Roche's Position on Greenhouse Gases and Climate Change[1]

Background

Global warming causes climate change and describes the long-term rise in the average temperature of the climate system and related impacts. Atmospheric temperature levels have always been fluctuating throughout the earth's history. In recent decades, however, temperatures have been on a continuous rise, which scientific consensus views as a consequence of increasing anthropogenic greenhouse gas (GHG) concentrations in the atmosphere, mainly as a result of carbon dioxide (CO_2) emissions from the combustion of fossil fuels. The consequences of higher temperatures and resulting climate change will be manifold and of significant impact to eco-systems. Numerous large-scale impacts are anticipated including the melting of glaciers, permafrost and polar ice, rising sea levels, changing weather patterns and more frequent extreme weather events such as heat waves, droughts, heavy rainfall with floods and heavy snowfall, changes in water source availability, expansion of deserts, geographic spread and seasonality of certain infectious diseases, disrupted food production, changes in the occurrence and spread of species and involuntary human migration. Given that GHGs are very stable in the atmosphere for a long time, many of these effects will persist for long periods.

The World Economic Forum frequently rates climate change and related impacts as top global risks. Climate change is such a big risk that it, along with energy matters, affects 7 of the 17 UN Sustainable Development Goals (SDGs)[2], namely goals 6, 7, 9, 11, 12, 13, and 15.

Most climate change models predict a significant increase in GHG concentrations and continued global warming. Possible responses to global warming are its mitigation by reducing emissions, adapting to its effects, and building systems resilient to its effects. Of these, the most favored response however is its mitigation by reducing emissions. Many countries are party to the United Nations Framework Convention on Climate Change (UNFCCC), whose ultimate objective is to prevent dangerous anthropogenic climate change. Deep cuts in emissions are required and global warming should be limited to well below 2.0 °C (3.6 °F) compared to pre-industrial levels, with efforts made to limit warming to 1.5 °C (2.7 °F).

Impacts of climate change could directly affect Roche business. The proper functioning of a site's operation as well as the supply and transport of materials and goods could potentially be disturbed by extreme weather conditions, higher sea levels or changes in water supplies.

Stakeholders' Expectations and Concerns

Against this background, stakeholders expect that emissions will be reduced to ensure global warming is kept below 2 °C by moving towards a low-carbon future. However, different

[1] Pertains to SDGs 6, 7, 9, 11, 12, 13, and 15

[2] http://www.un.org/sustainabledevelopment/sustainable-development-goals/

stakeholders have unique if not opposing interests. Industries expect that the transition towards a low-carbon future does not result in undue costs and unstable supplies. Also, industries and in particular the energy sector expect regulatory frameworks that ensure planning stability, since capital for investments in low-carbon technologies is a limited resource – especially as they are capital intensive, carry high regulatory risk, have a low return on investment, and a long payback period. Regulators define emission intensity limits, impose levies on GHG emissions, limit emission allowances and establish frameworks and targets for the low-carbon industry. Investors expect companies to comply with pertinent GHG stipulations in an economic fashion, to disclose information about the risks and opportunities presented by climate change and how are they managed. The public expects emissions are reported as well as progress towards goals.
All stakeholders need to partner to ensure the world is developing towards a low-carbon future. Roche's role is to continually reduce its GHG emissions predominantly by increasing its energy efficiency, by substituting non-sustainable energy sources with CO_2-neutral energies and by phasing-out substances that affect the climate.

