80%. This requires incorporating all energy-saving technologies, from insulation and lighting to heating and controls, across all building types. We have the technology to make the gains; the challenge lies in going out and getting it done. To achieve Europe's 2050 goals we need to increase the level of deep renovation to 3% per year, whereas it currently stands at below 1%.

If we are able to achieve this we won't just drastically cut energy use, but we will also create millions of quality, long-term jobs and promote economic recovery through the re-launch of the construction sector.

Fortunately, the construction and policy-making communities are beginning to understand that to affect building energy use significantly, renovation must be deep. But much more work is needed to convince policy-makers of the urgency to renovate Europe's buildings and to propose policies that deliver and that can ensure real improvements are made. This is why we are supporting the Renovate Europe campaign.

Jobs created for every €1 billion:

COAL = 870 jobs



RENOVATION creates 7,000 jobs



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Jan te Bos, Director General, European Insulation Manufacturers Association (Eurima)

// Current regulations are only a drop in the ocean. If you want to cut energy use, create jobs and save money, the best place to go is the deep renovation of buildings. //

www.eurima.org



➔ Deep renovation of the EU's building stock could create 2 million new jobs and save the equivalent of 4 billion barrels of oil per year.

Loft insulation is just one of the many ways to reduce energy through deep renovation



NOW WE'RE TALKING

Adrian Joyce, Secretary General of EuroACE, the European Alliance of Companies for Energy Efficiency in Buildings

// In Europe, even if all new buildings are 'nearly zero-energy' after 2020, the cumulative impact on overall societal energy use will be minimal because these new buildings simply add to an existing energy-inefficient building stock that continues to consume energy at an unnecessarily high rate. As we cannot rely on a (socially unacceptable) 'demolish-and-rebuild' scenario, it is only by carrying out deep renovations of the estimated 210 million existing buildings in Europe that significant energy savings can be achieved. //

www.euroace.org

Renovate Europe - making the case for deep renovation

Buildings are complex. Their energy characteristics vary depending on when and where they were built, regional climatic conditions as well as their purpose. Until recently, no reliable data existed to show how varied buildings are. Basic information such as the total square metres of buildings is poorly known - surprising considering that much of the current legislation on buildings is centred around energy consumption per square metre. It is not surprising therefore that this lack of information has made it difficult to create the appropriate policies and creates challenges for designers of low energy buildings and retrofits.

At Knauf Insulation we strongly believe that to rise to a challenge, you first need to understand what the challenge is. This is why Knauf Insulation worked with our partners within EuroACE (the European Alliance of Companies for Energy Efficiency in Buildings) to create the Renovate Europe Campaign – a campaign to set an ambitious roadmap on how to raise the yearly renovation rate to 3% in Europe by 2020 and achieve an average improvement in energy performance of at least 80%.

The first step of the Campaign was to collect building stock data from all EU Member States. The resulting country-by-country review by the Buildings Performance Institute Europe (BPIE) is the first ever report of its kind, providing a comprehensive 'inventory' of the EU building stock including its energy status.

It is now being used to take the Renovate Europe campaign to the next level and help European governments to turn buildings from energy wasters to climate savers.

The report is available to download at www.bpie.eu



Knauf Insulation is one of the founding members of the Renovate Europe campaign. This ambitious campaign aims to raise deep energy efficiency renovation rates in buildings to 3% per year in Europe.

www.renovate-europe.eu

Bringing down the barriers: challenges facing our industry

We're not naive about the challenges facing our industry in delivering a low-energy built environment. But these challenges need not be barriers. The expertise, the finance models and the knowledge exist to deliver low and zero energy buildings in reality, not just in theory. So we are driving efforts to promote them.

Preparing the foundation – getting to know buildings better

One of the biggest challenges facing the construction industry today is how to resolve the differences between the design and the actual energy, or thermal, performance of a building. Recent research indicates that, more often than not, the difference can be large. If we are serious about changing the built environment then we need to better understand buildings and their energy use patterns.

At Knauf Insulation, we have significantly stepped up our own efforts to ensure that buildings operate as intended when it comes to energy use. We have dedicated an entire programme to building science, bringing together leading building physicists from across the world to develop knowledge on 'as-constructed' building performance. In addition, we continue to chair the official European standards group to develop a common methodology for full-scale testing.

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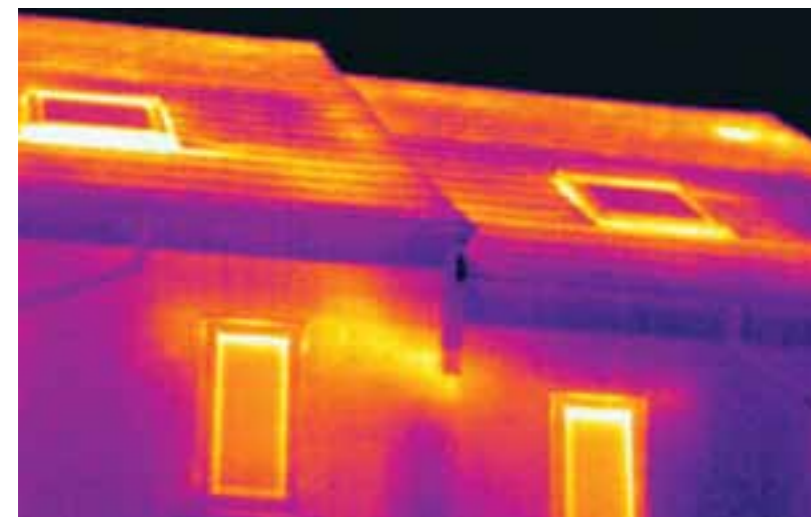
Jez Wingfield, Senior Research Fellow, Centre for the Built Environment, Leeds Metropolitan University

“What many professionals call ‘bad workmanship’ can arise for a host of different reasons – such as unrealistic time/cost pressures, training issues, buildability issues, inadequate testing of products, inappropriate construction sequencing, poor site management, poor design/ad-hoc design changes, cost engineering and uncontrolled product substitution – to name just a few.”

Poor installation, poor performance

This infrared picture shows an example of a ‘thermal bypass’, or leak, resulting from poor installation practices.

Only by truly understanding building physics can we produce insulation solutions that minimise such leaks.



Supporting better building physics

At Knauf Insulation we are concerned by the fact that there seems to be an important gap between the expected thermal performance of buildings and how they perform in reality. As a step towards addressing this issue, we have begun to work with a number of leading building physicists, to get a better understanding of the problem. One of the outcomes of this collaboration, was the organisation of an international workshop on test and assessment methods for building energy performance as built.

In parallel, we have begun our own building physics research programme and have begun to raise this issue with policy makers and the wider industry. As an example, we have been involved in several international events including a training session in Ukraine on the Framework of the European MODEL project led by EnergyCities. The MODEL project helps more than 30 local authorities from Central and Eastern Europe to improve their practical capabilities for dealing with energy issues and to provide examples for citizens.



Frederic Delcuve, Head of Building Science at Knauf Insulation, speaking at a conference on sustainable buildings

Unlocking finance

Recent work carried out for the European Insulation Manufacturers Association (Eurima) indicated that we need to invest around 100 billion euro a year in the energy efficiency renovation of the European building stock to achieve our long term climate and energy objectives. This sounds like a huge investment, and it is, but the challenge for such investment does not lie in funding but rather in unlocking up front private finance, given that the energy savings can more than pay back the investments.

New finance initiatives in the US and the UK

The New Energy-Efficiency Home Tax Credit 45L is a current incentive in the US that allows for a \$2000 credit to a builder of a new home that is 50% above the 2003 International Energy Conservation Code (IECC) requirements. Along with the National Association of Home Builders we are pushing for the credit to be increased to \$3000 in the next funding period.

The UK's new Green Deal programme will allow homeowners across the UK to get their properties insulated at no upfront cost and reimburse firms carrying out the work from the savings they make on their energy bills.



The US Ambassador to Belgium's residence

We recently overcame the challenge of renovating old buildings ourselves, when our Belgian colleagues showed that even the oldest buildings can be given simple but effective energy efficiency makeovers when they teamed up with the Alliance to Save Energy, the League of Green Embassies and six other leading energy efficiency product makers to ‘makeover’ the U.S. Ambassador to Belgium's 230 year old residence in Brussels. Knauf Insulation provided insulation for the previously un-insulated building, preventing up to 30% of the residence's heat loss. The consequent reduction in CO₂ emission is equivalent to two typical family cars for two years. Significant savings from simple insulation measures really are that simple!

www.ase.org

NOW WE'RE TALKING

Peter Sweatman, Founder and CEO of Climate Strategy & Partners and co-author of “Financing Energy Efficiency Retrofits in Buildings”

“Deploying energy efficiency upgrades in buildings at scale has proven elusive, to date, as there are insufficient financial resources available to energy efficiency upgrades and many stakeholders' interests in individual projects are misaligned. Simple solutions are needed to make it as easy to undertake and finance an energy efficiency upgrade as it is to sign up for a new credit card or take out a car loan.”

Making it happen in reality

We know that the renovation of existing buildings comes with challenges. We have been working to show that change is possible even in some of our oldest buildings by sharing our expertise and taking on this challenge ourselves.

