

Climate Change

The Issue

There is international consensus that climate change is occurring. As long ago as 1994 the United Nations Framework Convention on Climate Changeⁱ recognised that the climate system is a shared resource that can be affected by greenhouse gas (GHG) emissions. The consumption of fossil fuels and other industrial activities generate the majority of GHGs such as carbon dioxide, nitrous oxide, methane, chlorofluorocarbons (CFCs) and hydrofluoroalkanes (HFAs). These gases are collectively known as "greenhouse" gases because they do not interact with short wave radiation from the sun but they do absorb the reflected long wave radiation from the earth's surface and re-radiate this energy within the earth's atmosphere as heat.

In February 2007, The Intergovernmental Panel on Climate Change (IPCC) which is made up of 2,500 scientists from 130 countries reported that it was "very likely" or 90% probable that human activities were the main cause of warming in the past 50 yearsⁱⁱ.

Without significant effort fossil fuels are expected to remain the world's dominant source of energy for the foreseeable future and will continue to be the most significant human contribution to global warmingⁱⁱⁱ. Although the use of renewable energy is expected to grow faster than any other primary energy source, its share of world demand is still predicted to be less than 2% in 2030^{iv}.

This paper sets out how GlaxoSmithKline (GSK) is responding to the challenge of climate change, including our commitments to reducing our energy consumption and GHG emissions as well as our efforts at finding alternatives to the current reliance on GHGs in some of our products.

GlaxoSmithKline Position

- 1. Acknowledging Climate Change:** GSK believes that climate change is globally significant and applauds the intentions of international agreements such as the United Nations Framework Convention on Climate Change. GSK understands that to be effective such agreements need to be developed in partnership with industry. GSK is committed to developing and implementing programmes to support the intent of these agreements. GSK supports the principles of the Kyoto protocol and is working to do its part in achieving the goal of the Kyoto Protocol.
- 2. Causes of Climate Change:** 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. GSK believes that evidence is sufficient to demonstrate that these gases are contributing to changes to the climate system.
- 3. Oversight by the Board of Directors:** GSK's response to the issue of climate change is reviewed at the board level by the Chair of the Corporate Responsibility Committee.
- 4. Improvement Targets:** GSK seeks to reduce its operational GHG emissions and the consumption of energy relative to sales by integrating energy efficiency considerations into all aspects of its business including transportation and investment decisions. For its operations, GSK commits to reduce its use of energy and its global warming potential

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(GWP), by at least 20% by the end of 2010 and 45% by the end of 2015 on a per unit sales basis measured from a 2006 baseline.

5. **Transparency:** GSK is committed to the transparent reporting of environmental data and identifies, evaluates and tracks the consumption of energy and the production of greenhouse gases using internationally recognised protocols, and provides this information to stakeholders in a timely manner. GSK seeks to include the contribution made by third parties that manufacture products on behalf of GSK.
6. **Reliance on Fossil Fuels:** GSK acknowledges that the majority of its energy is generated from fossil fuels. Because of rising energy costs, environmental considerations and the possible longer term concerns about the security of energy supplies, GSK seeks to reduce its reliance on fossil fuels whenever it is technically and economically feasible.
7. **Emissions Trading:** GSK actively supports market-based mechanisms, such as emissions trading, provided they are structured to be efficient, flexible and responsive to business needs. Whenever possible GSK will seek to reduce its own emissions before obtaining credits from third parties.
8. **Funding:** A special operating and capital fund has been created to support the business in achieving its energy and climate change targets. The special fund for climate change is held centrally and is distinct and separate from the existing budget. Furthermore investment decisions are evaluated over their lifetime, using a present worth analysis, rather than over the normal payback period used by GSK.
9. **Business Continuity:** GSK includes climate change risks and energy infrastructure considerations as part of its business continuity planning process to ensure that patient needs can be met if GSK's normal arrangements are affected by a range of factors including extreme weather events.
10. **Suppliers:** GSK recognises that energy consumption throughout its supply chain has implications for climate change and product costs. GSK therefore encourages its suppliers and contractors to improve their energy efficiency, to reduce their emission of greenhouse gases and to report their progress to GSK.
11. **Product Impact:** GSK acknowledges that some of its products contain greenhouse gases that are released into the atmosphere when these products are used by patients. GSK will continue to explore ways to provide patients with alternative products that do not contain greenhouse gases and will phase out the manufacture of all products containing chlorofluorocarbons (CFCs), a potent greenhouse gas, before the end of 2010.
12. **Off-sets:** GSK will investigate the utility of offsetting its emissions of GHGs in certain circumstances particularly when it can be demonstrated that such emissions are unavoidable. If GSK decides to pursue off-setting it would only be via investment in energy efficiency projects which offer sustainable development benefits that have been verified by independent third parties.
13. **Renewable Energy:** GSK understands that fossil fuels will eventually become depleted. It therefore evaluates opportunities including the use of renewable energy such as wind turbines, solar photovoltaic cells and waste-to-energy plants to allow it to become less reliant on external sources of energy. GSK will also preferentially purchase renewable energy from its utility providers to support the achievement of its GWP reduction target and will seek opportunities to increase its use of renewable materials.



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14. **Water Impacts:** GSK understands that climate change may affect the availability and distribution of fresh water. It will therefore work to minimise its water consumption particularly in areas where there are water shortages.
15. **Disease Distribution:** GSK believes that regional and global changes in climate may affect disease distribution and prevalence and therefore recognises the benefits of partnerships to support society to anticipate these potential changes.

