

REWE Group

Corporate Carbon Footprint





Alain Caparros, REWE Group CEO,
with son Sacha (Val d'Isère, 3,800 metres)

“For us, a sustainable lifestyle means becoming active on behalf of the environment.

This is why we are reducing our CO₂ emissions by 30 per cent by 2015.”

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Foreword

Dear ladies and gentlemen,

In times of economic downturn, supposedly 'soft' issues often tend to be neglected. Environmental and climate protection is one such issue. But the fact remains that global climate change requires swift action. We at the REWE Group hold true to our environmental responsibilities, regardless of economic developments; and we are convinced that – especially in today's changing world – sustainable business practices are sound business practices, because they pave the way for long-term success.

The REWE Group is one of the leading trade and tourism companies in Europe. We are well aware that we have a major responsibility to the environment, and we have met this responsibility by making climate and environmental protection a core component of our corporate philosophy. Our first ever Corporate Carbon Footprint is a significant step in this direction. We have teamed up with the Öko-Institut (Institute for Applied Ecology) in Germany and the Austrian Federal Agency for Environmental Protection and Control to systematically determine the current status of our green-

house gas emissions. The amount of detail covered by our data is unprecedented in the industry. But we are not just limiting ourselves to situational evaluations; we have also set ourselves an ambitious target: by 2015 we will implement a 30 per cent reduction in our greenhouse gas emissions per square metre of sales floor space.

We have already mapped out the main steps towards this goal. In the following, you will find information about the measures we have already initiated as well as the associated savings potential. In future, we will be publishing an updated Corporate Carbon Footprint every two years, so you will be able to follow our progress. The REWE Group's first Sustainability Report, scheduled for publication this summer, will provide a further, more comprehensive insight into our commitment to sustainable business. We will also be publishing the Sustainability Report on a regular basis from now on.



Alan Caparros

REWE Group CEO



Manfred Esser

REWE Group Management Board
Strategic Purchasing, Quality Assurance,
Production, Coopernic

REWE Group profile



With a turnover of 50 billion euros in 2008, activities in 16 countries, 320,000 employees and about 15,000 stores, the REWE Group is one of the leading trade and tourism companies in Europe. In its core business, i.e. food retail trading, the spectrum ranges from supermarkets (REWE) to discount stores (PENNY) through to self-service hypermarkets (toom). In addition, the REWE Group owns DIY and electronics stores (toom BauMarkt, ProMarkt) and wholesale stores (REWE-Großverbraucher-Service, FEGRO/SELGROS).

Travel and tourism is the second core business of the Cologne-based Group. Its travel agencies (ATLASREISEN, DER-Reisebüro, DERPART) and tour operators (ITS, JAHN REISEN, TJAEREBORG, DERTOUR, MEIER'S WELTREISEN, ADAC REISEN) make a key contribution to the REWE Group's overall development with a turnover well in excess of 4.5 billion euros.

The REWE Group was founded in 1927 as an "auditing association of western purchasing cooperatives". This legal form also entails a mandate to promote the interests of REWE members and hence to ensure long-term profitability and sustainability.

Sustainability within the REWE Group

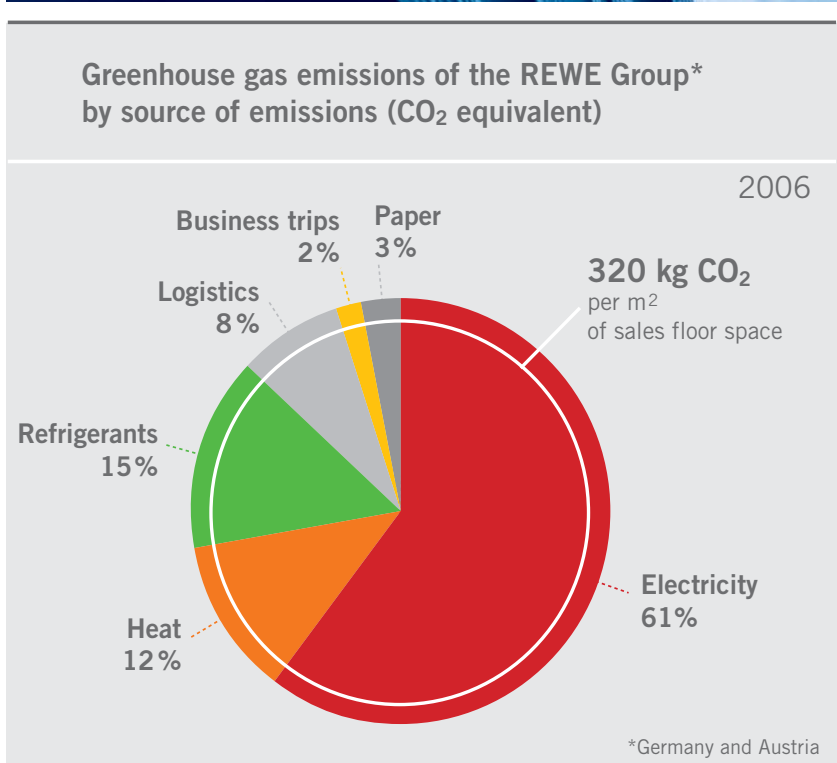
Responsible trading has been part of the REWE Group's corporate culture from the very beginning. At the REWE Group, sustainability is a long-standing tradition, not a recent trend. While pursuing clear economic goals, the REWE Group is also highly aware of its responsibilities to the environment, to its employees and to society at large. The REWE Group is convinced that, in the long run, it can only continue to grow by protecting natural resources, being fair and trustworthy with its employees and partners, and making a real contribution to society. In pursuance of these essential principles, in 2008 the REWE Group established a Group-wide sustainability management system and anchored sustainability in its new mission statement. A Sustainability Strategy Committee, chaired by Management Board Member Manfred Esser, has overall responsibility for implementing the system and supervising compliance with the commitment to sustainability throughout the REWE Group. Furthermore, in order to convert the strategy into actual projects, four task forces were established: 'Green products', 'Energy, climate and the environment', 'Employees' and 'Social involvement'. Climate protection therefore has an important place in the REWE Group's corporate strategy and organisation at all levels.