Roche Position

Maintaining awareness of the importance and urgency to address climate change as one of the largest global risks, we are acting towards a low-carbon future. Delaying actions is not preferred, as this is likely to necessitate more dramatic, more disruptive, more expensive changes in the future.
CO_2 originating from the combustion of fossil fuels for energy purposes constitutes the major part of Roche's GHG emissions. Roche does not operate processes that emit large quantities of other greenhouse gases. Hence, Roche's GHG strategy is in fact an energy strategy. By doing so, Roche does not limit its attention on GHG emission issues only, but holistically addresses all issues revolving around energy use[3].
In addition, a minor contribution to Roche's greenhouse gas emissions (less than 2%) originates from halogenated hydrocarbons used primarily in cooling and refrigeration equipment. Roche has established plans to eliminate this class of greenhouse gases according to defined timelines (see our webpage).
Roche's Group Safety, Security, Health and Environmental Protection Department (Group SHE) tracks and monitors GHG emissions as part of the annual key-figure reporting. Roche's greenhouse gas inventory follows the Greenhouse Gas Protocol, the acknowledged corporate accounting and reporting standard stipulated by the World Business Council for Sustainable Development (WBCSD) and the World Resources Institute (WRI). The Roche Greenhouse Gas Inventory informs on Roche's global greenhouse gas (GHG) emissions (calculated as CO_2 equivalents) which result from business activities and the trend of these emissions over time. It

[3] For more information see Roche's Position Paper on Energy:
https://www.roche.com/dam/jcr:178fbe4a-96fb-4e51-abe8-86723123efb6/en/sus_pos-energy.pdf

forms the basis for establishing and monitoring of tailored programs, targets and actions aimed at reducing GHG emissions. Additionally, the Roche Greenhouse Gas Inventory can be used to aid decision-making by both internal and external stakeholders as well as to respond to rating agencies' questionnaires.

Roche's long-term goal is to reduce Scope 1&2 GHG emissions down to zero by 2050. Since Roche's GHG emissions are predominantly attributed to energy consumption we intend to accomplish this by reducing energy intensity by 50% and substituting the remaining energy as to use nothing but sustainable energies in the long-run. It is impossible to define a concrete path towards these long-term goals, given the unknown and uncertain changes as it regards the farer future of our business landscape, the product portfolio, new yet unknown emerging technologies, industry framework and future legislations. This is why Roche pursues these long-term goals with a staggered approach by continually setting mid-term targets. These targets are based on the current situation and the foreseeable and anticipated changes and hence they can be well planned, managed and monitored. Once a target period expires, new mid-term targets are set taking into account the future situation and circumstances. The current targets are published on the Roche webpage[4].

Roche aims to accomplish these targets at their source, i.e. by improving its own operations. The compensation and off-setting of CO_2 emissions and the trading or purchase of emission reduction certificates are currently not a preferred strategy for its own operations (Scope 1 & 2) and are unlikely to become one in the near future. Such compensations, off-sets or certificates fail to address all other negative impacts associated with energy use, including energy costs, costs for capital intensive energy infrastructure, supply availability, depletion of energy sources, other non-CO_2 emissions, water consumption and contamination, waste, consumption of arable land and land use change.

To promote our position on GHG and energy issues, we implemented an in-house Energy Conservation Directive (K18) in 2006. It seeks to ensure that all decision-making at Roche supports efficient, appropriate and cost-effective energy use. It establishes a management framework and defines fundamental conservation requirements[5].

Roche expects an increased shift towards a low-carbon future. This necessitates new and innovative technologies. We believe that all promising options should be pursued, and technologies should be selected based on their human, environmental and economic impact. This necessitates appropriate frameworks to support research and development, to encourage businesses to innovate and develop new technologies and to promote the utilization of low-carbon and sustainable technologies.

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[4] http://www.roche.com/sustainability/what_we_do/for_communities_and_environment/environment/our_she_goals_and_performance.htm?tab_id=tab1

[5] For more information see Roche's Position Paper on Energy: https://www.roche.com/dam/jcr:178fbe4a-96fb-4e51-abe8-86723123efb6/en/sus_pos-energy.pdf

