Introducing climate-friendly commercial air conditioning in Indonesia

Background

So called natural refrigerants and foam blowing agents (e.g. hydrocarbons) have the potential to substantially reduce non CO_2 greenhouse gas emissions. Their introduction supports national policies to convert the refrigeration, air conditioning and foam production sectors to climate-friendly alternative technologies. These innovative technologies have a minimal climate impact (GWP ≈ 3) in comparison to the currently applied technologies based on Hydrochlorofluorocarbons (e.g. refrigerant R22: GWP 1810) or Hydrofluorocarbons (e.g. refrigerant R410A: GWP 2200).
The current, annual consumption of refrigerants and foam blowing agents in Indonesia equals about 14 Mt CO_2e.
For all major applications climate-friendly technologies are readily available. Be it split room air conditioning units, refrigeration equipment for supermarkets or cold stores, all kinds of foam applications in refrigeration equipment or for insulation, or be it centralised air conditioning as in this case.
Initiatives in this sector are very cost-effective (approx. EUR 1/tonne CO_2e), technically feasible and allow countries to become more independent from the expensive refrigerants and foam blowing agents based on fluorinated gases, which are marketed internationally and often controlled by patents.
Proklima, as the global programme for green cooling in the German International Cooperation, GIZ, concentrates on the transfer of technology and the development of capacities to adapt, apply and optimise processes and products in the refrigeration, air conditioning and foam production sectors.

Proklima implements projects in currently 35 countries on behalf of the German Ministry for Economic Cooperation and Development (BMZ).

Project Description

In a public-private partnership together with the Indonesian company AICOOL, different types of systems for refrigeration and air conditioning purposes are being redesigned and optimised for the use of natural refrigerants, primarily R290 (propane). Based on optimised design and tailor-made equipment the new cooling aggregates will be installed at a client's hotel in Bali, Indonesia. Due to its outstanding physical properties this refrigerant is best suitable for hot climates and allows a substantial reduction of raw materials to be used for production. At the same time the optimised products show significantly better energy efficiency of about 15%. The successful project will be on display during the 23rd Meeting of the Parties to the Montreal Protocol in Bali, Indonesia from 21-25 November 2011.

Contact

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Programme Proklima, Dag-Hammarskjöld-Weg 1-5, 65760 Eschborn, Germany
Email: bernhard.siegele@giz.de
Internet: www.giz.de/proklima

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

On behalf of BMZ Federal Ministry for Economic Cooperation and Development