The Corporate Carbon Footprint of the REWE Group

Independent experts have gathered detailed information on the REWE Group's greenhouse gas emissions

In 2006, the REWE Group's greenhouse gas emissions amounted to 2.5 million tonnes of CO₂ equivalent, or about 320 kilograms per square metre of sales floor space. The lion's share of these emissions corresponded to energy consumption, followed by refrigerants, heat, logistics, paper and business travel. A summary of the key results of the REWE Group's first Corporate Carbon Footprint – produced with the help of independent experts from the Öko-Institut (Institute for Applied Ecology) in Germany and the Austrian Federal Agency for Environmental Protection and Con-

trol – is given in the chart below. The analysis also shows that the Group has significantly improved its carbon footprint since 2006 – a success largely due to the Group's early commitment to increased energy efficiency and conversion to certified green electricity. The results also indicate the areas in which further savings are possible as well as the extent and initial costs of these potential savings. This provides a solid basis for setting specific targets and developing appropriate measures.



The REWE Group's climate protection target:
30 per cent fewer CO₂ emissions by 2015

Corporate Carbon Footprint: methodology – scope of emissions – results

Adherence to international standards makes the REWE Group's carbon footprint transparent and comparable to other data

In order to ensure that the public can objectively evaluate and compare the REWE Group's Corporate Carbon Footprint, scientists at the German Öko-Institut (Institute for Applied Ecology, see box) and the Austrian Federal Agency for Environmental Protection and Control have adhered to international guidelines when carrying out and reporting on their study. The latter's methodology is based on the Greenhouse Gas Protocol (GHG Protocol), the most common standard for collecting data about a company's greenhouse gas emissions. The REWE Group's Corporate Carbon Footprint also meets the formal criteria of ISO 14064-1. Both of these standards help companies to present their emissions data in an internationally harmonised form and therefore also make it easier for industries to quantify their contribution to the attainment of climate policy targets.

The GHG Protocol categorises emissions into three broad 'scopes', all of which were taken into consideration by the REWE Group:

1. Emissions produced directly by the company, e.g. to generate heat using gas- or oil-fuelled systems
2. Indirect emissions arising e.g. from the use of electricity or heat supplied by a third party
3. Emissions indirectly linked to the business activity – e.g. emissions generated as a result of business trips or paper consumption

What is the role of the Öko-Institut?

The Öko-Institut (Institute for Applied Ecology) is a non-profit association with offices in Freiburg, Darmstadt and Berlin. Providing independent research and advice on environmental issues, it is one of the leading European organisations in its field. The scientists at the institute carry out carbon footprint assessments and ecological efficiency analyses on behalf of public authorities, NGOs and companies. Together with companies such as the REWE Group, they develop sustainable products, technologies and methodologies, such as the Product Carbon Footprint (see page 13).

The analysis conducted by the REWE Group covered the emissions of all gases potentially hazardous to the climate, including carbon dioxide (CO₂), methane and fluorocarbon refrigerants. Experts used CO₂ equivalents (see box) to establish and compare the magnitudes of emissions.

What is a CO₂ equivalent?

To determine just how much the emissions from various gases contribute to the greenhouse effect, CO₂ equivalents are used internationally. Used as the reference gas against which other greenhouse gases are measured, carbon dioxide bears the value 1. For example: Over a period of 100 years, a tonne of R404A refrigerant has about 3,922 times more impact on the climate than the same quantity of carbon dioxide. The CO₂ equivalent of one tonne of R404A is therefore 3,922 tonnes. (Source: IPCC Report 2007)

What the Corporate Carbon Footprint shows – and what it does not

The REWE Group's carbon footprint data initially refer only to Germany and Austria. The data therefore cover about 85 per cent of the REWE Group's entire store business. Other countries will be taken into account at a later stage.

The so-called control-based approach forms the basis for determining the size of the carbon footprint. It comprises every part of the supply chain which can be directly inspected by the Group. In real terms, this means that the production of a commodity and its transport by suppliers, as well as its use and recycling by the customer, are not taken into account. The emissions data cover the entire process chain, from the main warehouses to the REWE Group stores as well as to travel agencies and administrative sites. An exception to this control-based approach are the independent stores that are members of REWE in Germany. Despite their independent status, they are fully included in the carbon footprint assessment. In this respect, the REWE Group's data-capture methodology exceeds the requirements of the GHG Protocol.