Our colleagues in Croatia have been working with historical building experts to show how it is possible to preserve our cultural heritage through better energy efficiency.

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Silvio Novak, Technical Support Manager, Knauf Insulation Croatia.

“Until recently the renovation and adaptation of historical buildings in Croatia has paid minimal attention to energy efficiency and environmental protection. What we are trying to show, along with building experts and historians, is that it is possible to preserve traditional architecture and provide excellent modern-day examples of good building practice through energy efficiency improvements. It's a fascinating project.”

A driving force for change: the policy landscape

This year, we have redoubled our commitment to lead the way and be a force for positive change in the field of energy policy. We are working both alone and with our counterparts across the energy efficiency industry on an ambitious advocacy programme to ensure that policy- and decision-makers at all levels, the world over, are creating a solid and ambitious policy framework to support the transition to a low energy built environment. Our message is loud and clear: it's time to save energy. The world cannot afford to wait.

A Chance for Buildings in Czech Republic

Our Czech team have hardly paused to take a breath since last year's report. We continue to steer the work of 'A Chance for Buildings', a campaign that brings together over 150 companies to promote better buildings in the Czech Republic. The campaign has three goals: to create better policy, to work with building experts to provide better evidence of results and to be better at communicating the benefits of energy efficient buildings to the public. Most recently we have been working actively to ensure the smooth implementation of the Energy Performance of Buildings Directive (EPBD) so that it is ambitious, realistic and supported by industry. Since its inception, the campaign has engaged with senior government ministers and Prime Minister Petr Nečas.

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Petr Vogel,
Chairman of the Czech Green Building Council

“Knauf Insulation was instrumental in initiating the Chance for Buildings Project. With their commitment and sustained support we would be nowhere near where we are today.”

The Great British Refurb project

We have taken our cause to the great British public in the UK through our involvement with the 'Great British Refurb' project headed by broadcaster Kevin McCloud. Kevin takes the voice of the public to the UK's Parliament, actively calling for more affordable refurbishments to be made available.

We have been working with the project team to reach out to members of the public through exhibitions, live web chats, news stories, competitions, real life refurbishments and key online communities such as mumsnet.com. This online community is one of the UK's most active and boasts 1.3 million members.

www.greatbritishrefurb.co.uk



Kevin McCloud, Ed Miliband (Labour Party) and John Healey MP took the campaign to the Houses of Parliament.

Going local in Slovenia

One of the most effective ways to enthuse people about energy efficiency is to take positive examples of energy efficiency directly to them by going local. Knauf Insulation's team in Slovenia have been working with municipalities throughout the region of Gorenjska on a month-long awareness raising campaign on energy and the environment. The project entitled 'Loško je ekološko' gave residents from the Region practical advice and tips on how to save energy, protect the environment and live more sustainably. The project was rolled out through seminars and workshops and through features in the national and local media. Primary and secondary schools from across the region were involved in the project.

Taking our cause to the highest level

At the United Nations Climate Change Conference in Cancun in December 2010, leading energy efficiency companies, prominent European politicians, thought-leaders and campaigners came together to create the European Alliance to Save Energy (EU-ASE). The Alliance is challenging the current status quo on energy efficiency, and opening the eyes of European policy-makers, helping them to imagine a future where energy efficiency is a fundamental part of any programme to secure a safe, reliable, low-carbon energy system. In line with our commitment to be a driving force for change, Tony Robson, Group CEO of Knauf Insulation, currently holds the chair of EU-ASE.

www.euase.eu



"Roll up, roll up! Knauf Insulation is in town. Manager Public Affairs Germany shows that energy efficiency really is, outside the Greenhouse."

Ich spreche energieeffizienz DENEFF in Germany

The landscape of German energy policy has taken a dramatic turn since events in Japan in early 2011. The government's decision to say NO to nuclear has opened their eyes to the need to get serious about energy efficiency.

Luckily, as they got serious about energy efficiency we got serious about promoting what we can deliver. As one of the driving forces behind the newly formed DENEFF – Deutsche Unternehmensinitiative Energieeffizienz, the first ever business-led energy efficiency alliance in Germany – we have been able to form a partnership with government that offers a clear and positive path towards a low carbon economy.

DENEFF was also a driving force behind efforts to extend the KfW scheme after its current financing period. From 2012 KfW will receive 1.5 billion euros a year for the next few years.

DENEFF may be young, but it is making its voice heard loud and clear. And policy-makers in Germany are beginning to listen.

www.deneff.de

Stateside

In North America our colleagues are working with our industry association NAIMA, to provide hands-on and technical support to Jump Start Chicago, an ambitious initiative to renovate buildings across downtown Chicago. The initiative will create an innovative risk management financing facility to attract the private capital necessary to improve commercial building energy efficiency on a large scale.

By rolling out a grass-roots advocacy campaign, we have also been leading efforts to encourage local authorities across the North America to commit to the early adoption of the landmark 2012 IECC (International Energy Conservation Code). The code has the ability to realise historic efficiency gains but only if we can convince local policy-makers to turn it from a voluntary model into a legal requirement.



Chicago skyline

Products at the heart of sustainability



We know that sustainability in buildings is affected by more than just energy efficiency. It is also about the sustainability of construction products.

This, combined with an increased regulatory focus on resource efficiency, means that we need to better understand the 'environmental footprint' of our products.

More demand for resources requires a better understanding of resource use

To this end we have started to apply our Life Cycle Assessment (LCA) programme across product ranges in all our manufacturing facilities and have taken steps to ensure that its principles are embedded in our 'company DNA'. Also, we have widened our product range, extending ECOSE® Technology, our award winning formaldehyde-free binder technology, to new applications.

Ensuring our products are used as intended

In addition, we have started to study the key sustainability characteristics of our products to improve not only the products themselves but the practical matters related to their specification and installation.

We need to recognise that the era of manufacturing insulation for its own sake is long over. And the era of caring for its role in building sustainability is here.

In this section



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Natural resources sustainability

If everyone in the world lived like an average European...



...we would need three planets to live on

According to the One Planet Living report

Product sustainability: using life cycle thinking

The world is currently pursuing an unsustainable pattern of resource use. Put simply, we are consuming more resources than the planet can replenish. The building and construction industry is responsible for about 40% of this consumption. As the energy efficiency of buildings improves worldwide through the use of more insulation, more attention will focus on the environmental footprint of these products.

Governments worldwide have begun to recognise the need for resource efficiency. In Europe, policy-makers have launched a wide-reaching policy programme to improve resource efficiency by looking at ways to enhance EU schemes for eco-design, eco-labelling and green public procurement. At Knauf Insulation we are also gearing up to be able to use and provide Life Cycle Assessments (LCA) for our products.

NOW WE'RE TALKING



Janez Potočnik,
European Commissioner for
the Environment

“ I am encouraged to see that companies are picking up on the potential of life cycle assessment. At the European Commission, we will promote life-cycle thinking because it could become an operational way to factor in the externalities and longer term effects of production and consumption on our environment and natural resources. ”



Recycled glass ready for use in Glass Mineral Wool production process

Resource efficiency: the way we think and act

We strongly believe that LCA is the most reliable tool available to assess the green credentials of construction products and to enable companies to communicate credible, fact-based information about their products to consumers. That is why we have been working for the past two years to make LCA part of our product policy. By doing so we have committed to an attitude of transparency with regard to our production processes.

Promoting the use of LCAs

This year we have pushed aggressively for the use of LCAs in construction products and building standards. In the US, we are working with the experts at UL Environment (independent green claims validation specialists) to prepare an insulation sustainability standard that will be largely based on LCA information. In Europe, our contributions through our trade association, EURIMA, have helped create two new standards, including CEN/TC 350, and have ensured elements of LCA are part of the EU's new Construction Products Regulation.

Developing our own capacity

To be effective such standards and regulations must be implemented and enforced. So we are also supporting efforts to ensure that they are applied to building projects worldwide. To advance this process, we have begun to develop our own capacity to use, understand and communicate LCA both internally and to the marketplace. Using GaBi software, a world-leading tool for life cycle assessments and life cycle engineering, we intend to identify and assess the impacts of our current and future insulation products.