Background

Temperature records and historical proxies for temperature such as tree ring growth, coral layering and a variety of ice core measurement provide evidence that global temperatures are now significantly warmer than the historical average.

Regardless of any action which is taken in the future to control the release of GHGs additional warming is anticipated as a consequence of the historical release of GHGs. This is because the world's oceans have an immense thermal mass that causes a time lag in the oceans' response to atmospheric temperatures^v.

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^{vi}.

Increasing energy demand, combined with the inability of many economies to meet their own needs, poses a challenge to energy security, particularly when around half of total oil demand will be met by countries with a high potential risk of internal instability^{vii}. This is expected to lead to price instability as markets respond to perceived or actual events which have the potential to affect world energy supplies^{viii}. Furthermore, the continued consumption of fossil fuels will eventually result in them being consumed at a faster rate than they are being discovered and reserves will begin to drop. As this point is approached energy costs are expected to rise significantly as traders, speculators and other market participants react to supply and demand events.

Although carbon dioxide is the most important greenhouse gas, accounting for 60% of the total impact^{ix}, other gases also contribute to global warming. For example, CFC and HFA gases, which are used in medical devices to treat chronic obstructive pulmonary disease (COPD) and asthma, are more potent greenhouse gases than carbon dioxide.

Government Efforts in Response

Governments have made significant efforts to reduce the consumption of fossil fuels. For example, the European Union (EU) has capped the emission of carbon dioxide from energy intensive industries and uses emissions trading to regulate the market. The EU Renewable Energy Directive also requires member states to adopt national targets for renewables that are consistent with reaching a target of 22% of electricity from renewables by 2010. California in the United States of America (US) has set a similar target of 20% of electricity from renewables by 2017.

International Protocols have also been negotiated which establish the mechanisms governments can use to limit or reduce their greenhouse gas emissions^x. International agreement has also been reached to phase out the manufacture of the most potent greenhouse gases such as CFCs^{xi,xii}.

About GSK and its Response



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GSK is a research-based healthcare company with its headquarters in the UK and a significant presence in the US. GSK's mission is to improve the quality of human life by enabling people to do more, feel better and live longer. GSK has leadership in four major therapeutic areas: anti-infectives; central nervous system (CNS); respiratory and gastrointestinal/metabolic. In addition, it is a leader in the important area of vaccines and has a growing portfolio of oncology products. The company also has a Consumer Healthcare portfolio comprising over-the-counter (OTC) medicines, oral care products and nutritional healthcare drinks.

GSK has more than 100,000 employees worldwide. Of these, over 40,000 are in sales and marketing and about 35,000 employees work at 85 manufacturing sites in 37 countries to produce approximately 4 billion packs of finished products per year. The GSK R&D organisation contains about 16,000 employees with an annual R&D budget of about £2.4 billion (\$4 billion).

The contribution the pharmaceutical sector makes to greenhouse gases is less significant than many other sectors. For example work done in the UK suggests that five sectors are responsible for 86% of emissions (Oil & Gas, Electricity, Mining, Steel & Other Metals, and Leisure, Entertainment & Hotels)^{xiii}.

GSK produces GHG emissions as a consequence of consuming energy to discover, develop and manufacture medicines and to deliver them to the people who need them. GSK also uses CFCs and HFAs in some of its products such as those developed to treat chronic obstructive pulmonary disease (COPD) and asthma. The GHGs used in these devices are released into the atmosphere when they are used by patients.

GSK and its legacy organisations have had energy efficiency and energy reduction programmes in place for many years. Since 2001 absolute energy consumption has been reduced more than 8%.

In support of the principles of the Montreal Protocol, which addressed ozone depletion, GSK embarked on a reformulation programme more than fifteen years ago for all its devices which used CFCs. Today, only around 2% of the devices manufactured by GSK contain CFCs, with the remaining 98% containing HFAs, which have no ozone depletion potential and have 16% of the global warming potential of CFCs. This has been a lengthy and costly process, with total costs estimated at \$1 billion.

In 2006, GSK's contribution to global warming can be broken down as follows:

	Global Warming Potential (CO ₂ equivalent - million kilograms)
From energy used by GSK operations	1666
From transport including products and business travel	340
From other production activities	401
From devices used by patients	4335

GSK's targets are ambitious and far exceed what is required through regulation. Their achievement will ensure that GSK builds on past success so future GHG emissions are minimised.

More information about GSK's contribution to climate change can be found in GSK's Corporate Responsibility Report which is published annually.



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NOTES

ⁱ <http://unfccc.int/2860.php>

ⁱⁱ <http://www.ipcc.ch/SPM2feb07.pdf>

ⁱⁱⁱ G8 Gleneagles Statement 2005, Clean Energy and Sustainable Development

^{iv} IEA World Energy Outlook 2004

^v <http://www.newscientist.com/article.ns?id=dn7161>

^{vi} http://unfccc.int/essential_background/items/2877.php

^{vii} UK Foreign and Commonwealth Office 2005

^{viii} For example within a few months of the Arab Israeli war of 1973 the price of oil more than quadrupled and during the Iran hostage crisis in 1980 the price of oil more than doubled.

^{ix} Intergovernmental Panel on Climate Change, Climate Change 2001: The Scientific Basis (Cambridge, UK: Cambridge University Press, 2001)

^x <http://unfccc.int/resource/convkp.html>

^{xi} <http://ozone.unep.org/>

^{xii} UNEP Publication "Win Win Solutions for the Climate and the Ozone Layer" May 2006

^{xiii} http://www.trucost.com/Trucost_The_Carbon_100.pdf