Data capture in detail

The REWE Group’s carbon footprint assessment stands out from other similar investigations on account of its precise and transparent data-capture system. Below is some detailed information on how emissions were calculated in different areas:

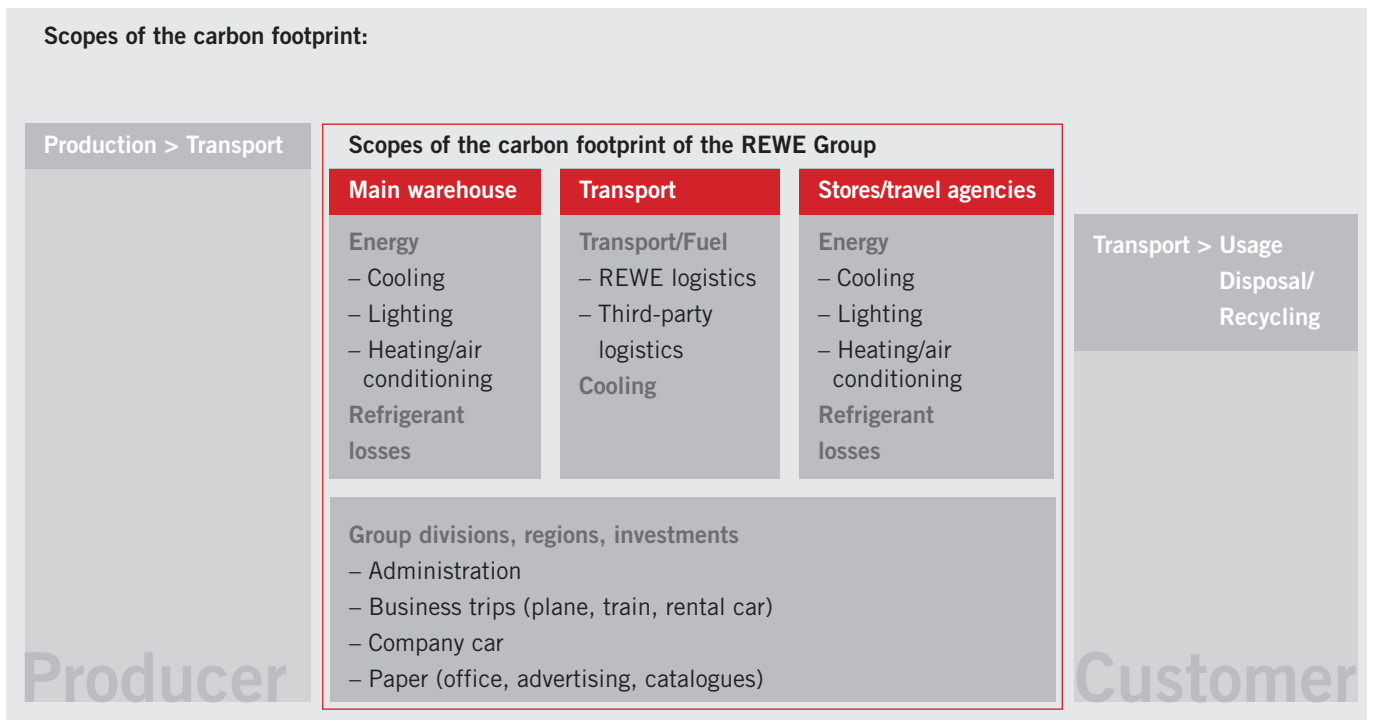
1. Energy

This area covers the entire electricity and heat consumption of the REWE Group. A key question that arises when conducting a carbon footprint assessment concerns the inclusion of green electricity: to what extent should CO₂ emissions be added in this case? Even if a company uses only green electricity, this does not automatically reduce the level of CO₂ emissions. On the other hand, the construction and expansion of new, renewable-energy production plants makes a positive contribution towards reducing greenhouse gas emissions. For this reason, the REWE Group sought assurances, for the electricity sold via EHA Hamburg, that 25 per cent of the plants concerned would be less than three years old. The supply contracts also included an ‘expansion obligation’ (see

page 16). When calculating the carbon footprint, the company chose to follow the recommendations of independent institutes – such as the Öko-Institut and the German Institute for Energy and Environmental Research (ifeu) – and thus adopted a conservative approach. Only 25 per cent of the green electricity from the new plants was included in the calculation of emissions in Germany. The remaining 75 per cent was included on the basis of the ‘German electricity mix’, which is estimated to generate around 640 grams of CO₂ equivalent per kilowatt hour (including the upstream chain).

A similar approach was taken for Austria. Here a reduced CO₂ value was included in the calculation only for the share of green electricity produced using solar, wind or biomass plants. For the remainder, the Austrian value of 264 grams of CO₂ equivalent per kilowatt hour was used. Another important point is the fact that the renewable energy produced by the REWE Group itself was not deducted from the Group’s overall value. This concerns, for example, electricity from solar systems installed on warehouse roofs (see page 17).

Scopes of the carbon footprint:



2. Logistics

All transportation carried out on behalf of the REWE Group was included – irrespective of whether it was carried out by the company's truck fleet or by third-party haulers.

3. Refrigerants

Refrigerant leakage cannot be completely avoided, even when exercising the utmost care. The refrigerants used by the REWE Group are therefore taken into account with their respective specific global warming potentials.

4. Paper

This area covers business and office paper, e.g. for copiers, printers and fax machines, as well as advertising materials such as leaflets and travel brochures.

5. Business travel

All business travel by REWE Group employees, whether by train, rental car or plane, including the private mileage clocked up by company cars, is taken into account fully. The calculation of the amount of greenhouse potential attributable to air travel also includes the fact that gases that are harmful to the environment pose a greater threat to the atmosphere the higher they are emitted. In the case of long-haul flights, the direct CO₂ emissions are

therefore multiplied by three. In this regard, too, the REWE Group exceeds the requirements of the GHG Protocol.