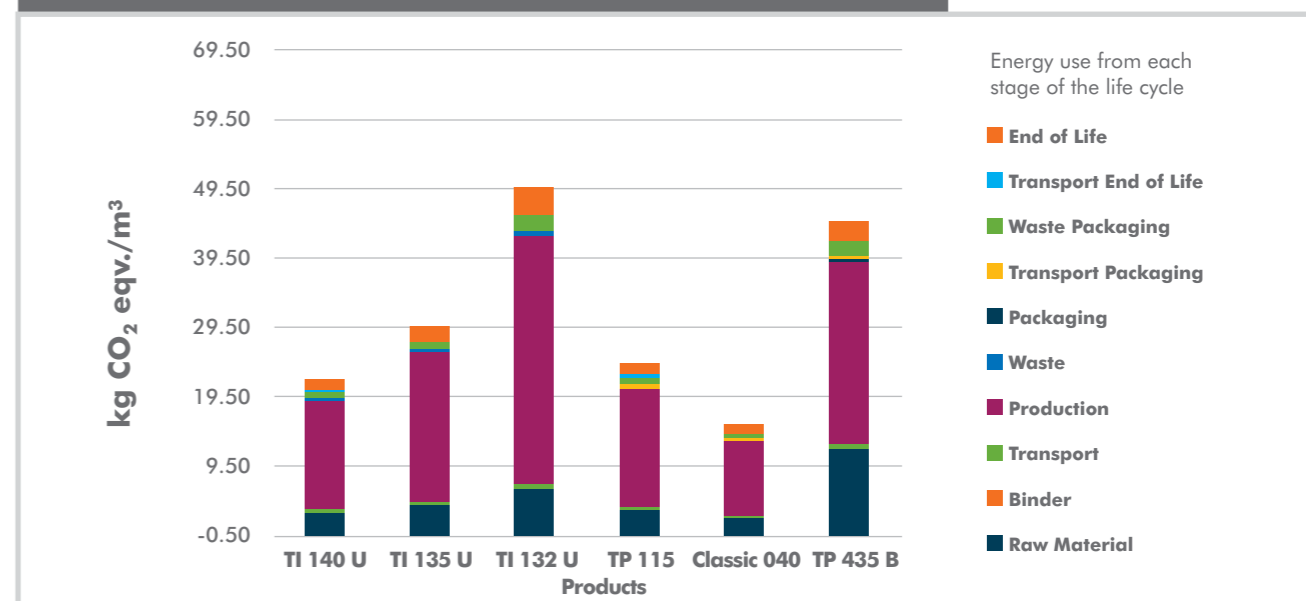
LCA training for LCA thinking

As green claims become increasingly 'creative' across the construction market, they must be sifted, analysed and sometimes refuted or exposed. So, we are also in the process of rolling out a company-wide LCA and sustainability training programme to equip our teams with the information they need to help guide our customers through the maze of environmental marketing claims. By the end of 2012 we intend to train our staff (marketing and commercial) in the programme. Why? Because when it comes to improving our own performance, we all have a role to play.

Working with our industry partners

In partnership with members of Eurima we have undertaken LCAs in 25 Mineral Wool plants across Europe. We are using these results to inform potential new eco-design legislation in Europe to ensure that any insulation product standards that are developed in the coming years are realistic, however ambitious. Similarly in the US, we have been working with NAIMA to provide a benchmark for industry improvement through completing a composite LCA for several types of Glass Mineral Wool products.

Global Warming Potential for a selection of products (EPD Published in Germany)



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Nadine Grard,
Director of Marketing and
Communication,
Knauf Insulation France

“ In France, we are increasingly being asked by our customers to provide 'proof' of the environmental impact of our products. Fortunately, Knauf Insulation products are considered some of the best in class; we have a high percentage of the total number of environmental declarations for construction products in France (FDES), and thanks to our products with ECOSE® Technology and our EUROFINS certificate, we also have some of the most impressive. ”

Sustainable by design: life-cycle thinking at work

LCA studies help determine how we can improve the environmental performance of our products. So far, LCAs have been conducted across 80% of our plants, and we are using the findings to trigger or support improvements. We are well on track to fulfilling our commitment to conduct LCA studies at all our manufacturing plants by the end of 2011.

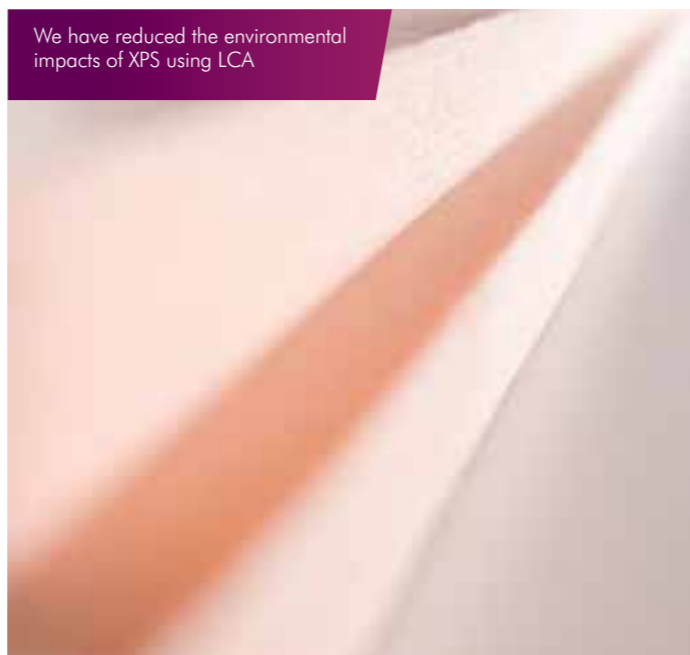
Reducing the environmental impact of polystyrene insulation

To create the bubbles required to expand the plastic matrix in the production of XPS (a foam-like extruded polystyrene insulation material) it is necessary to use 'blowing agents.' An LCA performed at one of our plants in the UK revealed that up to 50% of the environmental impact of our XPS product derived from the hydrofluorocarbon (HFC) blowing agent.

Based on the LCA results, we replaced the HFC with hydrofluoroolefin (HFO), a gas which performs the same job but is non-flammable and non-ozone depleting. An initial LCA (which is pending publication) shows an improvement in the environmental impact of the product between 75% to over 95%.

This type of analysis has driven us to make the commitment to move towards replacement gases wherever possible across our global operations.

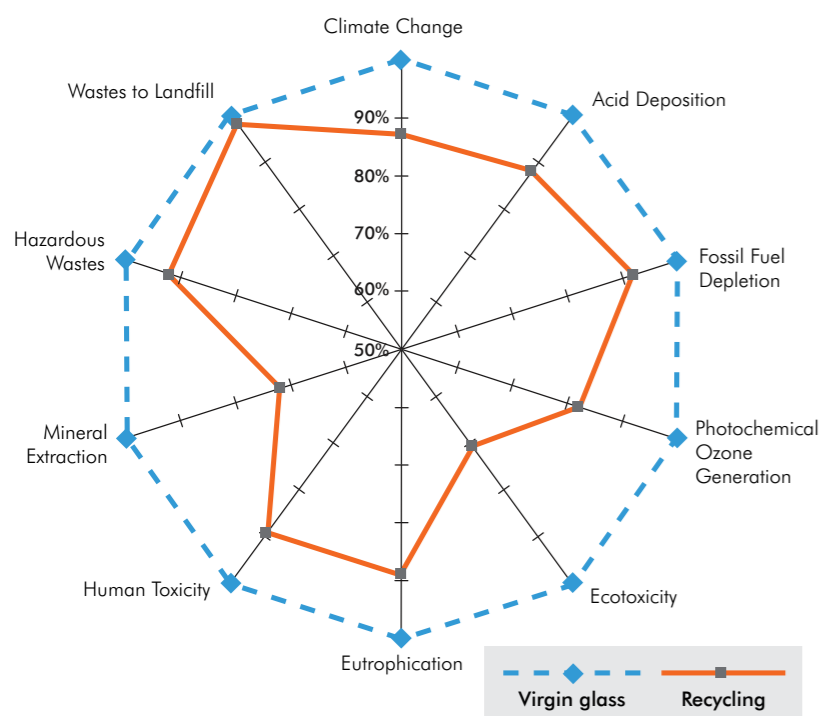
We have reduced the environmental impacts of XPS using LCA



Klima Duct Roll, from our Technical insulation range now made with ECOSE Technology

The benefits of using recycled glass

Across a range of environmental impact categories our LCA work in the UK shows positive benefits of substituting virgin raw materials with recycled glass.



Recycling

Our LCA work has helped to reveal a number of opportunities to increase recycled content within our product ranges. At our foams plants we typically recycle 99% of our polystyrene waste for re-use in the manufacturing process.

We also reuse external, third-party recyclable materials, for example, glass bottles in Glass Mineral Wool, or old CD and DVD cases in XPS manufacture. And we have been working with suppliers to ensure good availability and excellent quality of virgin and recycled raw materials. We hope to see higher levels of recycled content in the future. In Glass Mineral Wool, for example, up to 78% of inputs come from recycled materials. At our Rock Mineral Wool plants use of recycled materials reaches up to 32% of inputs.

In North America, UL Environment has validated our claim of using 55.7% post-consumer content for Glass Mineral Wool products, this is the nation's highest average post-consumer recycled level.

ECOSE® Technology – continuing to impress

Our award-winning, industry-leading Mineral Wool with ECOSE Technology continues to impress. This year alone we won several awards and honours from countries across the globe, including the TOPBUILDER 2010 Award for the most innovative and sustainable construction product and a Gold Medal at the 2010 International Building Fair in Brno, the Czech Republic. The technology has now been implemented across our Glass Mineral Wool product range and we have just started to apply the technology to other Glass Mineral Wool applications, starting with industrial insulation.

It seems that our innovation is catching on. If imitation is the sincerest form of flattery, then our competitors are attempting to flatter us at every turn!



Our award-winning Glass Mineral Wool with ECOSE Technology



See pages 25-27 for more on raw materials management and waste.

