

Eco-efficiency

The concept of eco-efficiency involves the better utilisation of resources with reduced environmental impact. The World Business Council for Sustainable Development (WBCSD), of which Roche has been a member ever since it was founded, has identified the following factors in this connection:

- reducing material intensity
- reducing energy intensity
- reducing waste and emissions
- increasing recycling
- using renewable resources
- improving product life
- increasing dematerialisation, i.e. increasing the proportion of services and reducing consumption of resources

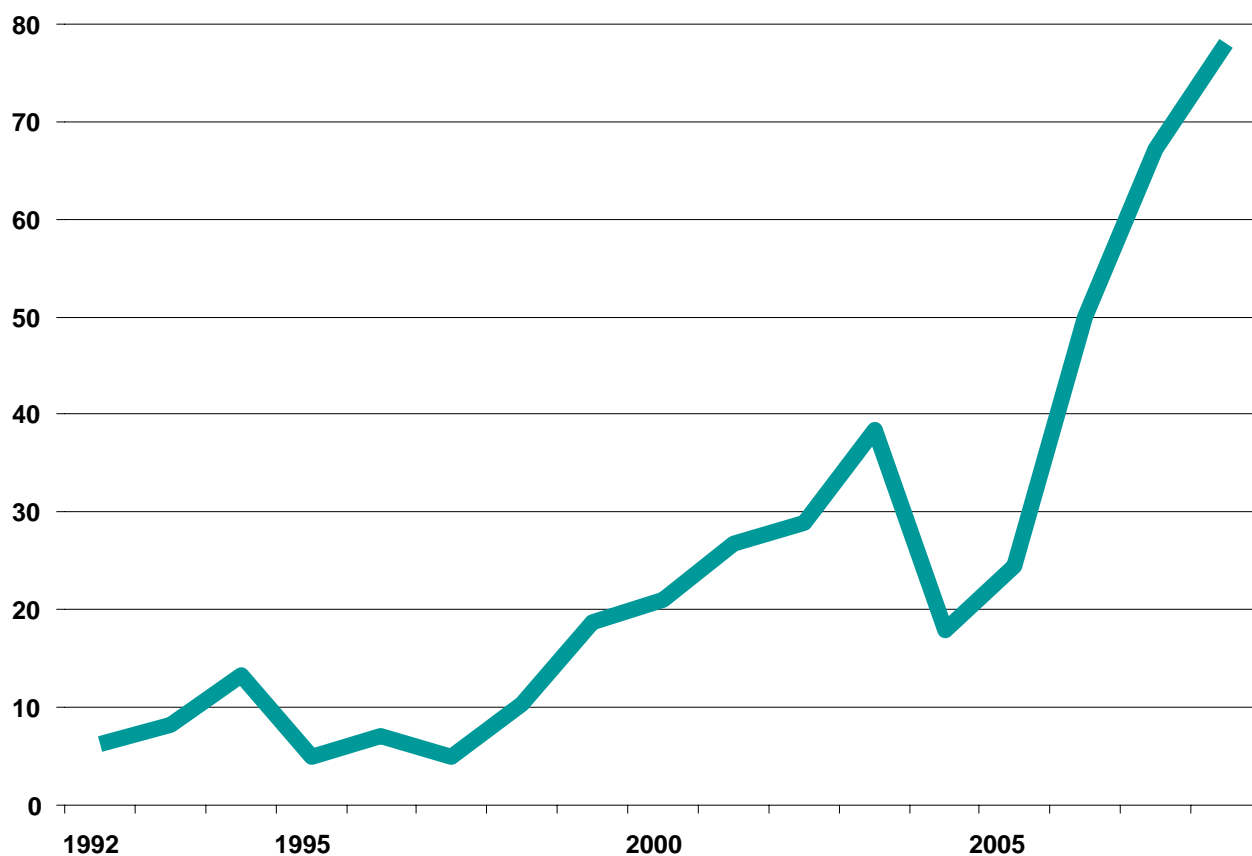
When it comes to improving eco-efficiency, a pharmaceutical company like Roche will primarily focus on reducing the material and energy consumption of processes, reducing quantities of waste and using renewable resources, in addition to increasing levels of non-material services.

Roche quantifies eco-efficiency by the EER value (Eco-Efficiency Rate), a metric which it created itself. This index relates the sales achieved to expenditure on environmental protection and the environmental impact of Roche's activities. This impact corresponds to the appropriately weighted total of the pollutants listed below:

Substance	Weighting
CO ₂	1
Halogenated hydrocarbons	14 000
NO _x	4154
SO ₂	4154
VOC	4154
TOC	82
Heavy metals	16 341
Chemical waste	1

The EER value is the ratio of sales to the product of environmental spending and environmental impact: the more efficiently business activity (sales) is increased while expenditure on environmental protection is limited and environmental harm reduced, the higher is the EER value and thus eco-efficiency.

With a few fluctuations as a result of changes in the business environment due to take-overs or relocation of activities, this value has undergone continuous improvement over the years.



Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
EER	6.32	8.28	13.29	5.00	7.03	4.90	10.37	18.67	21.08	26.85	28.96	38.50	18.31	24.39
Year	2006	2007	2008											
EER	49.97	67.19	77.95											

The discontinuous trend since 2003 is a reflection of the changes in the system boundaries for collecting key figures. The contributions made by our affiliates Genentech and Chugai have been included since 2004. Energy consumption and greenhouse gas emissions take account of the corporate vehicle fleet and business travel, and imported energy such as electricity has likewise been assigned a CO₂ emission factor.

The improvement of the EER value in 2008 is due to the positive development of two parameters used for calculating the EER:

Environmental impacts were reduced due to decreasing emissions as well as smaller volumes of waste. At the same time expenditures for SHE went down.

Ecobalance

The ecobalance is providing a view on the environmental impacts of our activities without considering economical parameters. According to the method set out by the Swiss Agency for the Environment (BAFU) environmental impact points are allocated to ecologically relevant parameters such as emissions, waste, energy- and raw materials consumption. The individual contributions are added and related to the number of employees to give the environmental impact per employee.

In the reporting year this was 4.95 Mio impact points per employee compared with 5.15 Mio in the previous year. Both reduced environmental impacts as well as decreasing use of resources contributed to this 3.9