Accuracy improves quality assurance

The REWE Group provided the Öko-Institut and the Austrian Federal Agency for Environmental Protection and Control with detailed and comprehensive data broken down by category (electricity, heat, logistics, business travel and company cars) rather than in the form of a summary, as was customary in the past. This meant that there were several hundred thousand data records to be analysed, but it was worth the effort as such an approach provided a more detailed insight into the areas where savings could be made. It also allowed experts to check the completeness and quality of the data in more depth.

The REWE Group's first Corporate Carbon Footprint is therefore much more than a status report. Right from the outset it was designed to enable future climate protection data to be gathered and incorporated more easily into the monitoring system. The report illustrates the environmental and economic efficiency of the measures, thus helping to create a firm foundation for future investment decisions.



The REWE Group's climate target: 30 per cent fewer CO₂ emissions by 2015



The REWE Group intends to achieve a 30 per cent reduction in its specific greenhouse gas emissions by 2015 (in relation to 2006). The output will therefore drop from 320 kilograms to 224 kilograms of CO₂ equivalent per square metre of sales floor space.

The REWE Group has not just started working towards this goal, but has been paving the way for improved climate protection and lower energy costs for a number of years. Thus, for example, emission savings of more than 20 per cent were achieved between 2006 and 2008. The Group's specific consumption was already less than 250 kilograms of CO₂ equivalent per square metre of sales floor space in 2008. This is a very low value in comparison to the average value of domestic and international competitors. The total level of emissions also dropped by more than 5 per cent

between 2006 and 2008. These major savings have been achieved in spite of longer opening hours (since 2007) and a significant increase in sales floor space in recent years. The reasons for this success include not only numerous technical changes to increase energy efficiency but also the switch to certified green power.

Given the large number of efficiency-enhancement measures that have already been implemented, from now on significant investments are required to achieve further savings. However, the REWE Group is determined to pursue its goal of protecting the environment. All of the Group's business divisions are currently working on a range of different proposals to further reduce greenhouse gas emissions efficiently, both in environmental and economic terms.

Climate protection at the REWE Group – areas of focus and projects

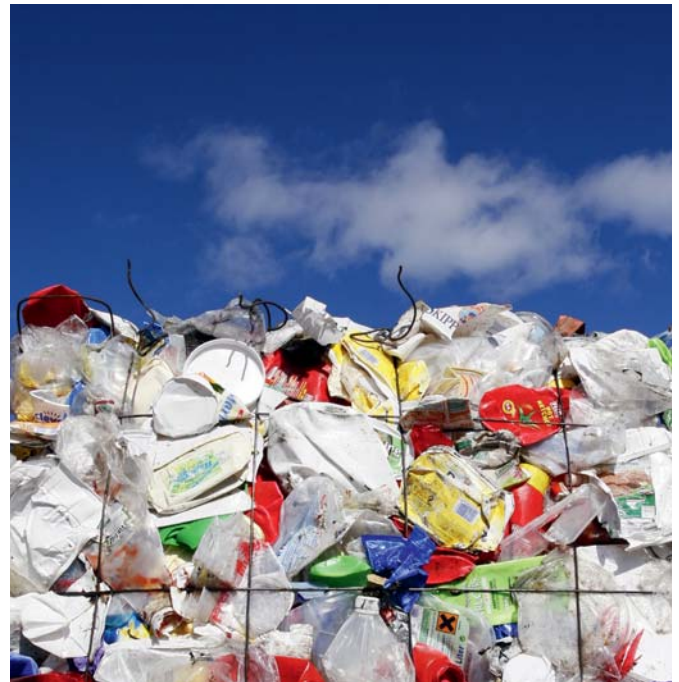
By deciding to reduce its greenhouse gas emissions per square metre of sales floor space by 30 per cent in comparison to the 2006 level, the REWE Group has set itself an ambitious goal which requires a sustained effort in several areas. The switch to 100 per cent green electricity in 2008 was a major step in the right direction; and a range of other measures will also help to continually improve the company's carbon footprint.

Focus on key areas

The REWE Group is primarily focusing its commitment to protecting the climate on areas which promise major savings. With more than half of the company's CO₂ emissions coming from electricity consumption, increasing energy efficiency is the most important area that needs to be tackled other than obtaining electricity from renewable sources. The core of the energy efficiency management system that the REWE Group has implemented throughout the Group (see page 14) involves modern technologies coupled with processes that save every possible kilowatt-hour of lighting, heating or cooling energy. Logistics processes have also continually been optimised to lower fuel consumption, thereby reducing greenhouse gas emissions (see page 18).

Mobility as a challenge

It is not only freight transport that is potentially hazardous to the climate, but passenger transport as well. That is why the REWE Group also encourages its employees to increase their use of local public transport by providing them with JobTickets. Video conferencing is also making it possible to dispense with more and more business trips. Moreover, as a travel and tourism concern, the REWE Group acts as a multiplier. FCmTravel Solutions, for example, gives its customers information on various options that are available to organise business trips in a more climate-friendly way. The challenge is to continue making mobility possible while taking both the environment and cost-effectiveness into consideration. In 2008, FCmTravel Solutions also established a comprehensive environmental management system for which it received DIN EN ISO 14001 certification. The inspectors gave FCmTravel Solutions a particularly positive evaluation for the steps the company had taken to educate its employees about environmental issues, such as climate change, energy efficiency and CO₂ emissions.