Talking with our customers: providing the right product

We are working with our teams to provide more guidance and support to customers on how best to get the most out of our products. But we can't advise unless we listen, so this is what we are doing.

Listening to specifiers

The rise of 'green building' trends across the world has challenged architects to change how they adapt their work practices and how they specify what goes into a building. We help them understand new practices and we provide them with manageable solutions to their own challenges. For example, architects increasingly need environmental product declarations, based on LCAs, to evaluate the sustainability of a building. Our LCAs align well to their Building Information Modelling (BIM) design processes and with the GaBi LCA software and training initiatives we are increasingly well-positioned to help them.

We recognise that the challenge of delivering low energy buildings that work in practice will not be easy. Therefore, we have been working with our customers to help them better prepare for this challenge. For example, in Germany, we have run a number of training courses for contractors centred on our LDS air tightness system, where the focus has been to improve understanding of how to deliver an air tight roof construction.



In Germany, we have run a number of training courses for contractors centred on our LDS air tightness system

NOW WE'RE TALKING



David Ducarme,
Group Technical Director,
Knauf Insulation

“ The best thing we could do for our market is provide only the right insulation technology for each specific application. ”

Do-it-yourself (DIY)

As environmental awareness spreads through society, many people are choosing to take energy efficiency home improvements into their own hands and naturally many are turning to insulation. Unfortunately, mistakes in product selection and installation are easy to make and advice can be hard to come by, which can be frustrating for homeowners.

To simplify matters, we have launched a new range of DIY insulation products called 'Knauf Insulation EASY' (see main picture). To develop this proposition we spoke and listened to over 800 amateur DIY-ers across France, Germany and Poland to find out where they need support. The result is a range of easy-to-identify, colour-coded products for some of the most common DIY applications. We developed a full support toolkit, including an interactive product selector and a range of in-store and online installation guides and videos to help users choose the correct product for their insulation need. Already sold in major retail outlets in Germany, the Netherlands and the Czech Republic, the Knauf Insulation EASY insulation rolls are compact, easy to transport home and easy to install.

Do you have an insulation tip to share? Tweet it.



Increasing numbers of us use social media platforms such as Twitter and Facebook to find advice about saving money and energy through home improvements. Studies indicate that on average 255,000 questions on home energy efficiency are being shared everyday in the UK alone!

'Thinkinsulation', an initiative jointly supported by the UK's Energy Saving Trust and Knauf Insulation, has launched twitter hashtag, #GoGreen to help consumers find answers to their home energy efficiency questions and share green home improvement tips amongst the twitter community. Give it a try!

www.thinkinsulation.com



Fire safety: a critical part of a sustainable building

Across all regions where Knauf Insulation operates, it is evident that misapplied, poorly controlled or simply weak fire regulations are contributing to an unacceptable level of fatalities and injuries within the built environment from fires. With Europe's building stock poised to undergo major renovation to improve its energy use, there is an unprecedented opportunity to combine this with improving the fire safety of the built environment. But this will only be possible if European and national policy makers ensure that fire regulations and their enforcement are dramatically improved.

In order to make this change a reality, Knauf Insulation has teamed up with other concerned companies to found Fire Safe Europe; its role being simple, to advocate for a better regulatory environment around fire safety in buildings.

www.firesafeeurope.eu



Fire protection... with Wood

Fires in underground garages are most commonly caused by burning vehicles, generating large amounts of heat.

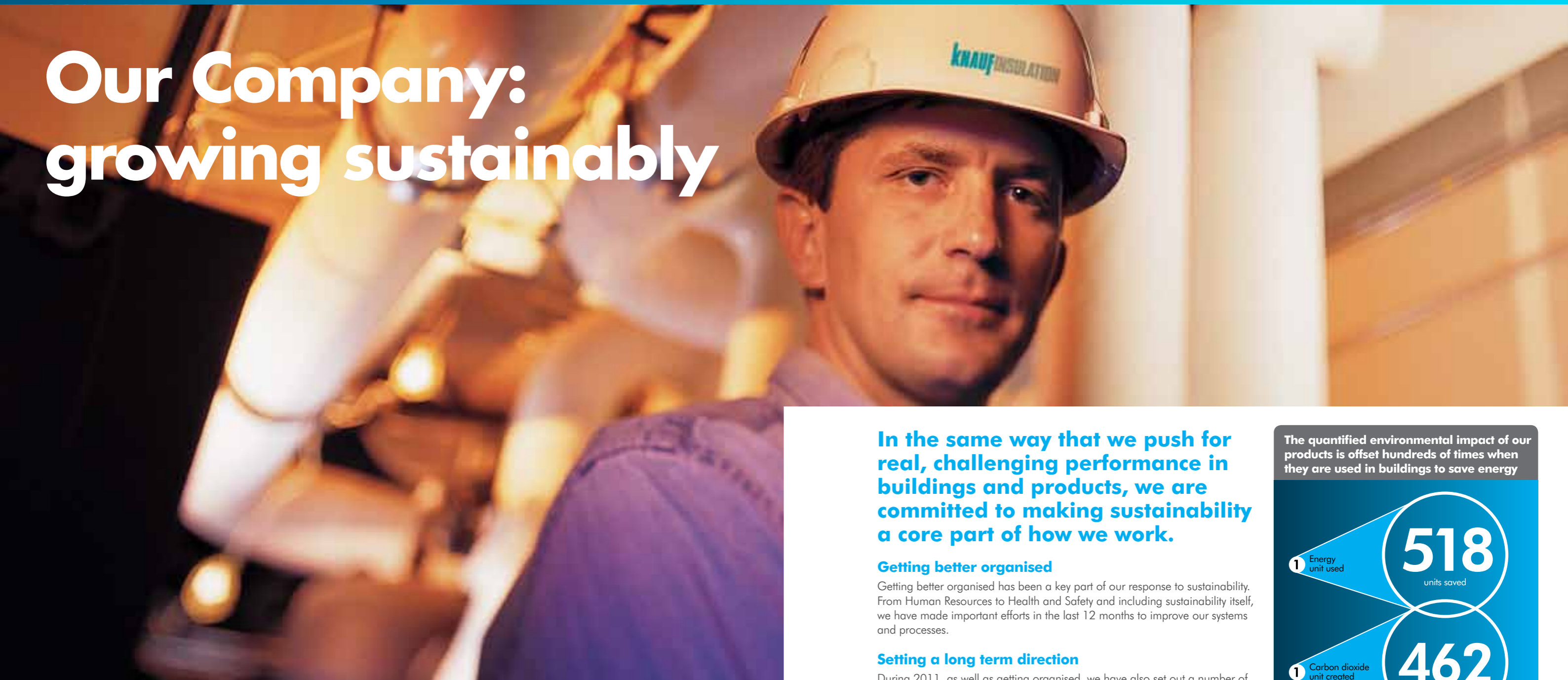
Knauf Insulation's Heraklith® range, has been developed with this kind of scenario in mind. Heraklith® offers multilayer boards with minimal combustibility, as well as non-combustible boards (both A2 class). They do not melt or produce burning droplets, and are rated best-in-class in terms of smoke.

www.heraklith.com



EASY to shop, EASY to handle, EASY to install - The new Knauf Insulation EASY DIY range

Our Company: growing sustainably



In the same way that we push for real, challenging performance in buildings and products, we are committed to making sustainability a core part of how we work.

Getting better organised

Getting better organised has been a key part of our response to sustainability. From Human Resources to Health and Safety and including sustainability itself, we have made important efforts in the last 12 months to improve our systems and processes.

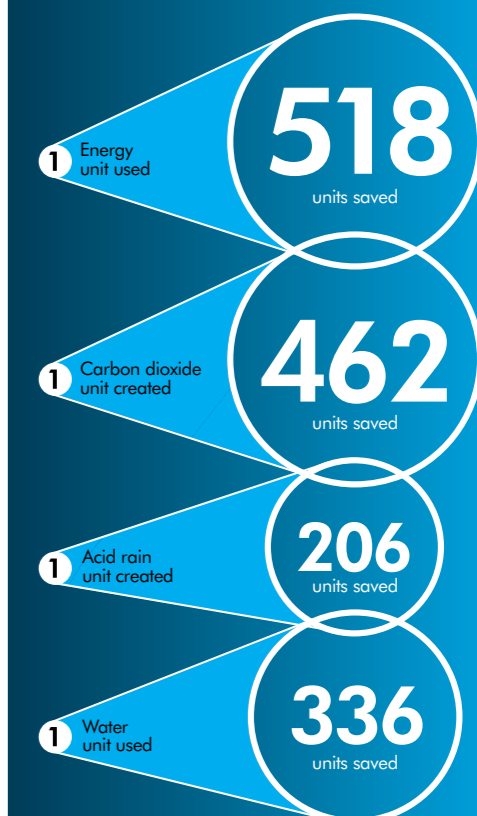
Setting a long term direction

During 2011, as well as getting organised, we have also set out a number of long term aims in the area of sustainable development. We have deliberately chosen aims that are aspirational in nature and which are well beyond being achievable today. However, by adopting such targets we give a clear message to ourselves and to others about the direction we want to go and as importantly which directions are no longer acceptable.

