

Environmental initiatives throughout the product life cycle



1

Manufacturing

Daikin's efforts to reduce its environmental impact start as early as the manufacturing stage, comprising of:

Research & development

Procurement

Assembly

2

Sales & supply

While expanding its sales and supply activities, Daikin is working hard to raise awareness among its affiliates and their customers to help protect and conserve the environment:

Sales activities

Logistics



3

Use

4

End of life

Environmental efforts don't stop once Daikin Europe N.V. has sold its products. Throughout its entire product range, Daikin Europe N.V. shows the same pioneering concern for reducing the global warming impact caused by energy use and potential refrigerant emissions:

Residential

Commercial

Industrial

Proving its concern for the environment, Daikin Europe N.V. is among the first manufacturers in the industry to set up voluntary take-back schemes across Europe:

Recycling schemes

1 Manufacturing

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➤ Research & development

Daikin's environmental efforts start with R&D. These include the optimal selection of components with regard to energy efficiency, specific use of materials, their longevity and recyclability. Testing whether the design specifications correspond to the actual performance of the finished products is also essential. Thorough quality checks are carried out in laboratory conditions as well as in real life conditions.

Ostend has become the heating R&D centre par excellence for Daikin. It is also the location of several Daikin Altherma test sites, including the 'Daikin Apartment' and the 'Daikin Energy Saving House'.

In addition, the integration of German heating systems producer and distributor Rotex strengthened Daikin Europe N.V.'s presence in the heating market. Rotex offerings include hybrid and solar technology and under floor heating systems, thus complementing Daikin's range and making possible a total Daikin energy efficient heating package.



➤ The Daikin Apartment in Ostend, Belgium

Daikin ultra-efficient heat pump convector

Daikin's heat pump convector addresses a common heating efficiency problem. In well-insulated new residences, a combination of under floor heating and low temperature radiators is one of the most efficient heating solutions on the market. This solution, however, is not perfect. The low leaving water temperatures important for efficiency are adequate for under floor heating, but the room radiators (e.g. in the bedroom) need higher temperatures (45°C). Because the Daikin heat pump convector only requires a low water feed temperature of 35 °C, impressive energy savings of 25 – 40% can be obtained. This makes the Daikin heat pump convector ideal for combination with under floor heating, compared to low temperature radiators.





“Our long-standing goal is to integrate renewable energy based solutions in our product range. Oil-fired condensing boilers able to operate on bio-oil were launched already back in 2007 and our GasSolarUnit integrates solar thermal energy into gas condensing boiler technology. In 2009, we started the development of our compact HeatPumpSolarUnit that combines heat pump technology with direct solar thermal input. This new and unique product is launched in the summer of 2010 and will maximize the use of renewable energy for heating and hot water production.”

Franz Grammling, General Manager of Rotex GmbH

Daikin Altherma for apartments and collective housing: world-first low-energy heating and cooling solution for newly-built apartments and collective housing

In 2009, Daikin Europe N.V. equipped two demo apartments in a newly built 8-floor building complex with its latest heat pump series for apartments and collective housing, a world-first. The demo apartments, located in the heart of Ostend, have one outdoor unit on the roof top, and one indoor unit per apartment consisting of a hydrobox for heating and cooling and a domestic hot water tank for hot water. Heating is provided via heat pump convectors and radiators.



The striking results³ of this project include a 32% reduction in primary energy use and 59% less CO₂ emissions compared to a gas combi boiler. There are two main reasons behind such outstanding environmental results:

- The air to water heat pump system extracts renewable energy from the ambient air
- Its heat recovery mode recovers heat from cooling rather than blowing it into the ambient air. The recovered energy is then used for heating or domestic hot water

³These are the results from calculations based on specific parameters, such as a Belgian climate, a primary energy factor of 2.3 and CO₂ emission factors of 0.185 kg CO₂/ kWh gas and 0.246 kg CO₂/ kWh electricity.