Using resources wisely

There are both ecological and economic reasons why reducing and recycling waste makes sense. The REWE Group recycles its organic waste in composting and biogas plants. The fermentation process produces biogas that can be turned into electricity and heat. In Germany, enough electricity is obtained from organic waste alone to supply more than 8,500 three-person households with power. If conventional methods were used to produce this amount of energy, approximately 20,000 tonnes more CO₂ would be created. Paper, cardboard and cardboard packaging materials also account for a large amount of waste. These materials are also completely recycled by the REWE Group. Since April 2009, the Group has exclusively been using recycled paper for its copiers and printers. This change is now also being implemented in Austria. The company is increasingly using recycled paper for advertising material as well. Internal events like 'Sustainability Day' in 2008 and the energy awareness weeks organised in cooperation with the energy agency NRW help raise awareness among employees about the importance of using resources sparingly.



The Product Carbon Footprint pilot project

In order to research the climate-friendliness of individual products, the REWE Group is involved in the pilot project Product Carbon Footprint (PCF). Supporting organisations include the WWF, the Öko-Institut and the Potsdam Institute for Climate Impact Research. The goal of the project is to determine the CO₂ emissions of selected products. The REWE Group first had the carbon dioxide balance calculated for strawberries from the Best Alliance contract farms in Spain. The result: a 500-gram plastic punnet of strawberries

generates the same amount of CO₂ emissions as a car does when driven about three kilometres, i.e. approximately 442 grams. Beyond that, the project produced some other valuable findings: by investigating the individual steps of the process in detail, REWE experts were able to identify ways of further reducing CO₂ emissions. The results were also used to propose recommendations for a standardised international method of calculation which makes it possible to compare the carbon footprints of different products.

Focus on energy efficiency

Managing electricity and gas consumption systematically

Conserving energy and reducing emissions that are hazardous to the environment is not only important in terms of protecting the climate. The costs for cooling, lighting and heating the stores are also a factor that influences how competitive a retail company is. In 2008, the REWE Group was the first company of its kind in Germany to launch a Group-wide energy efficiency management programme.

Energy use in all stores is first monitored in detail in order to identify specific ways to conserve electricity and gas. The Hamburg-based Energie-Handels-Gesellschaft (EHA) assists with these energy checks in Germany. It supplies end-use energy, such as light and refrigeration, and measures consumption in separate circuits. In Austria, the EHA supplies electricity and gas as well as the necessary data on consumption. Furthermore, a monitoring platform (FRIGODATA ONLINE) provides short-term calculations of temperature, running time and energy data at the outlets so that energy use is transparent and can be compared. REWE Group energy managers use these data as a basis for checking actual numbers against target consumption. If the energy needs in a store are too high in comparison to similar locations with similar needs, they begin looking for the problems. Is the temperature for an appliance set inappropriately? Are the shelves stocked in a disadvantageous way? The employees' technical knowledge is also an important factor for the results of the performance analysis, which is why employees are trained to be able to operate appliances efficiently.



'Making optimal use of technological potential'

Peter Breuss, Technical Director of REWE International AG

"Conserving energy, lowering costs and reducing greenhouse gases – these three aims are the main focus of our commitment to protecting the environment. In practice, this involves using green electricity as well as selecting energy-efficient lighting and refrigeration units for the stores. However, no type of technology is really effective if it is not used in an optimal way. The employees therefore play a key part and are familiarised with all changes as soon as possible. Energy conservation training and information signs, for example, have proven to be very useful at our stores in Austria. All these measures work in synergy as part of a sustainability strategy that is strongly integrated within the company. Without a doubt, environmental and climate protection is an issue of utmost importance."

The environment and cost-effectiveness

The REWE Group experts use the collected data to determine whether the company would actually benefit from investing in new energy-saving appliances. Thus, for instance, installing doors on refrigerated shelves reduces electricity consumption by 20 to 40 per cent, but involves costs of up to 50,000 euros per store. In this connection, research is also under way to establish whether customers change their buying behaviour when, e.g., milk and meat are displayed behind glass doors.

Identifying key issues – achieving real energy savings

Optimised processes, efficient appliances, more climate-friendly refrigerants – the REWE Group has introduced a whole array of measures to achieve a more balanced energy plan. Some examples include:

Covering refrigeration units: Installing glass doors on refrigerated shelves saves 20 to 40 per cent of electricity. This equals up to 60,000 kilowatt-hours or 29 tonnes of CO₂ per year per store. All self-service fresh meat shelves in Germany will therefore have glass doors installed by the end of 2009.



Regulating temperature: New compound refrigeration systems lower annual energy requirements by around 25,000 kilowatt-hours or 12 tonnes of CO₂ equivalent per store. Additionally, since the beginning of 2007, only plug-in chest freezers with speed-controlled compressors have been purchased. Improved refrigeration systems and refrigeration units are already saving around 35 per cent of cooling energy in more than 300 Austrian stores.

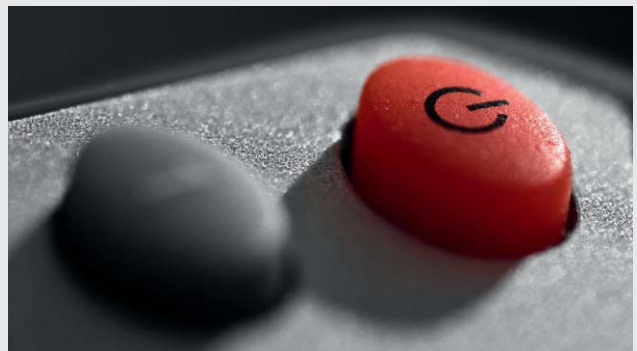
Improving basic equipment: Night blinds for refrigerated shelves and energy-optimised ceiling lighting are standard in all stores.

