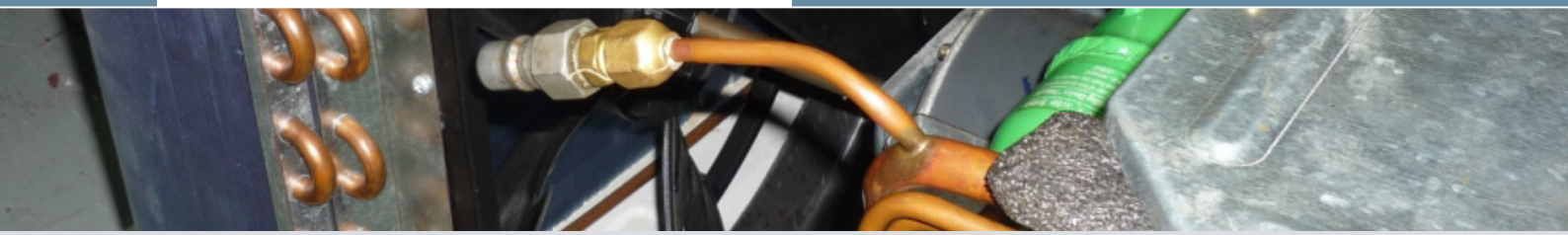

Demonstration project for the conversion of production facilities for the manufacturing of split and window-type air-conditioning equipment from halogenated chemicals to natural, climate-friendly cooling agents

Background

Ozone- and climate-damaging hydrochlorofluorocarbons, also known as HCFCs, are still the most common refrigerants used in the fast growing air-conditioning sector in India. Under the Montreal Protocol, HCFCs will be phased out from 2013 onwards but at present, they will be most likely replaced with hydrofluorocarbons (HFCs) which do not deplete the ozone layer, but have a high climate impact. Climate-friendly alternatives in the refrigeration and air-conditioning (RAC) sector are therefore urgently needed.
The natural refrigerant R290 (propane) is a very suitable alternative for environmental-friendly cooling. It will not only lead to a large reduction of direct emissions, but will also increase energy efficiency (and thereby reduce indirect emissions). Introducing ozone- and climate-friendly natural refrigerants into the emerging Indian air-conditioning market at this stage is a huge but needed challenge and the only chance for a climate-friendly and sustainable future of the sector.

Project Description

The project aims to introduce R290 split and window type driven room air-conditioners into the Indian market. The main goal is to transfer know-how and to develop human, entrepreneurial and institutional capabilities for the hydrocarbon based application of air-conditioning and refrigeration technologies.

The new R290 technology is environmental-friendly (zero ozone depletion potential, global warming potential approaching zero), safe (design), energy-efficient (optimised processes and good practices) and cost-effective.
Within the project, the local manufacturer GODREJ & BOYCE Mfg. Co. Ltd. will install a production line for room air-conditioners on the basis of R290. Special consideration will be given to the flammability risk related to hydrocarbon based technology. Product certification and training of technicians will also be an important part of the project. Other Indian manufacturers of room air-conditioners will also be enabled through technical support and capacity building to take informed decisions on the replacement of HCFCs with R290. The project results will be made available to other manufacturers of room air-conditioners to further promote R290 based air-conditioning technology in India and other markets.
The project is implemented by GIZ Proklima under the International Climate Initiative of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety in cooperation with the Government of India, represented by the Ozone Cell, Ministry of Environment and Forests and the local air-conditioning manufacturer GODREJ and BOYCE Mfg. Co. Ltd. The project will strengthen India`s capacities in adopting environmental-friendly technologies in accordance with international environmental agreements.

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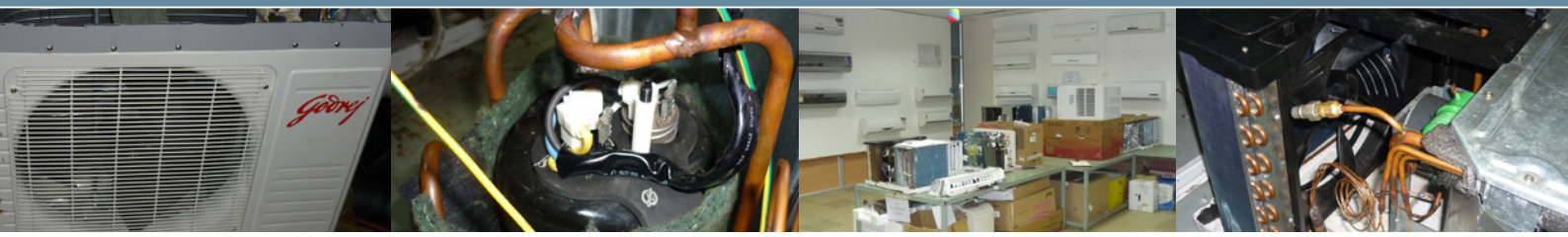
On behalf of

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

of the Federal Republic of Germany



Project Impact

The new split and window-type air-conditioners will reduce India's consumption of the ozone- and climate-damaging HCFCs. Furthermore, the new sustainable technology has the advantage of being also very energy-efficient, thus saving electricity costs and reducing indirect emissions. One production line will produce approx. 180,000 HCFC-free, energy-efficient units per year. This will save direct emissions of the former F-gas refrigerant and indirect emissions related to energy consumption of about 1 million tonnes CO_2e (based on a product lifetime of 10 years).
The cooperation with the local manufacturer GODREJ and BOYCE Mfg. Co. Ltd. helps to spread the general knowledge of R290 based air-conditioning technology and equipment throughout the related sector in India. Hydrocarbon technology will possibly diffuse into other countries in the region and give an impulse to other air-conditioning manufacturers and markets to select the sustainable and clean hydrocarbon technology. Other companies in India and the region will benefit from the necessary institutional set-up for hydrocarbon technology (supply chain, safety infrastructure, training and testing centers).

Title Demonstration project for the conversion of production facilities for the manufacturing of split and window-type air-conditioning equipment from halogenated chemicals to natural, climate-friendly cooling agents
Country India
Sector Air-Conditioning
Objective Transferring know-how and develop human, entrepreneurial and institutional capabilities for the hydrocarbon based application of air-conditioning and refrigeration technologies which are environmental-friendly, energy-efficient and cost-effective
Target Group Indian manufacturer GODREJ & BOYCE Mfg. Co. Ltd.; Indian air-conditioning industry; technical institutes in India; technical committees of international environmental agreements
Project Executing Organization BMU (German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety)
Implementing Partner Organization Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH; Government of India represented by the Ozone Cell, Indian Ministry of Environment and Forests; local manufacturer GODREJ & BOYCE Mfg. Co. Ltd.
Project Approval November 2008
Project Duration Until April 2012
Project Budget EUR 2,062,363
Funds The project is funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety within the framework of the International Climate Initiative based on a decision of the German Federal Parliament.
Impact on Ozone Layer and Climate Protection
One production line will produce 180,000 HCFC-free units per year. The replacement of the HCFC refrigerant will prevent about 1 million tonnes CO_2e of direct and indirect emissions during the lifecycle of the units.
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