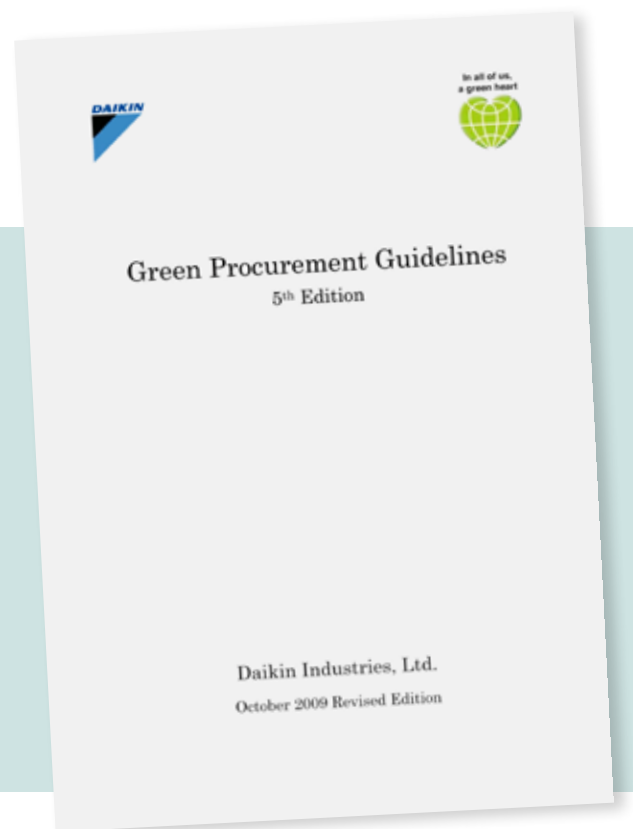


➤ Procurement

A complete supply chain is involved in Daikin's operations, both upstream and downstream of the actual manufacturing. All actors in this supply chain share the same burden of responsibility: to contribute to a more sustainable society. Daikin cannot do it alone; its suppliers must also contribute.

To this end, Daikin has issued Green Procurement Guidelines for its suppliers. These guidelines include:

- › **Striving for ISO 14001 certification**
- › **Legal compliance**
(E.g. Suppliers must not have a record of violations in the past 2 years.)
- › **Chemical substance management**
Restrictions on the use of certain chemical substances (Daikin prohibits the use of 15 substances such as cadmium, lead, asbestos, etc). Cooperation in the investigation of chemical substances (e.g. REACH).
- › **Packaging guidelines, Eco-consideration design, ...**



➤ Daikin's commitment to manufacture greener products extends to its suppliers via the issuance of Green Procurement Guidelines.

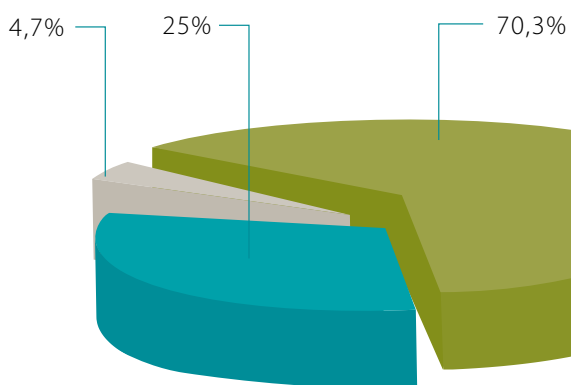


Daikin Europe N.V. and Daikin Industries Czech Republic achieve good results for green procurement evaluation 2009

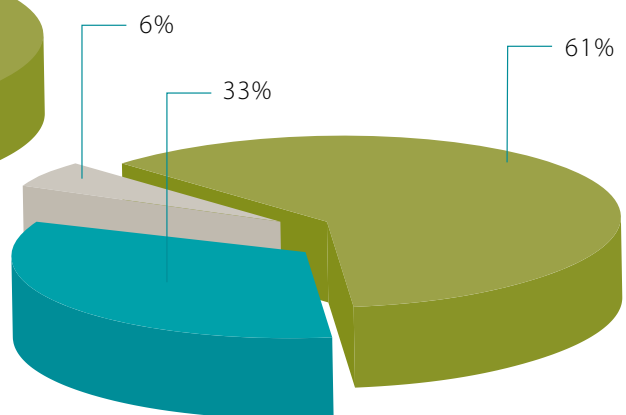
The yearly assessment of green procurement at Daikin Europe N.V. and Daikin Industries Czech Republic shows that over 90% of the core suppliers of both factories achieve an A or B classification.

- A** Current status good but under continuous review
- B** Collaboration will continue, but improvements are needed
- C** No new projects awarded
- D** Further collaboration not possible

Daikin Europe N.V.



Daikin Industries Czech Republic



➤ The results of FY 2009 clearly indicate that the majority of Daikin industries Czech Republic and Daikin Europe N.V. core suppliers take the environmental requirements very seriously, even if there is still room for improvement.

► Assembly

Each year, Daikin Europe N.V. increases its efforts to minimise its environmental impact in manufacturing and beyond. Daikin Europe N.V.'s efforts aim to further reduce energy and water consumption in production and office areas, contain the refrigerants used and reduce the waste generated from production by effective treatment, reuse and recycling. Excerpts of this successful policy are illustrated on the next page with figures from the Daikin Europe N.V. Ostend plant.