Using alternative refrigerants: Despite higher investment costs, the REWE Group in Germany has chosen to use the more environmentally friendly refrigerant R134a. Its greenhouse gas potential is only a third of that of R404A, which was used previously. The environmentally friendly chemicals propane and butane are used in 10,000 freezers. CO₂ is being tested as a refrigerant in some ten REWE Group supermarkets in order to resolve the remaining technical issues.

Innovative heating: A total of 465 stores are already heating with waste heat from refrigeration units, saving each store up to 80,000 kilowatt-hours of gas or up to 20 tonnes of CO₂ equivalent. Over 124 stores are already operating without the use of any fossil fuels.

Converted cash register systems: The REWE Group uses new systems that require around 50 per cent less energy. They perform only the most essential tasks for the check-out process, saving around 2.8 million kilowatt-hours of energy or 1,340 tonnes of CO₂ equivalent.

Raising awareness among employees: In November 2008, the REWE Group launched the energy awareness weeks ('E-fit') at its headquarters in Cologne. The resulting improvements in the performance of daily office tasks reduced energy use by over 4 per cent. Similar campaigns are planned for administrative sites in different regions.



Focus on green electricity

The switch to 100 per cent green electricity makes the REWE Group the largest user of renewable energies in Germany

To protect the climate, trading companies are increasingly using CO₂-neutral energy sources like water, wind and sun. The REWE Group is one of the pioneers in this area as the entire company switched over to using green electricity in 2008. With annual energy requirements (in Germany) of around two terawatt-hours – equivalent to more than the requirements of all private households in Cologne – the REWE Group is the largest user of renewable energy in the country. The switch to ‘greener’ energy sources has also been completed at REWE International AG. Since 2008, all BILLA, MERKUR, PENNY and BIPA stores have exclusively been using renewable electricity supplied by hydroelectric, wind, solar or biomass power plants.

Strict criteria

The REWE Group has high quality standards for green electricity. At least 25 per cent of the hydroelectric power plants supplying the Group’s stores and outlets in Germany must be under three years old. This ensures that new renewable generation plants will continue to be built. The ‘expansion obligation’ established for the EHA Hamburg’s electricity product, which enjoys TÜV Süd EE01 certification, is also intended to promote the construction of new plants. In order to ensure that the REWE Group’s energy needs are covered exclusively by renewable sources of energy, the German and Austrian suppliers comply with the requirements of the EU-recognised Renewable Energy Certificate System or the TÜV EE+ label. Unlike other, less reliable green electricity suppliers on the market, they document precisely how much electricity has been bought from which plants during which periods of time.

Solar electricity from warehouse roofs

The REWE Group not only buys green electricity, it also produces it itself: solar panels have initially been installed on warehouse roofs at four locations that are particularly suitable in terms of climate. Since then, the warehouses have been generating enough energy to cover up to one-sixth of their own requirements. The investment will have paid itself off in ten to twelve years.



Performance of the photovoltaic systems on warehouse roofs belonging to the REWE Group:

Location	Plant area	Average amount of electricity generated per year	Equivalent energy consumption of approximately ...	Average reduction in CO ₂
Eitting	7,392 m ²	1,162,562 kWh	332 households	651 tonnes
Buttenheim	11,814 m ²	712,500 kWh	204 households	399 tonnes
Rüsseina	9,683 m ²	1,285,680 kWh	367 households	720 tonnes
Hildesheim	7,511 m ²	421,191 kWh	120 households	236 tonnes

The Group plans to increase solar capacity by 50,000 m² by the end of 2010



Focus on logistics

With optimised processes, CO₂ emissions can be reduced despite increasing logistics requirements

Fresh strawberries must reach supermarket shelves within 36 hours of being harvested – even when they come from as far away as Spain. Currently, this type of delicate product can only be transported safely and punctually by road. The REWE Group is continuing to expand, which means that its overall transport volumes are also increasing. However, in order to minimise CO₂ emissions in logistics, the company is committed to further improving efficiency with measures such as:

- **Expanding the network of warehouses:** A larger number of warehouses means shorter routes to stores. There are plans to add about ten new warehouse locations in Germany by 2011. The goal is to reduce both transport costs and CO₂ emissions.
- **Planning optimal routes:** Data processing systems are used to identify the shortest routes and avoid empty journeys. In 2008, a decision was also made to separate the flows of products going to full-range stores from those going to discount stores. This makes it possible to increase the efficiency of journeys and warehouse use and further increase the utilised capacity of individual journeys.



- **Making better use of cargo space:** The lorries are already filled to 90 per cent of capacity. In order to make better use of the available cargo space, the stores are increasingly being supplied with pallets instead of rolling containers.
- **Using efficient technology:** The fleet is continually being improved with the addition of low-emission lorries that have the latest engine technology, fully automatic transmissions, low-rolling resistance tyres and improved aerodynamics.
- **Limiting speed:** Limiting maximum speed from 87 to 82 km/h conserves fuel by up to 5 per cent per vehicle.