Making it happen

In addition to long term aims, we have also clarified where our short term focus currently lies. Moreover, we have confidence that we can make significant progress because we are already doing so in a number of areas. We have seen improvements in safety management, energy, resource use and in the way we manage our people. An accolade for the way we manage our operations is being one of the first companies in our sector to achieve all four of the most important international management standards for sustainability at all our plants in Europe, Russia and CIS, namely ISO 9001 (Quality Management), ISO 14001 (Environmental Management), EN 16001 (Energy Management) and OHSAS 18001 (Health and Safety Management).

The quantified environmental impact of our products is offset hundreds of times when they are used in buildings to save energy



Results for Glass Mineral Wool with ECOSE® Technology

In this section



22 Reducing our energy and CO₂

24 Using resources wisely

26 Minimising waste, packaging and emissions

28 Looking after our people and communities

Energy and CO₂: energy saved in society, energy efficient operations

Long term aim Zero carbon production

Progress summary

Our plants are becoming increasingly energy efficient over time. Between 2009 and 2010 we saw a continuation of this trend; our energy per unit of output improved by 4.8% and our direct CO₂ emissions improved by 1.8%. Regarding our own buildings, we have begun the audit of our building stock and have several Green Office initiatives, such as in the Netherlands, which have already resulted in some impressive reductions in 2010. We have also begun a review of our logistics which will help us understand what makes an environmentally-responsible hauler.

Short term focus Increasing energy efficiency across activities and piloting renewable energy at production sites.

During 2012 we intend to:

- Understand our energy use; through energy auditing our production sites and mapping the energy and carbon footprint of our outbound logistics and employee travel
- Transfer best practice by continuing to roll out our energy management approach as well starting awareness training for energy usage
- Take concrete measures including the review of our energy mix, the installation of more energy efficient equipment and piloting renewable energy



Performance in 2010

Hidden Summits in Energy

Every plant now has in place an Energy Plan resulting from the new approach. "Achieving EN16001 is a significant milestone in energy management, it involves greater communication with employees on this issue, and the auditors tell me that we have an exceptionally high standard of rigour in our energy management structure," Allan Morgans, Energy Manager, Europe & CIS.



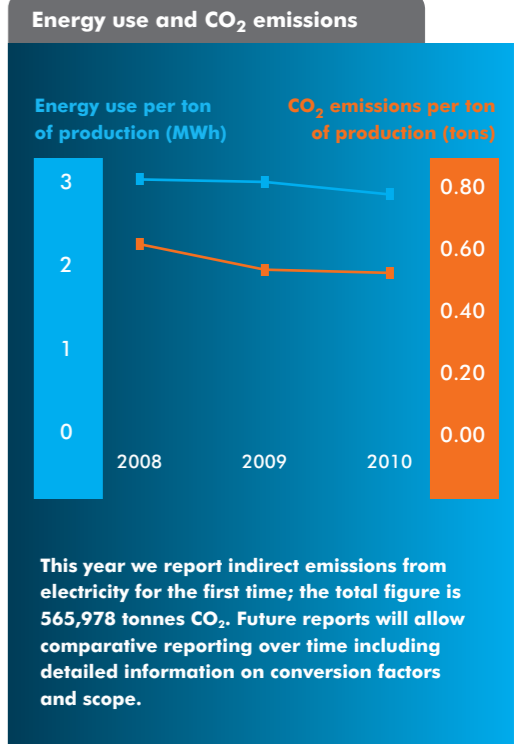
Knauf Insulation at an award ceremony, at Ecobuild 2011, to receive certification for four major International Management Standards

Energy in production

Per unit of output, our use of energy improved by 4.8% and our direct CO₂ emissions improved by 1.8%. From 2011 we will be able to report our indirect CO₂ emissions as a result of our steadily improving data collection process.

Our success in energy efficiency projects over the last decade shows a pioneering spirit in our sector. Finding the hard-to-reach savings is the next elusive pinnacle of achievement in energy efficiency. Naturally, doing so requires a more systematic and structured approach. Enter the energy management standard EN16001, certification to which we achieved across our Europe & CIS operations in 2011. Our approach to data acquisition, analysis, prioritisation and action planning is now more systematic. The step-up in sophistication allows our monitoring and targeting to deal with micro-trends: comparing machines as well as the 'energy behaviour' of employees. Thanks to the work to establish the energy management standard EN16001, every plant now has in place an Energy Plan. This is developed from a sophisticated matrix that helps prioritise what needs attention. Each Plan contains specific targets for each plant, is reviewed annually and is 'owned' by the Plant Manager and supported by the Plant Energy Manager.

In 2011 we have earmarked €4.5m (US\$6.3m) for investment in another tranche of brand new projects to improve energy efficiency, environmental performance and workplace safety across the company.



Cyrille Lerat, Technical Director GMW Europe & CIS, Knauf Insulation

"We believe that we have the tools in place to ensure a continued and sustained improvement in our energy performance. At central and plant level, we have developed, in each Glass Mineral Wool plant in Europe & CIS, monitoring tools which provide real time energy data, allowing us to develop energy action plans as well as monitor and target energy use in order to make savings. The use of recycled materials in our batch recipes along with technological improvements to our process combine to achieve a CO₂ footprint reduction and hence an energy saving per unit of production. We now need to integrate more renewable energy into our energy portfolio and maximize employee engagement in monitoring and targeting our Energy consumption."

It takes very high temperatures to melt glass to make Glass Mineral Wool

Efficient transport and logistics

We have started a program to better track the CO₂ footprint of our transport. On top of this, our transport companies must ensure proper fleet management systems, ensuring regular update of their trucks to European engine classes and standards. These requirements are a standard prerequisite in our purchasing policy and integrated within our tendering processes for transportation services. We equally have engaged with our haulers to obtain standard reporting of their CO₂ emissions. Together, these activities will help us achieve the common goal of significantly reducing the footprint of the logistics operations.

Auditing our own buildings

Further to our previous commitment in 2010 we started the process towards auditing our building stock. Our Green Office initiatives will help employees to use our buildings better. Some have already started, such as our Ukraine team which works with Club A4, an initiative devoted to a set of approaches and techniques that decrease the negative environmental impact of regular office activities, particularly with respect to paper use. In Oosterhout, the Netherlands, our team has already made significant savings both at plant and production level and has great plans for 2011.

Employee travel

We appreciate that employee travel contributes to our energy and CO₂ impacts. We are piloting a programme in the UK to measure the energy efficiency of employee travel and we intend to roll this out across the company throughout 2012.

Raw materials and water: using them wisely

Long term aim Zero negative impact on resource use

Progress summary

As part of being resource-efficient, we have increased the use of recycled content in our operations. And we are using better data to improve our understanding in this area.

Our water intensity figures show positive eco-efficiency trends despite exceptional patterns of water use relating to recent product development and plant renovations.

Our supply chains are generally stable and resilient. We are building on our existing purchasing policies and practices to enhance our approach to responsible supply chain management.

Short term focus Increasing recycled content in products, reusing resources where possible and better understanding the sustainability of our supply chain.

During 2012 we intend to:

- Better understand our suppliers, our products and impact on resource use through LCA
- Transfer best practice, by benchmarking the performance of our plants on key resource efficiency issues such as water usage and recycling rates
- Take concrete measures including piloting pallet take-back options, best practice technology and implementing a cullet increase plan for our Glass Mineral Wool



Performance in 2010



Simplicity at Cwmbran – just add water

It rains a lot in South Wales, home to our Cwmbran plant, and now, when it does, we no longer need municipal water for our wash-water system nor do we send storm water to the river. We recently installed a new rainwater capture system which re-uses a huge, redundant diesel tank. We put in pipework and a control system to complete the job in an exceptionally cost-effective manner. We estimate water savings of nine cubic metres per hour when it rains. Cost savings arise from the reused tank, reduced effluent treatment requirements and eliminating storm water interceptor cleaning. "Not every problem has a high-tech solution – we found a simple, sensible and highly cost-effective, clean technology solution as part of how we manage water at Cwmbran" says John Morris, Projects Manager, Knauf Insulation Northern Europe.

Using a redundant diesel tank to capture rainwater

Material improvements

We invest in new ways of using recycled materials from other industrial processes and from our own off-cuts. We use life cycle assessment (LCA) to understand the impacts of all our products from cradle to grave, looking at product safety, recycled content, embodied energy and waste. We are constantly increasing the use of recycled cullet in Glass Mineral Wool. Why? Because it saves energy and removes a reliance on virgin raw materials. Our product development teams acts like a central store of expertise in the company, sharing knowledge and experience across plants and testing quality. Challenges relating to recycled content include high quality supply, getting the chemistry right for it to be usable, and a trade-off from increased air emissions requiring increased abatement.

In XPS manufacture we reuse CD and DVD cases. We carefully monitor the provenance, availability and quality of virgin and recycled raw materials as a core part of the business. For Rock Mineral Wool we commonly use recycled raw materials. Finally, our products themselves are recyclable and we are piloting product related take-back initiatives in Europe.

