

GSK Public policy positions

Climate Change and GSK's Operations

The Issue

As long ago as 1994 the United Nations Framework Convention on Climate Change recognised that the climate system can be affected by greenhouse gas (GHG) emissions and ozone depleting substances (ODSs).

The consumption of fossil fuels, other industrial activities and deforestation, generate the majority of GHGs such as carbon dioxide, nitrous oxide, methane, chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs). These gases are collectively known as "greenhouse" gases because they do not interact with short wave radiation from the sun; they instead absorb the reflected long wave radiation from the earth's surface and re-radiate this energy within the earth's atmosphere as heat.

GSK produces GHG emissions as a consequence of consuming energy to discover, develop and manufacture medicines and delivering them to the people who need them. GHG emissions are also produced when some GSK products, primarily treatments for COPD and asthma, are used by patients.

This paper sets out how GSK is responding to the challenge of climate change, including our commitments to reduce our energy consumption and GHG emissions, as well as our efforts at finding alternatives to the current reliance on GHGs in some of our operations. Information on GSK's position on the impact of GHG and ODS on our respiratory products can be found in the public policy section of gsk.com.

GSK's Position

- GSK acknowledges that human activity related to the production and consumption of fossil fuels, primarily for the purpose of producing energy, results in the emission of greenhouse gases (GHGs). We believe sufficient evidence exists that these gases are contributing to changes to the climate system.
- GSK applauds the intentions of international agreements such as the UN Framework Convention on Climate Change. We understand that to be effective such agreements need industry support and we are committed to implementing programmes to help deliver on the intent of these agreements.
- GSK and our legacy organisations have had energy management and GHG reduction programmes in place for many years. Since 1990 it is estimated that GSK's GHG emissions associated with our operations, transport and patient use of our products, has fallen by around 50%.
- GSK will continue to reduce our climate change impact by reducing carbon emissions throughout the entire lifecycle of our products and supply chain – involving patients, consumers and suppliers as well as our own operations. Our objective is to reduce this impact by 25% by 2020, using 2010 as our baseline. Our targets are ambitious and far exceed what is required through regulation. Their achievement will ensure that GSK builds on past successes so future GHG emissions are minimised.
- We aim to reduce our reliance on fossil fuels whenever it is technically and economically feasible. We therefore evaluate opportunities including the use of renewable energy such as wind turbines, solar photovoltaic cells and waste-to-energy plants to allow us to become less reliant on external sources of energy.
- The impact of climate change on GSK's ability to manufacture products is a key risk that is addressed as part of the company's business continuity planning. This includes mitigation against extreme weather conditions, energy outages and water availability.
- GSK recognises that energy consumption throughout our supply chain has implications for climate change and product costs. We therefore encourage our suppliers and contractors to improve their energy efficiency, to reduce their GHG emissions and to report their progress to GSK. This is achieved by running Energy audits of our key suppliers and providing a collaboration platform where our suppliers can share knowledge, expertise and support each other with their own sustainability programmes.

- GSK actively supports market-based mechanisms, such as emissions trading and off-setting, provided they are structured to be efficient, flexible and responsive to business needs. Whenever possible GSK will seek to reduce our own emissions before obtaining credits from third parties or investing in projects which offer sustainable development benefits.
- GSK supports the Montreal Protocol on Substances that Deplete the Ozone Layer. We recognise that Ozone Depleting Substances (ODSs) are severe GHGs that have adverse effects on human health and the environment.
- GSK uses ODSs in a wide range of ancillary equipment including chillers, heating, ventilation, air conditioning and refrigerators and in recent years we have reduced our use of CFC and HCFC by 99%.
- Our ancillary equipment contributes less than 0.08% towards our carbon footprint; however, we continue to explore ways to decrease our reliance on high GHG substances within that equipment.
- GSK understands that climate change may affect the availability and distribution of fresh water. We are therefore working to minimise our water consumption particularly in areas prone to water shortages. This undertaking forms part of a broader GSK commitment to reduce net water consumption in our operations and across our value chain by 20% by 2020 from a 2010 baseline. Further information on GSK water stewardship strategy can be found in the public policy section of gsk.com.
- GSK is committed to the transparent reporting of environmental data, using internationally recognised protocols and providing this information to stakeholders in a timely manner. We are a member of the UN Global Compact's 'Caring for Climate' initiative and in June 2012 joined other member companies in signing the *Rio+20 Corporate Sustainability Forum Joint Commitment for Climate Transparency and Disclosure*.
- GSK's response to the issue of climate change is reviewed at the Board level by the Chair of the Corporate Responsibility Committee.

