



Proklima - Green cooling for a warming world

The challenge

Almost as much energy is used for refrigeration, air conditioning and insulation worldwide as for transport or heating. On behalf of the Federal Ministry for Economic Cooperation and Development (BMZ), the GIZ 'Proklima' project has now been working for some 15 years to help introduce environment- and climate-friendly alternatives to ozone-depleting industrial gases (such as chlorofluorocarbon (CFCs) in partner countries. Proklima thus supports developing and emerging countries in fulfilling their obligations arising from the Montreal Protocol on Substances That Deplete the Ozone Layer. With more than 180 projects and a volume of contracts to date worth almost EUR 50 million, Proklima, on behalf of the German Ministry for Economic Cooperation and Development (BMZ), is the largest bilateral partner under the Montreal Protocol. Since 2008 Proklima has also been working successfully on behalf of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) under its International Climate Initiative (ICI) to disseminate ozone- and climate-friendly technologies. Activities here range from solar-powered fridges for vaccines at health stations in rural areas of southern Africa, to the introduction of climate-friendly room air conditioners in China.

Although Proklima was launched to help protect the ozone layer, protection of the global climate was always part of its overall strategy. One thing that is not clear to many people is that ozone-depleting gases such as CFCs, and the widespread hydrofluorocarbons (HFC), are also potent greenhouse gases (GHG) that contribute to global warming. Ever since it was launched, Proklima has therefore been promoting the use of natural gases (such as hydrocarbons), that possess little or no greenhouse gas potential.

Our approach

Proklima's services encompass advice on strategy development, and on the selection and adaptation of appropriate technologies for developing countries. They also include government advisory services and training measures in the use of ozone- and climate-friendly technologies. Comprehensive capacity development support for the use of innovative technologies is provided through a broad-based approach. In many cases, this approach is able to generate knock-on effects across national borders. It also helps enable partner countries to develop their own sector strategies for national mitigation actions, which can be implemented for instance under the climate protection regime within the framework of a National Appropriate Mitigation Actions (NAMA) plan. Specifically, Proklima's expertise can be integrated into the following areas:

- In private-sector promotion measures, activities in the refrigeration, air conditioning and insulation sectors offer scope for valuable contributions to climate protection.
- In energy management and energy efficiency programmes, the co-selection of natural refrigerants and technology can be promoted. This supports not only the Kyoto, but also the Montreal Protocol. Solar-powered refrigeration and air conditioning are further innovative areas of cooperation.
- In waste management projects the disposal of waste electric and electronic equipment (fridges, air conditioners) can also be implemented with the involvement of the informal sector.
- In health programmes, solar-powered vaccine refrigerators can be established in regions that are not electrified, thus contributing to climate change mitigation.



Proklima's work is performed on four levels:

1. At the international level: policy advice in the context of the Montreal Protocol and in European expert committees.
2. At the macro level: cooperation with governments, e.g. with the national ozone offices and ministries of partner countries (national guidelines and standards)
3. At the meso level: cooperation with industrial associations to implement sector phase-out plans
4. At the micro level: training measures and technology transfer in enterprises.

Examples from the field

Over 10,000 tonnes of ozone-depleting substances (ODS) substituted and some 46 million tonnes of greenhouse gas emissions (in CO₂ equivalent) saved – this is the track record on which the Proklima Sector Programme can now look back after 15 years of activity.

It is anticipated that further projects under BMU's ICI will save a further 36 million tonnes (in CO₂ equivalent). The cost of achieving a reduction of one tonne of CO₂ equivalent through Proklima activities is currently put at EUR 1/t.

One major success during the initial years of Proklima was the transfer of the 'greenfreeze' technology – developed in Germany and propagated by Greenpeace – to China and India. This refrigeration technology based on the hydrocarbon isobutane, and the production of the insulating foam used in the fridge with the foaming agent pentane, were introduced in China back in 1995. Today, some 400 million appliances (meanwhile ca. 40% of the global market) are in operation. Proklima also played a major role in the design and implementation of national and sectoral phase-out plans for ODS. Proklima is implementing large programmes of this kind in Brazil, China, India and Iran, as well as in Africa and the Middle East. A sector-wide policy project for conversion

to ozone-neutral industrial gases was implemented in close cooperation with China from 2004 to 2007. The expertise gained in this project allowed China in September 2007 to approve a groundbreaking amendment to the Montreal Protocol for the accelerated phase-out of hydrochlorofluorocarbons (HCFC).

The results are not confined to purely environmental aspects, though. Many projects also include elements to help generate income and raise the quality of life in Proklima's partner countries. In a fridge recycling project in Brazil, for instance, the informal sector is being explicitly involved and trained to create skilled jobs. In southern Africa solar-powered fridges using ozone- and climate-friendly technology are being developed, produced and made available. These fridges cool medicines and vaccines in rural regions with no power supply; in households and small businesses they are used to keep food cool. In India, in cooperation with a government programme some 500,000 youths from largely poor social backgrounds will be trained in the use of alternatives to the ozone-depleting cleaning agent carbon tetrachloride by 2012. This will improve their employment prospects considerably; the training certificate even means guaranteed employment.

In approximately 40 partner countries, Proklima has for years been successfully delivering strategic advisory services at government level, and implementing sector-wide technical solutions in demonstration projects. This has helped protect the ozone layer and mitigate climate change, and improve general economic conditions, also for marginal social groups.

Contact us

Bernhard Siegele
E Bernhard.Siegele@giz.de
T +49 6196 79-1968
I www.giz.de/proklima

Imprint

Published by:
Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH

Dag-Hammarskjöld-Weg 1-5
65760 Eschborn
T +49 6196 79-0
F +49 6196 79-1115
E info@giz.de
I www.giz.de