Steadily increasing recycled content

At our Krupka plant the proportion of external recycled glass in Glass Mineral Wool reached 78% in 2010, while Visé in Belgium reached 70%. During Lannemezan's first year of production (2010) in France, the figure reached 60% while St Helens in the UK saw its highest level ever, at 70%. At our Queensferry Rock Mineral Wool plant in the UK, 32% of input materials were from recycled sources such as reclaimed construction materials. In the UK, the industry definition of recycled content includes internal recycling streams; this allows us to report higher recycled content - up to 85% in some cases. In addition, at our foams plants we typically recycle 99% of our polystyrene waste for re-use in the manufacturing process. We are proud to report that in 2010, across all our insulation factories, we used three-and-a-half-times more recycled content than we sent waste to landfill.

Alternative ingredients

We are building on our successes, for example on cutting out phenol formaldehyde, and we are developing further our commitment to replace fire retardant chemicals such as HBCD in our EPS and XPS products. We are currently testing new solutions and will phase out HBCD entirely.

Stronger supply chains

In 2010 we began work on a more standardised approach to supply chain issues such as raw material risk, local business practices and supplier alignment to national and international standards. We began developing a three stage approach: (i) an extended 'due diligence' process, (ii) mapping the supply chain and (iii) initial dialogue with key selected suppliers. We already engage with many first tier suppliers and over the next three years the three stage approach will help enhance this. As the supply chain programme develops we will increase the range of sustainability issues covered. We will include monitoring of performance, feedback processes and planning what to change with suppliers by the end of 2013. As the programme and the engagement with suppliers develop, we will be able to tackle more difficult business challenges such as decarbonising our supply chain.

Technology

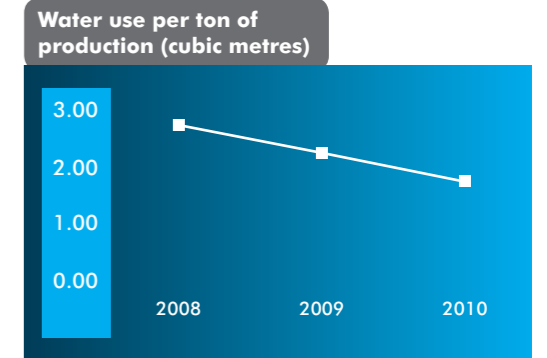
Well-maintained fixed assets and equipment are vital to achieving efficient and safe operations and distribution. We continually invest in cleaner process equipment and we monitor the resultant benefits. When we install new kit we ensure employees know how to use it so that the desired efficiencies or safety targets are achievable.

Liquid assets - water-efficiency improves

Water management is an important issue that benefits from careful process control, recycling initiatives, stakeholder involvement and technology investments. Our new strategy aims to show responsible management of water use, water discharge and water supply risk.

We used 12% less water per ton of product manufactured than in 2009. Happily, if you imagine the water consumed in the manufacture of insulation required for a typical Eastern US home, it is 'recovered' after only 1200kWh of energy saved.

Our water comes mainly from municipal sources; our use of water from other sources is decreasing over the years and we record no negative impacts of our operations on areas of high biodiversity value.



For more on energy see page 22, for waste management see page 26, and for human resources see page 28.

Waste and emissions: 'designing out' waste through product and packaging innovations

Long term aim

Zero waste to landfill and zero waste water discharge

Progress summary

We continue our waste minimisation and recycling practices across the company to drive down waste to landfill. Non hazardous waste sent to landfill per ton of production fell by 23.9% since 2009, hazardous waste to landfill per ton of production increased by 21.1%. From 2009 to 2010 we recorded increases of 9.6% NOx and 1.4% SOx per ton of production. Our water discharge decreased by 6.4% per ton of production from 2009 to 2010.

Short term focus

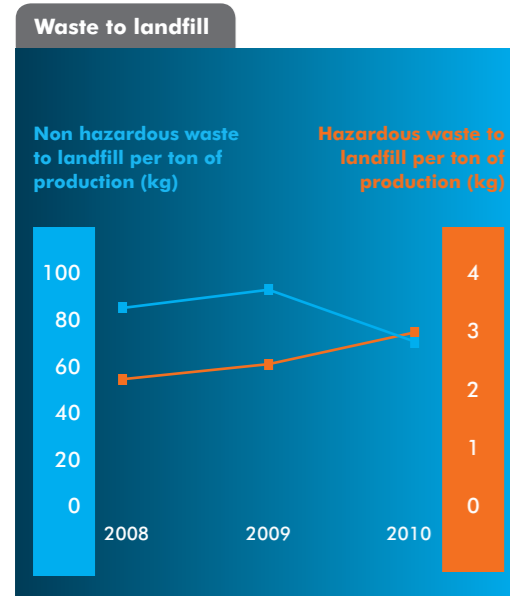
Reducing waste during production and from installation as well as driving best practice and piloting new technologies for water and emissions.

During 2012 we intend to:

- Help others reduce waste at construction stage and increasing opportunities for our waste to become raw materials for others
- Better understand our challenges by benchmarking the performance of our plants on key waste, water and emission issues
- Identify and implement best-in-class approaches across the business
- Take concrete measures including implementing action plans where our benchmarking has revealed opportunities to improve performance



Performance in 2010



Waste to landfill

We actively manage and monitor waste. Our global management systems cover waste management completely: waste to landfill is a key performance indicator. Non hazardous waste sent to landfill has fallen by 23.9% per unit of production. Hazardous waste to landfill increased by 21.1%, on investigation however we found that the increase was due to doubling the production at a plant where the local hazardous waste definition was much wider. Removing this anomaly shows a reduction of 22% overall. Over the next year we will work to standardise our hazardous waste definition and look for more hazardous wastes recycling opportunities across the company. By 2014 we are aiming to reduce waste to landfill to less than 0,5 % in all our Rock Mineral Wool plants and next year we are piloting a waste management programme in our plant in Škofja Loka which should achieve this reduction already by 2013.

During the construction of a building it is preferred that the waste arising equals the amount of materials re-used in the project. Such zero net waste is commonly achieved with insulation products. Our contribution to the fight against waste is greatly helped by recycling waste from our manufacturing site but we will also be piloting a take-back initiative to reduce waste at construction sites.

Queensferry waste to landfill plummets

Zero waste to landfill? We are practically there at our Queensferry RMW plant in the UK. In 2007 we recycled 70% of our product waste off-site. By 2010 we had included reclamation and re-use of product waste on-site and the recycling rate hit a highly credible 96%! After extensive preparation, testing, a partnership with the National Industrial Symbiosis Programme (NISP) and good old tenacity we selected a new waste contractor who shared our aim to turn waste paper, wood, metal and plastic into revenue. After extensive testing, and thanks to the NISP partnership, Hanson Cement now takes some of our more difficult waste as a feedstock, so making significant cost savings. We are piloting a similar project on hazardous fly ash. Our site-specific waste management goal is to send less than 0.2% to landfill by 2012.



We are looking at ways to reduce packaging across our product range

Packaging waste

It's fair to say that our responsible packaging solutions are well known. Supakube™ is our best-known compression technology. It makes warehousing a breeze and allows customers to receive more product per full load delivered, with fewer trips between the job site and the warehouse. Our durable Master Bags – in North America for instance – protect the product from damage and allow more efficient and safer use of warehouse stacking space. We have used recycled plastic since 2004 and recycled pallets since 2005 in our UK operations, and we combine ECOSE® Technology with a responsible packaging technology to showcase this area of sustainable manufacturing. We currently do not collect data on the amount of packaging waste sent to landfill.

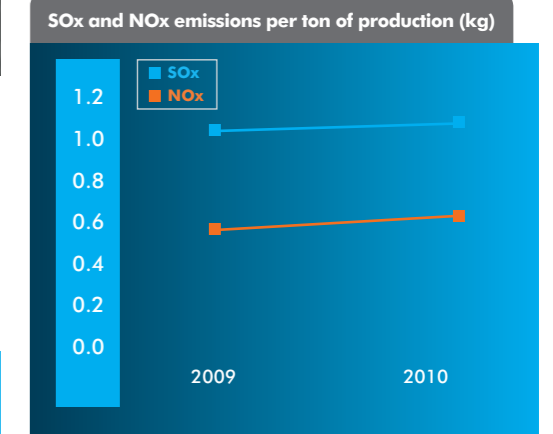
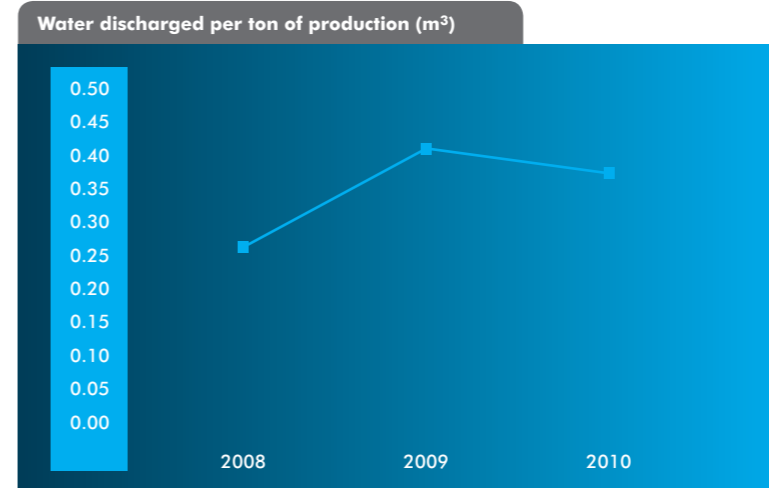
Our products and packaging are recyclable and we operate take-back initiatives in selected locations.

