

Roche Position on Greenhouse Gases / Climate Change

Roche's Position

The warming of the earth's atmosphere along with changes in the global climate has been well documented. Greenhouse gas emissions (e.g. CO₂, halogenated hydrocarbons) resulting from human activities are considered at least partly responsible for this effect. International agreements (e.g. the Kyoto Protocol) and corresponding national legislations define targets and schedules for reducing such emissions.

Industry, as one source of these emissions, is expected to take appropriate measures to reduce its impact. In the Roche Group the improvement of environmental performance has been a key objective for many years and efforts to reduce greenhouse gas emissions are an integral part of these activities.

Sources of CO₂ emissions at Roche are primarily linked to energy consumption. Thus, measures to reduce energy consumption also help to decrease CO₂ emissions. Roche promotes such measures through the development of eco-efficient processes and the development of site-level energy action plans. This requires the transition to more sustainable energy supplies, the implementation of innovative technologies and continuous upgrading of infrastructure to improve energy efficiency.

A minor contribution to Roche's greenhouse gas emissions (approx. 1%) originates from halogenated hydrocarbons used primarily in cooling and refrigeration equipment. Roche has established a plan to eliminate 90% of this class of greenhouse gases by 2015 (newly acquired operations having separate timelines).

These efforts demonstrate Roche's support of the international community to adopt a worldwide approach to controlling global warming and reducing the emissions of the greenhouse gases. Roche is committed to reaching its emission goals through reduced use of fossil fuel energy sources and by the substitution of fossil fuels with sustainable energy sources.

In terms of emission reductions Roche wants to achieve these on the spot, i.e. in its own premises. Thus the trading of emission certificates under the Kyoto Protocol is currently not a preferred option 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 within the Roche Group.

Reducing greenhouse gas emissions for Roche primarily means reducing energy consumption. We have thus established the goal to improve energy efficiency (in GJ per employee) by 10% from 2009 to 2014 which will entail a corresponding emission reduction. To support this goal, sites have developed action plans which are closely

monitored for implementation and effects. In addition, the exchange of best practices in energy savings is encouraged through a variety of communication channels.

Roche has also established a goal of substituting sustainable energy supplies for existing non-renewable supplies. The current goal is to have 20% of energy supplies from sustainable sources by 2020.

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 general terms, including our efforts to reduce greenhouse gas emissions.

The global situation

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 complexities in approaching these issues and therefore supports the relevant bodies advocating for global solutions.

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 had already been identified as a major topic by that time. CO₂, which is formed primarily when burning 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.

The current version of this document is better known as the “Kyoto Protocol”. In its 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. CO₂, 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 introduces a system in which credits for reducing emissions can be assigned and traded, rather than demanding emission reductions from all sources. 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 without their own emission reduction goals that are interested in supporting projects in developing and transition countries, then transferring the associated emission credits to industrialized nations, the Kyoto Protocol has defined the Clean Development Mechanism (CDM).

The parties involved in the drafting of the Kyoto Protocol agreed to holding annual meetings (conference of the parties: COP) for further development of the regulation. Sixteen annual meetings have taken place so far, with hundreds of participants each time. However, instead of progressing further the original Kyoto agreements adherence is deteriorating with the European Union, Australia and New Zealand today being left as the only major supporters. Despite numerous discussions around targets for reductions as well as participation of developing and transition countries, meaningful progress towards a unified greenhouse gas reduction process has not been made. The European Union has developed a sophisticated emission trading system (ETS) for greenhouse gas emission certificates. However, its proper functioning is dependent on a market of critical size, which has not yet been achieved.

As far as reduction targets for the first commitment period (2008–2012) are concerned, latest estimates show quite clearly that the Kyoto signatory countries will not meet the agreed upon goals, although the economic crisis of recent years has reduced energy consumption and corresponding greenhouse gas emissions significantly.

The situation in the Roche Group

All parties emitting greenhouse gases must participate if the goals set in the Kyoto Protocol are to be reached. This includes the pharmaceutical industry, although it is not a major contributor to overall global greenhouse gas emissions. In fact, compared to most countries that have defined cut-off limits for emission levels which call for special measures such as reporting or establishment of reduction plans, Roche operations are below these limits. Nonetheless, if emission taxes are introduced, operating costs will increase for all businesses.

Sources of greenhouse gas emissions at Roche are primarily linked to energy consumption. Thus, CO₂ 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 CO₂ emission factor. Halogenated hydrocarbon emissions from cooling equipment account for a small (approx. 1%) fraction of the greenhouse gas emissions.

Impacts of climate change may directly affect the Roche business. The proper functioning of a site's operation as well as the supply and transport of raw materials and finished goods can potentially be disturbed by extreme weather conditions or higher sea levels. 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. In addition the shifting of manufacturing to different locations of the world is helping to avoid the worst case in terms of a business interruption.

Questionnaires of rating agencies frequently inquire about opportunities for Roche resulting from climate change effects. Although disease pattern in the world may shift as a



result of global warming, nothing has been identified so far that would result in relevant business opportunities for Roche.

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, normalized as emissions per sales volume or per number of employees. The responsibility for tracking the Group greenhouse gas inventory, driving greenhouse gas emissions reduction, as well as for dealing with climate change-related issues in general, resides with the Group Safety, Security, Health and Environmental Protection Department (LS). The greenhouse gas inventory is maintained in accordance with the Greenhouse Gas Protocol, the corporate accounting and reporting standard stipulated 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 recent sustainability reports

(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://www.wbcsd.org>) and the World Resources Institute (WRI; <http://www.wri.org>).

Roche’s position paper on energy (http://www.roche.com/sus_pos-energy.pdf) further emphasizes the close link between energy consumption and greenhouse gas emissions.

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