

## Greenhouse Gases / Climate Change

### Roche Position

The warming of the earth's atmosphere along with changes in the global climate has been well documented. Greenhouse gas emissions (e.g. CO<sub>2</sub>, halogenated hydrocarbons) resulting from human activities are considered at least partly responsible for this effect. Industries, as one source of these emissions, are expected to take appropriate measures to reduce their impact. International agreements (e.g. Kyoto Protocol) and corresponding national legislation define targets and schedules for reducing emissions.

In the Roche Group the improvement of environmental performance has been a key objective for many years. Efforts to reduce greenhouse gas emissions are an integral part of these activities.

Roche supports the efforts of the international community, as stipulated in the Kyoto Protocol, to adopt a worldwide approach to controlling global warming and reducing the emissions of the greenhouse gases that contribute to this process. Roche is committed to reaching its emission goals, in particular through sustainable use of fossil fuel energy sources. Trading of emission certificates under the Kyoto Protocol is currently not an option for Roche and is unlikely to become one in the near future. If this decision is ever reconsidered, the exchange of emission rights would preferably take place between individual sites of the Roche Group.

Because of the close link between CO<sub>2</sub> emissions and energy use, most measures to reduce energy consumption also decrease CO<sub>2</sub> emissions. Roche promotes such measures through the development of eco-efficient processes. This requires the transition to less emission-intensive energy carriers, the application of innovative building technology and continuous upgrading of infrastructure to improve energy efficiency. Roche has also established an aggressive plan to completely eliminate another class of greenhouse gases, the halogenated hydrocarbons. By 2015 cooling and refrigeration systems based on this technology will be removed from Roche operations.

Roche has also set itself the goal of reducing energy consumption per employee, which will also help reduce overall Group-wide greenhouse gas emissions. Energy standards for buildings have been developed to assist the different sites in achieving this goal. In addition, the exchange of best practices in energy savings is encouraged through a variety of communication channels.

The core business of Roche is the development and manufacture of innovative medicinal products to prevent, diagnose and treat diseases. To succeed in this business, we seek measures that are both efficient and economical in our efforts to reduce greenhouse gas emissions.

Climate change is a global issue. It must be addressed on a global scale, with contributions from all parties emitting greenhouse gases. Roche is aware of the political problems in approaching these issues and therefore supports the

relevant bodies advocating for global solutions.

## **The global situation**

The impact of human activities on the environment was discussed in detail in 1972 at the UN Conference on Human Environment in Stockholm. In the area of atmospheric effects, global warming due to greenhouse gas emissions was then already a major topic. Carbon dioxide, which is formed primarily when generating energy from fossil fuels, was identified as the most important greenhouse gas. Further discussions led to the Framework Convention on Climate Change at the UN Conference on Environment and Development (the “Earth Summit”) in Rio de Janeiro in 1992.

Today, the final version of this document is better known as the “Kyoto Protocol”. In the initial phase (2008–2012), this agreement stipulates a 5% reduction in worldwide atmospheric emissions of greenhouse gases compared to 1990 levels. The agreement also includes a list of critical substances (i.e. carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulphur hexafluoride), as well as mandatory individual reduction goals for signatory countries.

In order to allow sustainable economic growth, the Kyoto Protocol does not demand on-site emission reductions, but introduces a “credit system” in which credits for reducing emissions can be assigned and traded. Thus a company can obtain credits for reductions achieved in other locations by purchasing emission certificates. In addition, credits can be generated and sold by reducing emissions through improved eco-efficiency. For businesses interested in undertaking emission-avoiding projects in developing and transition countries without reduction goals and transferring the emission credits gained in this way to industrialized nations, the Kyoto Protocol has defined the Clean Development Mechanism (CDM). For projects in countries with agreed reduction targets, the Joint Implementation (JI) procedure applies, which in addition to CDM includes a deduction of the credits from the national emissions register.

Signatory countries have now implemented the Kyoto goals in their national legislation, including allocation plans for emissions and emission trading systems. It should also be mentioned that the Kyoto Protocol is not limited to a one-time 5% reduction in greenhouse gas emissions, but provides for additional reductions that will be the objective of further negotiations.

As far as reduction targets for the first commitment period (2008–2012) are concerned, latest estimates show that the Kyoto signatory countries are unlikely to meet the goals agreed.

## **The situation in the Roche Group**

All parties emitting greenhouse gases must participate if the goals set in the Kyoto Protocol are to be accomplished. This includes the pharmaceutical industry, although it is not a major contributor to overall global greenhouse gas emissions. In fact in most countries, emission levels of pharmaceutical companies are all below the local legal limits. However, if emission taxes are introduced, operating costs will increase for all businesses.

The main emission sources at Roche are also the main energy consumers in the company. CO<sub>2</sub> is generated both

from the burning of fossil fuels and from the use of imported energy such as electricity, which is associated with a specific CO<sub>2</sub> emission factor. Halogenated hydrocarbon emissions from cooling equipment account for a small fraction of greenhouse gas emissions.

Direct impacts of climate change on the Roche business may occur through extreme weather conditions or higher sea levels. The proper functioning of a site's operation as well as the supply and transport of raw materials and finished goods can potentially be affected. Such scenarios are assessed by performing risk analyses and developing risk reduction measures where necessary. To date, no significant risks related to climatic changes have been identified.

Continuous improvement efforts at Roche have eliminated many emission sources and reduced others. Results from 1992 to the present demonstrate a steady reduction of greenhouse gas emissions from the Roche Group. These figures are calculated as emissions per sales or per number of employees. The responsibility for tracking the Group greenhouse gas inventory as well as for dealing with climate change-related issues in general, resides with the Corporate Safety, Health and Environmental Protection Department (CSE). The greenhouse gas inventory is maintained in accordance with the Greenhouse Gas Protocol, the corporate accounting and reporting standard adopted by the Global Reporting Initiative (GRI).

#### **Further information**

The topics of greenhouse gas emissions and energy consumption have been regularly addressed in the annual Roche Group Reports on safety and environmental protection, as well as in the more recent sustainability reports ([http://www.roche.com/investors/annual\\_reports.htm](http://www.roche.com/investors/annual_reports.htm)).

A publication referring in particular to accounting and reporting procedures for greenhouse gas emissions is the "Greenhouse Gas Protocol", created and published by the World Business Council for Sustainable Development (WBCSD) (<http://wbcsd.org>) and the World Resources Institute (WRI) (<http://www.wri.org>).

The position paper on energy ([http://www.roche.com/sus\\_pos-energy.pdf](http://www.roche.com/sus_pos-energy.pdf)) further emphasizes the close link between energy consumption and greenhouse gas emissions.

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