Emissions to air

2010 is the first year that we have comparable data for NOx and SOx: from 2009 to 2010 we recorded increases of 2.6% NOx and 3.6% SOx per ton of production. We are planning the next steps in how we manage this issue as part of our new clean technology investment programme. This includes an appropriate baseline for the future management of the issue.

Water discharge

Water discharged to treatment plant or sewer is a heavily regulated activity across all our markets. We are exploring technological measures to reduce wastewater volumes, and our Lannemezan plant in France is a good example of closed loop water recycling. Our water discharge decreased by 6.4% per ton of production from 2009 to 2010.



Note: Due to the very limited scope of data available in 2008 the emissions data for that year are not shown.

Our people: the core vital fibre ensuring accountability

Long term aim Employer of first choice

Progress summary

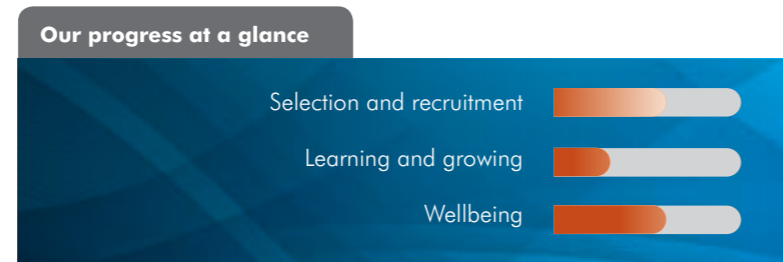
Our company is growing fast and with it we're evolving the way we manage our human resources (HR) function. In 2010 we began embedding the importance of HR in the mind of management. For the second year we reinforced the new electronic appraisal process across the company.

On equal opportunity, compared to last year we record no significant changes in male:female or hourly:salaried contracts ratios or geographic distribution. We increased our full-time equivalent employees by 154 from last year as of 31 December 2010.

Short term focus Aligning, clarifying and professionalising the HR processes across the company.

During 2012 we intend to:

- Better understand our challenge by benchmarking ourselves against international standards and working to understand where improvements can be made
- Transfer best practice by aligning HR practices across the company
- Professionalize our approach to areas such as succession planning, personal development plans, retention, recruitment, working abroad, work-life balance and performance monitoring



Performance in 2010

NOW WE'RE TALKING



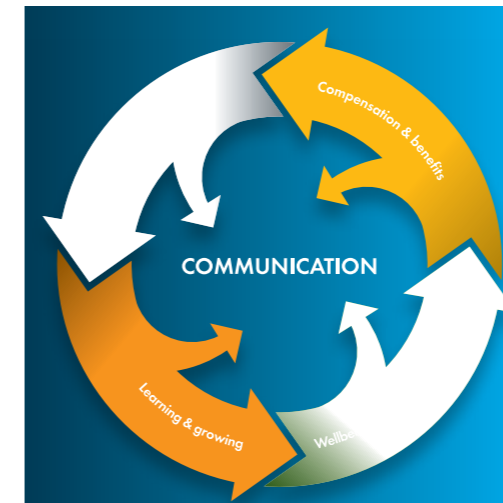
Corine Cornet,
Group Human Resources
Director, Knauf Insulation

“Being an ‘employer of first choice’ means being the company that employees want to stay with, where loyalty grows and openness is fostered, where employees are nurtured and retention is high. It also means a degree of external recognition for being a great place to work.”



Knauf Insulation employees at an internal training session in Ferndorf, Austria

Our four long term focus areas in HR



- Selection and recruitment**
 - “Employer of first choice”
 - Clear job profile
 - Better induction processes

- Compensation and benefits**
 - Greater transparency
 - Incentives and targets
 - Company car policy
 - Insurance benefits

- Learning and growing**
 - Career management and succession planning
 - Talent development
 - New training programme
 - Performance appraisal
 - Retention
 - Knowledge management

- Wellbeing**
 - Welfare during change
 - Cultural integration and diversity
 - Alignment across our operations

Employing the best: selection and recruitment

We will strengthen every day the message to employees about what it means to be with an ‘employer of first choice’. We are now starting to develop the new changes to make finding potential recruits easier, to improve internal recruitment and to guide interviewers on areas such as competency frameworks, diversity and fairness in recruitment. We intend to boost academic partnerships to recruit the best people upfront. We are working to improve job profiles and to help identify training needs. Finally, we are also improving our website to make it much easier for potential recruits to apply.

The right reward: compensation and benefits

As we put in place greater transparency and new HR approaches we want to see employees recognised for their contributions and supported in their lives. We have introduced greener company car policies in certain countries, employee insurance benefit are improved, and for the future we want to work on more flexible benefits to match the stages of life of each employee. One of our objectives is to look after people who complete an overseas secondment and we are preparing a new expatriate working policy covering financial, residential and security issues. This work fits with the new evolution in how we manage HR: with greater transparency and openness!

The right training: learning and growing

The 2009 performance appraisal revealed some major training and development needs. In 2010 the feedback exercise revealed a pressing need for deeper improvement across Europe and regions. HR will ensure a follow-up of the e-appraisal by setting up a group intra-company training calendar in 2012-13 and individual training plans. We delivered 16.8 hours of training per employee in 2010 up 30% from 2009 (figures exclude data from 26% of our workforce: North America, Australia and three Europe/CIS sites).

Wellbeing at work

Closely related to occupational health and safety management, wellbeing is a crucial part of human resources. It covers psychological and physical vitality, using policies, programmes and common sense to nurture a fit, happy and productive workforce. It underpins our desire to make Knauf Insulation an attractive, trusted and inspiring employer. In 2010 we saw a good level of stability in labour relations, global employee retention, absence and allocation of long service awards, and again recorded no fines or sanctions resulting from breaches of regulations governing labour or human rights at work.

Our employees use our intranet systems for more on welfare policies relating to smoking cessation, nutrition, healthy lifestyles, medical support initiatives, health checks, manual handling advice and disabled facilities.

Partnership in adversity at Lanett

In June 2011 we informed all 146 employees at our Lanett plant (USA) that production would be put on hold. We delayed the action as long as possible through new product launches and share growth, but due to drastic reductions in new home building in recent years in the USA, demand dropped and we were forced to take this difficult decision. Our CEO for North America, Mark Andrews said:

“We recognize the devastating effect this will have on our valued employees at Lanett. We are doing our best to take care of them by providing pay and benefits for a period of time, utilizing our employee assistance program, and leveraging the tools made available by the Alabama’s State Governor’s Economic and Community Affairs ‘Rapid Response’ team. We will continue to reassess opportunities for Lanett.”



Safety and community: good progress, steady developments

Long term aim Zero harm

Progress summary

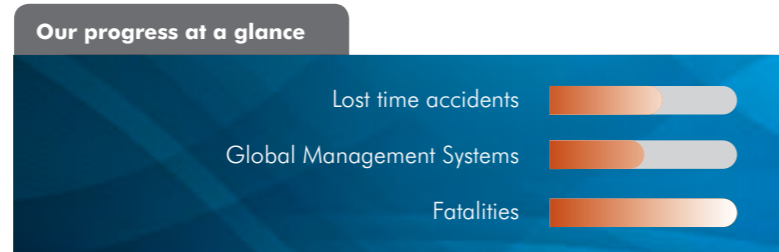
We continued the work to improve the current way that we approach safety through putting in place the right management systems and this year we received certification for the International Management Standard OHSAS 18001 (Health and Safety Management) for all our Europe, Russia and CIS plants by one of the leading conformity assessment organisations, Bureau Veritas.

Short term focus

Improved systems, reporting and training for our people on safety.

During 2012 we intend to:

- Better understand our challenges by continuing to improve reporting around key safety aspects and implementing a Group Workplace Health Measurement approach
- Transfer best practice by benchmarking our performance across our plants and externally, ensuring that every plant is aware of how well it is performing versus other plants
- Take concrete measures by continuing the roll-out of our HSE Integrated Management System globally



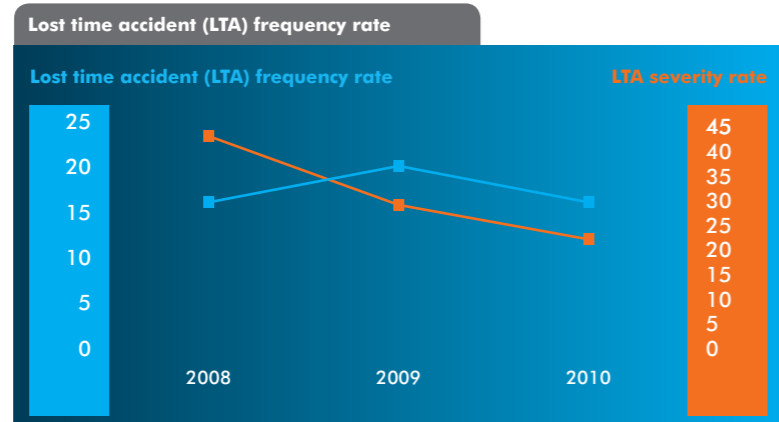
Performance in 2010

Safety

This is a clear leadership issue for us and our peers: everyone goes home safe and healthy every day of their working life. Performance systems alone won't achieve this: it's working with people, adjusting behaviour and constructive relationships that help achieve it too. We aim to harness the beliefs, experiences and attitudes of our people toward a 'zero accident' way of working.

