

Cool and sustainable: Refrigeration and international cooperation

Background

Refrigerators and air conditioning units feature high on the wish lists of people in hot countries. The International Energy Agency (IEA) calculates that by the year 2030 the energy consumption for air conditioning in developing countries and emerging nations will be four times what it is today. It is often the case that the gases used as refrigerants are produced chemically. They are damaging to the ozone layer and accelerate climate change. By contrast green technologies use natural gases in the cooling process, are more energy efficient and can be driven by sun or wind power. They create jobs and encourage social development.

Commissioned by the German federal government, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH implements just such sustainable solutions for refrigeration, air conditioning and insulation world-wide with its programme Proklima.

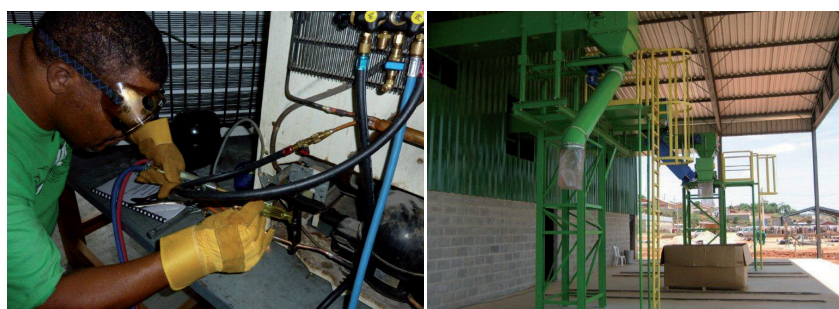
Since 1996 around € 100 million have supported measures in more than 40 partner countries – thereby financing pilot schemes for climate friendly innovations and modifications in refrigeration technology just as much as the counselling of governments and companies as well as the training and instruction of the corresponding technical staff. Commissioned by the German Federal Ministry for Economic Cooperation and Development, the majority of the projects were carried out under the auspices of the Multilateral Fund (MLF) which funds measures for the protection of the ozone layer in developing countries. Complementary funds for climate protection come from the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. The partners are thereby aided in fulfilling their obligations and objectives from the Montreal and Kyoto protocols.

Impact and yield

Policy and environment. Proklima advises governments on the technical elaboration of laws and requirements and their practical implementation – for instance the introduction of a recycling system for old refrigerators in Brazil. Should such measures prove themselves on the market their example can bring about the transformation of whole economic sectors. For example in the production of insulation foams in China: Over the next years a further 500 companies there should be converted to climate friendly technologies. World-wide to date such measures have led to savings of around 100 million tonnes of CO₂ which have an impact on the climate.

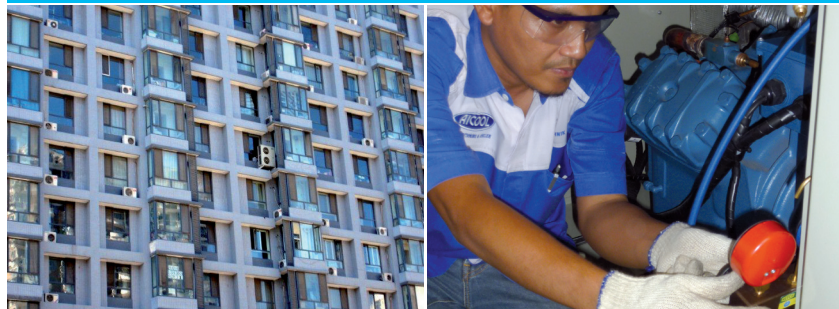
Green economy. So far Proklima has supported some 100 companies with the climate friendly design, manufacture, adaptation to local conditions and market launch of their products. This covers the entire life-cycle of an appliance: from the processing of the raw materials, through its production, maintenance and repair right up to its environmentally sound recycling. The conversion to natural refrigerants promotes a higher degree of energy and resource efficiency as well as a local added value. The climate friendly production and maintenance of equipment increases the competitiveness of companies and safeguards, for instance in Swaziland, jobs in local manufacture. Leading air conditioning manufacturers in China have started with the conversion. An important step: a large proportion of the world market is equipped with Chinese air conditioning units.