- **Filling up with alternative fuels:** Around 60 per cent of the company's own lorries use alternative fuels. They only produce half the soot emissions of conventional diesel fuels.
- **Shifting from the road to the railway:** Shifting the transport of goods going from the main warehouse in Wiener Neudorf to Salzburg, Tyrol and Vorarlberg from the road (with lorries) to the railway saves around 2.5 million kilometres of driving, 860,000 litres of fuel and about 3,000 tonnes of CO₂ emissions each year.
- **Training drivers:** Each year the employees are trained to be more aware and think ahead when they drive and to use the modern technologies on board in an optimal way. This makes it possible for each lorry driver to reduce fuel consumption by an average of 2 to 5 per cent, which also reduces CO₂ emissions. A passenger car can even reduce consumption by up to 20 per cent. (For an example of progress in this area, see box below.)



“One litre less per 100 kilometres”

Mario Kracht, driver for the Commercial Wholesale Customer Service in Schweitenkirchen:

“Our fleet manager organised eco-training for us where we learned how to drive in an economical way. I was surprised how much I still learned after 21 years ‘on the road’. I am currently using one litre less per 100 kilometres than I did on average in 2007. That saves 500 euros and around 1.5 tonnes of CO₂ per lorry per year.”

Climate protection measures at a glance

Measures	Environmental benefits/efficiency gains
<p>Lowering emissions that impact the climate</p> <ul style="list-style-type: none"> Using alternative refrigerants with lower greenhouse gas potential: <ul style="list-style-type: none"> Using more climate-friendly refrigerants like R134a whenever possible Using climate-friendly propane and butane in about 10,000 freezers Testing the use of CO₂ as a refrigerant in about 10 stores Using other technical and organisational measures to reduce the loss of refrigerants 	<ul style="list-style-type: none"> Propane and butane are less hazardous to the climate than other refrigerants and also have no ozone depletion potential CO₂, used as a refrigerant, has no ozone depletion potential and, in addition, has a much smaller greenhouse impact <p>Challenge: Despite the positive environmental effect of such measures, a strategy aimed at increasing energy efficiency is generally more effective in terms of climate protection. There are also some technical questions to answer, such as what safety issues need to be considered for pressures above 100 bar. Competent specialists must also be available throughout the country to install, operate and perform maintenance on these systems.</p>
Shifting freight from road to rail (Austria)	Reducing travel on roads between the central warehouse in Wiener Neudorf and the outlets in Vorarlberg, Tyrol and Salzburg by around 2.5 million kilometres. This corresponds to 860,000 litres of fuel and 3,000 tonnes of CO ₂ .
Creating product-related climate impact assessments. Conveying CO ₂ emissions for strawberries from Spain as part of the pilot project Product Carbon Footprint (PCF)	<ul style="list-style-type: none"> Identifying optimisation potential in the process chain. Example: Switching from PET lids to PET foil Labelling of CO₂ emissions is NOT effective
Promoting the use of renewable energies	Promoting the expansion of renewable energies
<p>Using up to 100% green electricity:</p> <ul style="list-style-type: none"> In Germany, this corresponds to the TÜV Süd EE01 label In Austria, green electricity from Austrian hydroelectric power plants complies with the requirements of the TÜV Süd EE+ label 	<ul style="list-style-type: none"> Green electricity for German stores <ul style="list-style-type: none"> 25% of the power plants must be under 3 years old 'Expansion obligation' Green electricity for locations in Austria <ul style="list-style-type: none"> Specified Austrian hydroelectric power plants Precise time slicing
Continuing to expand the use of solar panels in warehouse locations	<p>Status: 40,000 m²</p> <p>Planned: Increase of 50,000 m² by the end of 2010</p>
Recycling food waste in biogas plants to generate electricity and heat with low CO ₂ emissions	The electricity generated in Germany would be enough to supply more than 8,500 3-person households, reducing CO ₂ emissions by almost 20,000 tonnes in comparison to conventional power sources.
Conserving resources	This saves 1,575 trees and reduces CO ₂ emissions by a yearly amount equivalent to that generated by 90 passenger cars or the heating needs of more than 700 single-family houses.
Switching over to recycling and FSC paper for all of the REWE Group's office and business paper needs in Germany (printers, copiers and fax machines) as well as for the advertising materials published by the Group's commerce and tourism businesses	

Measures

Increasing energy efficiency

Making refrigeration units more energy efficient

- With glass doors:
 - For all self-service fresh meat shelves in Germany by the end of 2009
 - Shelves for dairy products in selected test stores
 - Widespread testing throughout Austria
- With night blinds: standard in Germany and Austria
- With dual air curtains, 3-pane glass on chest freezers, enthalpy control for defrosters, improved control technology, larger vaporisers and piping

- Use of more efficient compound refrigeration systems
- Use of plug-in freezers with speed-controlled compressors

Compound refrigeration systems with integrated heat-pump function:

Waste heat from refrigeration units is already being used for heating in around 465 REWE Group stores.

- Energy-optimised ceiling and decorative lighting
- Use of daylight
- LED lighting in freezers

In new and converted stores, floor heating at 120 watts in the cash register area instead of convector heating at 1,000 watts

Switch to new cash register systems which only have the functions that are most essential to the cash register process

New and reconstructed stores with higher energy efficiency

Training for lorry and company car drivers (in fuel-saving techniques)

Speed limiters to reduce the maximum speed of lorries from 87 km/h to 82 km/h

Continually improving fleet of lorries and passenger cars so as to reduce exhaust emissions thanks to the latest engine technology, fully automatic transmissions, low-rolling resistance tyres and improved aerodynamics

Promoting environmentally conscious behaviour in the workplace through regular information and energy awareness weeks