Safety is managed by our HSE teams and is a top priority alongside management of schedule, production and cost. Our management approach ensures we share best practice and persist with improvements. Alongside management systems we will be using 'visible leadership' by senior teams, behavioural programmes, analyses of attitudes, universal openness including contractors, remedial action plans, strong safety reporting.

The chart shows a positive trend since 2009. We experienced no fatalities in 2010.



LTA frequency rate: Total number of cases in the year/Total number of working hours x 1,000,000
LTA severity rate: Total number of Lost Days/Total number of LTAs



Safety is a key operational issue managed by our HSE teams

SOS Planet in Liege

Knauf Insulation worked with colleagues from Knauf Gypsum Belgium to help set up the 'SOS Planet' exhibition in Liege, a twin neighbouring two of our plants.

As well as providing external and partition wall systems that combine our Mineral Wool with ECOSE® Technology and an appropriate selection of plasterboards, we also contributed to the design and messaging of the expo at Liege station. The exhibition attracted over 200,000 visitors from all over the world.

www.sos-planet.eu



Community

Looking after relations with host communities and neighbours is simply part of who we are. Over recent years we have published case studies and a video about community relations, and we are very often the largest employer in the towns where we operate. Along with setting up management systems, targeting zero accidents for longer, using resources efficiently and engaging staff, there is a clear need for excellent community relations. Our technical department, operations managers and marketing teams all 'own' the approach to community engagement at Knauf Insulation.

We will be strengthening how we engage with stakeholders over the next few years in order to add value, expose opportunities and minimise business risk. Communities will be included in this work.

In 2010 we continued our work in local projects, many of which aligned with the need to improve insulation in homes and municipal buildings. Projects in 2010 included, from the US, the 'Millard Fuller Legacy Build Construction and Renovation' project for homes in Indianapolis. It will be a combination of Knauf Insulation EcoBatt® Insulation and Knauf Insulation EcoSeal™, a sealant that protects against drafts, saves energy and protects indoor air quality. The project will have a significant impact on Indianapolis and the families that will soon become homeowners as a result.

"We're humbled to be part of such a worthwhile community service and are pleased to donate market-leading products that provide energy savings and comfort with better indoor air quality", Joey Viselli, Knauf Insulation North America Vice President of Marketing.

Krupka celebrating more than a birthday

2011 sees the Krupka plant celebrate five years of operations! We appreciate the stability, loyalty and cohesion of the plant team we assembled in 2006.

We celebrated in traditional style, with our insulation plant-shaped cake, we opened the plant to local citizens to understand their needs, and Knauf Insulation volunteers also ran a day trip for children with disabilities from the Arkádie charity. Finally we celebrated our birthday by funding and leading the reconstruction of a play park in the local town of Nové Modlany.



Jan Brazda, Plant Manager, Krupka, Czech Republic, and the children in Nové Modlany

NOW WE'RE TALKING

Ms. Lenka Machaloušková, Head of Arkadie

"Volunteering is perhaps the most unusual but definitely the most appreciated way of working with companies. The arts and sports we went on together brought us closely together; KI also helped us insulate our school and supports us financially. In 2010, Knauf Insulation won our best partner award!"

Next steps

Summary of commitments and targets

Our key commitments and progress are shown below. We have set out a number of long term aims that are aspirational in nature and which are well beyond being achievable today. However, by adopting such targets we give a clear message to ourselves and to others about the direction we want to go. In addition, we have also clarified where our short term focus currently lies.

Knauf Insulation mission: 'To be the world leader in energy efficient systems for buildings'			
Area	Buildings	Products and systems	Company
Objective	Be recognised for championing energy efficiency in buildings worldwide	Have products recognised as best in class for sustainability	Be recognised as a responsible manufacturing company and employer
Long term aim	A leading advocate for a low energy and sustainable built environment A zero carbon building stock (owned and operated)	Products best in class for sustainability	<ul style="list-style-type: none"> › Zero carbon production › Zero negative impact on resource use › Zero waste to landfill › Zero waste water discharge › Employer of first choice › Zero harm
Short term focus	Continue to take a leadership role on low energy buildings Build Public Affairs capacity in the area of energy efficiency	Better understand the impacts of our products through life cycle thinking	<ul style="list-style-type: none"> › Increasing energy efficiency across activities and piloting renewable energy at production sites. › Increasing recycled content in products, reusing resources where possible and better understanding the sustainability of our supply chain. › Reducing waste during production and from installation as well as driving best practice and piloting new technologies for water and emissions. › Aligning, clarifying and professionalising the HR processes across the company. › Improved systems, reporting and training for our people on safety.
Progress against activities and targets for 2011	<ul style="list-style-type: none"> › Building energy use: Carry out an audit of our entire building stock with the aim of developing and implementing an energy efficiency refurbishment programme ● 	<ul style="list-style-type: none"> › Product ingredients: Continue to work to phase out phenol formaldehyde and to find alternatives to HBCD ● › LCA of our products: To have undertaken LCA from all our plants by the end of 2011 ● 	<ul style="list-style-type: none"> › Management approach: Completing HSE integrated management system across Europe and CIS ● › Management approach: ISO14001 in place in plants across Europe and CIS by end 2011 ● › Employee welfare: New commitments on global welfare schemes in the next reporting period, 2011 ● › Product ingredients: Across our product range continue to find ways to increase use of recycled materials both from post-consumer and post-industrial sources ● › Recycling in manufacturing: Report recycling rates and set targets for improvement in Europe and CIS ● › Recycling in logistics: Review of pallet take-back across Knauf Insulation in Europe and CIS ● › Energy in operations: Identify more opportunities for renewable energy sources ● › Transport: Report global transport-related energy and carbon performance in 2011 ●
Activities and targets for 2012	<ul style="list-style-type: none"> › Expand our own public affairs capacity › Work to improve the national capacity of our industry to be effective › Continue to take a leadership role on low energy buildings › Expand our building physics programme with a focus on delivering real thermal performance in buildings › Finalise our buildings audit including an audit of our factories › Develop sustainability guidelines for the purchase and rental of new buildings › Review the results of the building audit and develop a programme to improve the energy performance of our building stock › Roll out a green office programme across the company 	<ul style="list-style-type: none"> › Continue the roll out of LCA analysis of our products, with the goal that 50% of our products will be covered by LCAs › Formalise interaction between LCA outcomes and NPAD process › Roll out full training programme of our marketing and technical staff on LCA thinking › Begin customer training on LCA thinking › Piloting a take-back initiative from construction sites 	<ul style="list-style-type: none"> › Roll out our HSE integrated management system globally › Develop employee awareness training for energy usage › Survey our production plants to identify potential for energy reduction through better thermal insulation › Continue to save energy by installing more energy efficient equipment in plants and offices (e.g. lighting) › Implement a company-wide energy monitoring system › Methodology and target definition to map CO₂ footprint for finished goods distribution › Cullet increase plan – PPD and plants › Increase opportunities for recycling Wood Wool › Group Air Monitoring (SO_x, NO_x, Phenol Formaldehyde) › Group Workplace health measurements to identify non-conformities and improve working conditions › Reduce waste to landfill in all Rock Mineral Wool plants, with a pilot waste management initiative to reduce waste to landfill to less than 0.5%

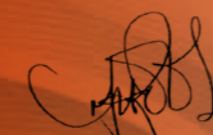
Progress key: ● = Complete ● = 75% complete ● = 50% complete ● = 25% complete

Before you go...

Whilst last year's Sustainability Report was a first snapshot of where we stood on sustainability, I hope that you will agree that, having read our new Report, we have made strong progress towards setting out a more comprehensive framework for sustainability at Knauf Insulation and commitments that will be necessary to achieve success. Targets such as zero waste to landfill or zero harm have been set for example; whilst we realise that these may seem overly ambitious today, they provide us and our stakeholders with a clear direction in which we intend to move our company.

It should also be evident from this year's Report that we still have much to do to get our 'house in order'. Getting better data on how we are performing, and benchmarking ourselves internally are therefore strong elements of our plans for 2012. Nonetheless, as we continue to improve our own performance, we intend to redouble our efforts to advocate for a better and more energy efficient built environment, given the huge economic and environmental benefits that this can deliver.

Having started on the path towards greater sustainability as a company, we can no longer turn back. Therefore as we move into 2012, I will need the support of all our people to ensure we deliver on our commitments and establish new and challenging ones going forward.



Tony Robson
Group CEO, Knauf Insulation

Getting back to us...

Please do get in touch - we want to hear your comments, praise, gripes and news!
Email the team at sustainability@knaufinsulation.com.

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