Fair distribution. The market for sustainable refrigeration and cooling technology in Africa and the Middle East has benefited from more than half of the project funds. The remaining funds went to China, Brazil and India. The three emerging nations export their products all over the world: In this way environmentally friendly equipment also benefits people in countries where the impacts of climate change are felt the most.



Proklima supports training: refrigeration technicians learn how properly to maintain refrigerators and how to deal with natural refrigerants. (left)

The escape of CFCs from old units is prevented at the new recycling plant for refrigerators in Brazil. Metal and plastic are processed for re-use. (right)



Each year around 100 million air conditioning units are produced in developing countries and emerging nations – almost without exception using harmful HCFCs. With the support of Proklima leading manufacturers in Asia have already started converting to natural refrigerants. (left)

Made possible through a development partnership with the private sector: the air conditioning of a hotel on Bali cools in an environmentally friendly way. The training of technicians plays a very important role here. (right)

Green jobs. Proklima has trained more than 65,000 technicians in equipment, servicing and manufacture. By 2010 some 30,000 refrigeration technicians each in Latin-America and Asia and 5,000 in Africa (mostly unskilled workers) were trained in maintenance practices. They can thereby do their jobs in accordance with the current regulations and standards. The certified training increases their chances of proper employment and a better income.

Cooperation in technology. Proklima funds technology partnerships between research and industry with developing countries and emerging nations. In this way know how is transferred; technical developments are kick-started through examples. Some 70 German and European companies have been involved in these projects since 1994. They have shown themselves reliable suppliers of primary products, components and production plants. The market world-wide for refrigeration and air conditioning technology comes to about € 100 billion and should more than triple in the next twenty years. In view of the rapidly growing market Proklima supports partner governments and companies with climate friendly ideas and prepares them for decision making and sustainable policy in their respective countries.

Health. According to estimates of the World Health Organisation (WHO) around half of all edible produce perishes in tropical countries through lack of properly cooled storage. Refrigeration and air conditioning help reduce the loss of foodstuffs. Moreover they contribute to better medical care and storage of pharmaceuticals such as vaccines. Medication can be reliably refrigerated in areas off the grid using specially developed cheap solar equipment.

Reducing poverty. Development requires electricity. In the same way the use of electrical equipment has to be affordable in order

to become useful economically and socially. Inefficient refrigeration units use up to 80 percent of the energy in a household and are the ruin of families short on income. For this reason Proklima is supporting the exchange and recycling of 10 million old units in Brazil. The electricity costs in poor households have dropped by up to 70 percent with the use of the new efficient units. The electricity suppliers have thereby gained thousands of paying customers.

The bottom line...

The Proklima projects make it clear that a fair distribution of goods and opportunities as well as the strengthening of economies and infrastructures must be in alignment with the goals of global environmental protection. Proklima stands for a fair balance of interests between developing countries, emerging nations and the industrial countries as well as for a sustainable economic development in the North and the South. Relative to their costs these projects have led to considerable economic and social added benefit in the partner countries. They are thereby in line with the goals of Rio+20: to protect the environment and the climate, to fight poverty and to improve the standard of living, in short, to develop sustainably.

Contact: Bernhard Siegele, Programme Manager Proklima
E-Mail: bernhard.siegele@giz.de

Published by Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH
Registered Office Bonn and Eschborn
Proklima
Dag-Hammarskjöld-Weg 1-5
65760 Eschborn, Germany
T +49 61 96 79-10 22
F +49 61 96 79-80 10 22
www.giz.de/proklima

Author Uta Jungmann, HEAT GmbH

Layout Christian Mentzel, CMUK

Printed by Topkopie, Frankfurt

As at May 2012

The GIZ is solely responsible for the contents of this publication.

On behalf of German Federal Ministry for Economic
Cooperation and Development (BMZ)
Division Environment and sustainable use of natural resources
In cooperation with Ministries of Environment and
Ministries of Industry in the partner countries