Background

GHGs and Global Warming

Temperature records and historical proxies for temperature such as tree ring growth, coral layering and a variety of ice core measurements provide evidence that global temperatures are now significantly warmer than the historical average. If the current warming trend continues, at the predicted rate, the United Nations expects that numerous plant and animal species will become extinct and that the frequency of extreme weather events such as severe storms, floods and droughts will increase.

GHGs and Ozone Depletion

The ozone layer filters ultraviolet radiation from the sun before it reaches ground level and there is evidence that it is being depleted through the release of certain man-made chemicals, as well as some GHGs. This is a concern because although most living species have some natural tolerance to UV-B radiation even moderate exposure can have harmful effects. In humans, for example, exposure is associated with increased levels of skin damage including sunburn and skin cancers, eye cataracts and weakened immune systems. Animals, plant and marine life may experience similar effects, reducing plant yields and damaging ocean ecosystems.

Ozone Depletion and Global Warming

There is a complex relationship between the ozone and global warming. The ozone itself has a global warming potential (GWP) so any depletion of the ozone layer will have an *indirect* cooling effect. However, all the substances which deplete the ozone layer have a *direct* global warming potential (GWP) and scientists believe that, on balance, ODSs contribute more to warming than to indirect cooling.

Emissions of some ODSs such as CFCs and HCFCs are decreasing steadily as production levels become lower and their abundance in the upper atmosphere decreases. The ban on CFCs and phase out of HCFCs has led to a slight but welcome recovery in the ozone layer but those already released cannot be removed from the atmosphere and their natural breakdown is very slow. Scientists expect that the ozone layer will be depleting to a minimum level during the next few years before slowly returning to normal levels during the second half of this century.

Hydrofluorocarbons (HFCs) have been developed to replace ODSs and their use is becoming more widespread. However, while HFCs do not deplete the ozone layer they do have a relatively high GWP and as such they are included in the 1997 Kyoto Protocol on Climate Change which seeks to limit their release.

Government Efforts in Response

Governments have made significant efforts to reduce the consumption of fossil fuels. For example, the EU has capped the emission of carbon dioxide from energy intensive industries and uses emissions trading to regulate the market. The EU is aiming to obtain 20% of the energy that it uses from renewable sources before the end of 2020. California in the US requires the state's utilities to generate a third of their power from renewable sources by 2020.

International Protocols have also been negotiated which establish the mechanisms governments can use to limit or reduce their GHG emissions. International agreement has also been reached to phase out the manufacture of the most potent GHGs such as CFCs and HCFCs.

GSK and the Montreal Protocol

To reduce the quantity of ODSs released into the atmosphere, an International Agreement - the Montreal Protocol - was negotiated and entered into force in 1989. Whilst the Protocol prohibits the production of ODSs after certain dates it does not prevent the use of equipment which contains ODSs. This means that it is possible to continue to operate equipment and to "top up" any refrigerant that was lost from other sources such as banked supplies or from decommissioned plant whose ODS has been recycled.

GSK will not exercise this option after 2020, as by then we will have phased out the use of ODSs in plant and equipment containing more than 1kg of charge i.e. equipment typically larger than small domestic fridges or freezers. GSK will also continue to phase out the use of high GWP materials in ancillary equipment where the cooling duty allows as well as substituting the use of high GWP gases currently used for fire management with low GWP commercially-available alternatives.

GSK does not deliberately release or vent any ODS or GWP materials from plant and equipment. However, "fugitive" losses (typically less than 5% per year) do occur through seals and gaskets and significant amounts may be lost during maintenance or if the equipment fails catastrophically during use. GSK has installed automatic leak detection in high GWP and large scale equipment where appropriate to minimise this risk.

More information about GSK's response to climate change and the use of ODS and high GWP materials can be found in GSK's Responsible Business Supplement which is published annually.

September 2016