Helium replaces R-22 for leak detection at Ostend factory

In 2008, Daikin Europe N.V. began looking for a replacement for the ozone depleting test gas R-22 to perform leak detection at its Ostend factory. For quality and environmental reasons, it is very important to deliver products that are leak tight. That is why products are tested several times for leaks during the production process using a test gas. Previously, this test gas was a mixture of 80% nitrogen and 20% R-22.

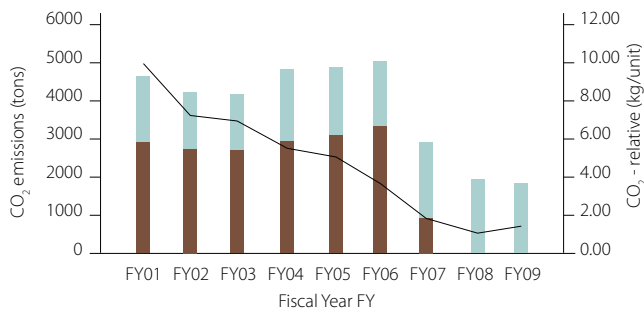
Daikin Europe N.V. has switched in 2009 to a nitrogen-helium mixture. This is in line with EC Regulation No 2037/2000 on substances that deplete the ozone layer, which bans the use of R-22. Helium was chosen since it is a non-ozone depleting, inert gas. A new recovery installation was built and the leak test cabins were modified so the test gases could be recovered after the tests. This modification is just one more example of Daikin's determination to reduce its environmental footprint to a minimum.



► By having opted in the past for 100% renewable energy – from hydraulic power plants in the French Alps – Daikin Europe N.V. took a further step in reducing its CO₂ emission levels and lessening its impact on the environment.

Reduced CO₂ emissions

CO₂ emissions from production & offices

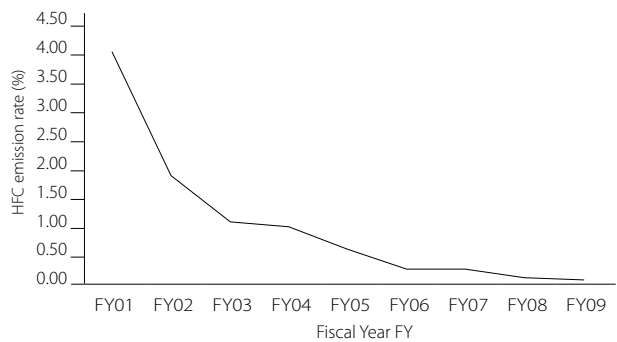


- CO₂ emission gas (tons)
- CO₂ emission electricity (tons)
- CO₂ - relative (kg/unit)

► Once again Daikin Europe N.V. succeeded in drastically reducing its CO₂ emission levels. The slight increase for relative CO₂ emissions per unit is due to a lower production amount. The total abolition of CO₂ emissions caused by electricity use is due to the Green Electricity procurement.

Reduced hydrofluorocarbon emissions

Hydrofluorocarbon emission rate



- HFC - relative (% releases/handled volume)

► Daikin Europe N.V.'s refrigerant emission ratio has reached the 0,2 % target set for 2010.

Reduced water consumption per unit

Water consumption from production

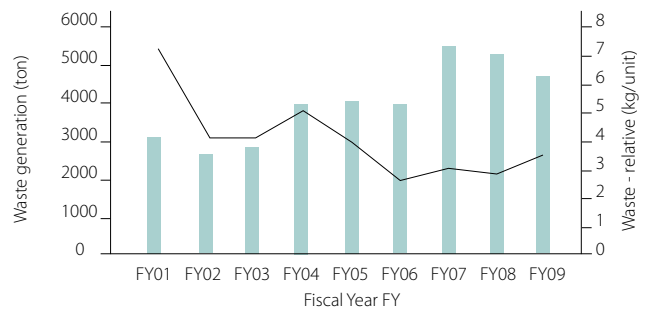


- Water consumption (m³)
- Water - relative (m³/unit)

► Thanks to a series of rationalisation measures Daikin Europe N.V. succeeded in further decreasing its water consumption in CY 2009. The slight increase for relative waste consumption per unit is due to a lower production amount.

Reduced waste generation per unit

Waste delivered out of site from production & offices



- Waste generation (ton)
- Waste - relative (kg/unit)

► Despite yearly fluctuations, the waste/unit ratio shows a downward trend. The increase in relative waste per unit is due to a lower production amount.