

HFC-23 China Project Questions and Answers:

1. What is HFC-23?

HFC-23 (trifluoromethane) is produced as a byproduct in the manufacturing process of HCFC-22 which is a gas used as a refrigerant and as a building block for other chemicals. HFC-23 is one of the most potent greenhouse gases with a global warming potential that is 11,700 times that of carbon dioxide (CO₂). HFCs are among the six greenhouse gases covered under the Kyoto Protocol, signed on to by 157 countries, including China. (As of 18 November 2005, 157 states and regional economic integration organizations have deposited instruments of ratifications, accessions, approvals or acceptances.) The gases covered under the Protocol include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride.

2. Can companies manufacture HCFC-22?

There are no globally established binding controls on the manufacture of HCFC-22. Under the Montreal Protocol, the refrigerant use of HCFC-22 is partially controlled at the present time in industrialized countries—HCFC consumption will be subjected to a gradual phase-out, with cuts from the 1986 base-year values of 35%, 65%, and 90% in 2004, 2010, and 2015, respectively. Final HCFC consumption phase-out will occur in 2020 (2040 for developing countries). However, the other uses of HCFC-22 as a feedstock for other chemicals will not be restricted. The Montreal Protocol Treaty, signed in 1987, governs stratospheric ozone protection and research, and the production and use of ozone-depleting substances. It provides for the phase out of ozone-depleting substances such as chlorofluorocarbons (CFCs), perfluorocarbons (PFCs), and sulphur hexafluoride, used in high voltage applications and the semi-conductor industry.

3. Why are governments and companies from industrialized countries buying greenhouse gas emission reductions in China and other developing countries?

The Kyoto Protocol provides an unprecedented opportunity for the Organization for Economic Co-Operation and Development (OECD) countries to reduce global greenhouse gases and at the same time help developing countries and economies in transition invest in climate friendly technologies and infrastructure. The Protocol's flexible Clean Development Mechanism (CDM) and Joint Implementation (JI) provide an alternative for industrialized countries to help meet their domestic obligations under the Protocol to reduce greenhouse gas emissions by an average of 5.2 percent below their 1990 levels by 2012. Through the use of these market mechanisms rich countries can lower the cost of emission reductions by sponsoring and financing climate-friendly projects in developing countries and in addition buying the volumes of greenhouse gases saved as a result of the use of clean technologies.

4. What is the China HFC-23 project?

The project will capture and decompose HFC-23 that would otherwise be released to the atmosphere in the course of HCFC-22 production. Two companies in China will sell their HFC-23 emission reductions to various buyers through the World Bank Umbrella Facility. The two companies—the Jiangsu Meilan Chemical Co. Ltd., and Changshu 3F Zhonghao New Chemicals Material Co. Ltd.— located in Jiangsu Province in the People’s Republic of China are well established chemical manufacturers in China, both of which have ISO9000 ratings, issued by the International Organization for Standardization. ISO 9000 has become an international reference for quality standards for the industry.

5. Why is the Bank buying HFC-23 emission reductions?

The Bank has been facilitating the participation of developing countries including China, in the emerging carbon market since before the Kyoto Protocol entered into force in February 2005. HFC-23 is a very potent greenhouse gas. Implementing this project provides China with significant resources that can be used for sustainable development purposes and climate change related actions.

6. What technology will be used for the destruction of the HFC-23?

The only methodology approved by the Clean Development Mechanism (CDM) Executive Board, which determines the rules and regulations for CDM projects, for the destruction of HFC-23 is thermal oxidation which requires destruction of the gas in a high temperature incinerator which if properly operated, is 99.99 percent efficient and thus expected to avoid the release of dioxins. Alternatives were assessed through a rigorous process involving international experts, private manufacturers, carbon traders and other stakeholders. In the case of the projects in China the World Bank has assigned the projects a Category “A” rating which requires full prior consultation and disclosure and triggers the application of a set of environmental safeguard procedures, often characterized as the reference standard in the industry.

7. What are the sustainable development benefits of buying HFC-23 emission reductions from China?

In addition to the benefit of reducing the emissions of HFC-23 resulting in immense climate change mitigation benefits, the project, due to the large size of the transaction, allows an unprecedented opportunity to redirect some of the resources generated, towards development purposes. This additional dividend will be managed through a special facility created by the government of China.

The Clean Development Fund (CDF), created by the Chinese authorities, will retain 65% of all HFC-23 revenues and will use these resources for investments in clean development projects focused on climate change. The CDF is expected to finance climate mitigation projects in priority sectors such as energy efficiency, renewable energy, coal mine methane recovery and use.