Roche prefers voluntary action. Should regulations be introduced, Roche expects flexible frameworks that allow sufficient time and technical, organizational and procedural freedom for change and development. For example, reasonable transition periods are vital to enable appropriate action to be taken in the course of normal capital replacement cycles.
Manufacturers in some sectors, particularly consumer goods, evaluate and publish a so-called carbon footprint or CO_2-label for individual products. This would allow consumers to choose a product with a small footprint. Roche does not believe that such efforts are reasonable for its products for a number of reasons. In the particular case of pharmaceutical and diagnostic products the decision makers have not many choices, if ever, to differentiate products according to their carbon footprint. The selection criterion is truly a different one because these products are prescribed for their potential to diagnose, treat and cure diseases. Additionally, a CO_2-label fails to capture all other negative impacts incurred during product manufacture and product lifecycle, be it safety, health or environment-related.
Global warming is an issue of global proportions that needs to be addressed by all, on both a local and global scale. All must participate if the goal to stabilize the GHG concentration in the atmosphere is to be reached. We as Roche want the burden for action to be fair, and we expect regulations and sustainability rating schemes to acknowledge and take into account our prior achievements already accomplished in the past.
Roche continues to be committed to the use of earth's resources responsibly. Roche promotes greater environmental responsibility by supporting:

- The principles in the UN Global Compact regarding climate;
- United Nations' Sustainable Development Goals;
- The Paris Climate Accord approved at COP21 by supporting the long-term goal to limit the increase in global average temperatures well below 2°C and to pursue efforts to limit the increase to 1.5°C;
- Adoption of a global framework (based on COP21) to address CO_2e challenges under which all major emitting countries are committed to emission reduction goals.

Outlook/Status/Current engagement and initiatives

Roche has developed a successful strategy to deliver great GHG reduction results and maintain positive performance[6]. Roche's GHG reduction activities are well-perceived by the public and we frequently earn high scores in investor-backed sustainability rating programs. Roche has been ranked amongst the most sustainable healthcare companies in the Dow Jones Sustainability Index for many consecutive years.
There are multiple elements to the Roche GHG reduction strategy. The K18 Energy Conservation Directive is a core requirement for sites to maintain a focus on continuous

[6] For more information on our progress towards goals see:
http://www.roche.com/dam/jcr:dc27004f-72b3-41b6-8de3-1145626aac38/en/she_greenhouse_gas_emissions.pdf

improvement. To support Roche's goals, sites are required to develop and maintain action plans, which are closely monitored for implementation and effects. The exchange of best practices in energy savings and emission reductions is encouraged through a variety of communication channels. In addition, sites are required to develop a strategic long-term pathway that sets out how they will evolve towards the sustainable energy future with zero GHG emissions.

Beyond the impacts of our own operations, Roche recognizes that there are a variety of indirect environmental impacts throughout our value chain (including Scope 3 GHG emissions). Roche has established a Product Stewardship (PS) program that is designed to reduce the ecological footprint of our products, including resources consumed during product use (e.g. energy and water)[7]. Roche's Procurement organization continues to work with (key) suppliers and service providers to help them reduce their environmental footprint. However, Roche acknowledges that the influence on suppliers to deliver GHG reductions will be limited. Hence, Roche is analyzing and assessing options and opportunities to compensate the respective GHG emissions, unless there are particular opportunities to reduce such emissions in its value chain. This is a different approach than for our operations, in which Roche has direct influence and control.

Impacts of climate change could directly affect Roche business. The proper functioning of a site's operation as well as the supply and transport of materials and goods could potentially be disturbed by extreme weather conditions, higher sea levels or changes in water supplies. Such scenarios are analyzed by performing risk assessments and developing risk reduction measures where necessary. To date, no significant risks to Roche's business due to climatic changes have been identified. In addition, the diversification of manufacturing among different locations globally helps to reduce the potential impacts from a business interruption.

Stakeholders may be interested in opportunities for Roche to benefit from climate change effects, e.g. businesses in the feed and food sectors might find opportunities to grow crops in areas that are currently not suitable due to low temperatures. Although disease patterns 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.

[7] For more detailed information on Roche's PS program see: https://www.roche.com/dam/jcr:5afa4418-ead4-4b4a-b3e6-aa9fa1efea28/en/position_product_stewardship.pdf

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