Environmental benefits/Efficiency gains

- Glass doors reduce energy use in refrigeration units by 20 % to 40 % or up to 60,000 kWh (resulting in 29 fewer tonnes of CO₂) per store per year
- Night blinds, dual air curtains, etc. reduce energy consumption by around 35 % in each of around 300 BILLA outlets
- Also implemented at MERKUR and PENNY

Around 25,000 kWh of electricity is saved, or 12 tonnes of CO₂ per store per year (electricity savings of about 20 % per appliance)

- Savings of up to 80,000 kWh or 20 tonnes of CO₂ per store per year
- Around 124 stores are already operating without the use of fossil fuels

Challenge: Heating and refrigeration installations must be serviced by technicians with a high level of expert knowledge

Savings (between 6,500 and 74,000 kWh per year) strongly depend on the size of the store and how well it is equipped.
Challenge: LED technology for this application is currently still in development

Savings of about 4,000 kWh or 2 tonnes of CO₂ per cash register station

Savings of almost 50 % per register, equivalent to around 2.83 million kWh of electricity or 1,340 tonnes of CO₂ per year

Increased specific energy efficiency, depending on the standards of the equipment available

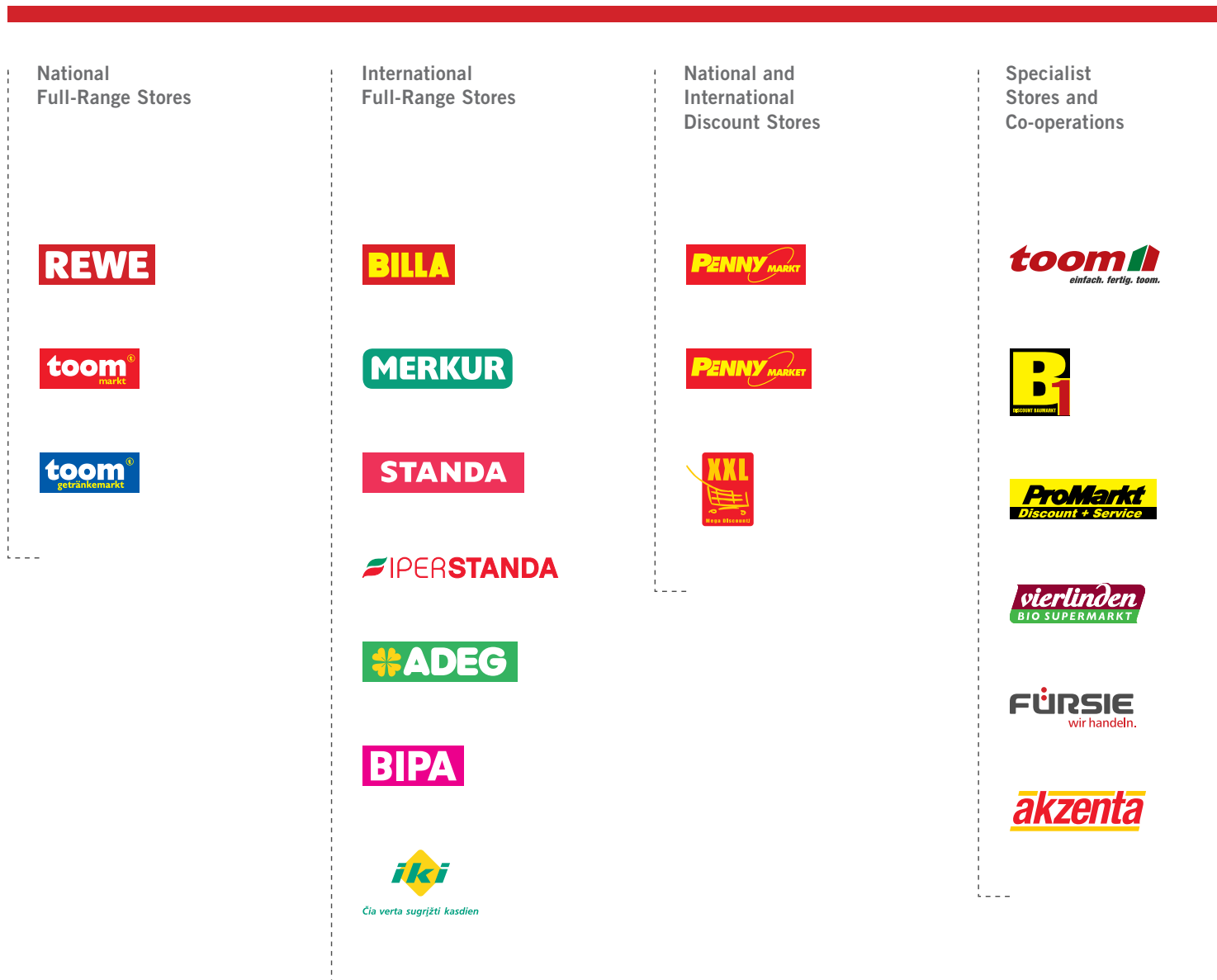
Fuel savings of 2 % to 5 % are possible.
Challenge: Regular refresher courses are required

Fuel savings of 1.5 % to 5 % possible, depending on the technologies used

Fuel savings of 2 % to 5 % possible, depending on the technologies used

Thanks to the energy awareness weeks 'E-fit' at the administrative sites in Cologne, electricity consumption was reduced by 4 % (in some cases, up to 15 %). This corresponds to around 150 MWh per year. Over the longer term, a 1 % reduction in electricity consumption seems possible.

Structure of the REWE Group – 2008



Business-to-Business



Others



Travel and Tourism





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