



Green Cooling Initiative (GCI II)

Promoting green cooling worldwide

The Challenge

Rising temperatures, population growth, progressing urbanization and economic growth are driving up the cooling demand, particularly in developing countries and emerging economies. Refrigeration and air-conditioning (RAC) appliances often use fluorinated gases (F-Gases, mainly HFCs) with a high global warming potential (GWP) as refrigerants. HFCs are further used as blowing agents in the foam sector. In combination with low energy efficiency and carbon intensive energy production, the RAC sector causes significant and rising amounts of greenhouse gas (GHG) emissions.

- The Cooling sector is responsible for emissions of approximately 3.83 GT CO₂eq in 2016 and 8.97 GT CO₂eq by 2050.¹
- By 2050, HFC emissions contribute 6–9% of global CO₂ emissions.²

However, the cooling sector, as the major consumer of HFCs, offers considerable potential for mitigation. The proposed HFC consumption and production phase down in the Kigali amendment projects a cumulative mitigation of 79 Gt CO₂eq by 2050.³ Furthermore, indirect emissions, caused by energy consumption of RAC appliances could be reduced by 21% in 2050.⁴

¹ RAC sector GHG projections developed by the Green Cooling Initiative, <http://www.green-cooling-initiative.org/country-data/>, World Map.

² Future atmospheric abundances and climate forcings from scenarios of global and regional hydrofluorocarbon (HFC) emissions, Velders et al., 2015.

³ 36th Open-ended Working Group of the Parties to the Montreal Protocol, Paris, July 2015.

⁴ RAC sector GHG projections developed by the Green Cooling Initiative indirect emissions, <http://www.green-cooling-initiative.org/country-data/>.

Insufficient information on and access to alternative technologies as well as lacking safety and certification standards pose the main barriers for developing countries to initiate the transition to environmentally friendly technologies in the RAC and foam sector (RAC&F). Countries therefore rely on international knowledge exchange regarding technology transformation, standardisation and capacity building in order to include environment and climate-friendly cooling and foam technologies into their national strategies and markets.

The Objective and our Approach

The project Green Cooling Initiative phase I (GCI) promoted a dialogue between various stakeholders and from different sectors including the technology mechanisms under the UNFCCC. Initial recommendations to accelerate the introduction of so-called *Green Cooling Technologies*⁵ were developed and disseminated through the well-established Green Cooling Network. On behalf of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and its International Climate Initiative (IKI), the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH is implementing the Green Cooling Initiative phase II (GCI II), which builds on efforts and approaches of GCI phase I.

⁵ Green cooling technologies avoid climate destructive, fluorinated refrigerants and associated GHG emissions by leapfrogging from ozone depleting refrigerants to natural refrigerants and maximized energy efficiency.

On behalf of:



The overall objective of the GCI is to transform the RAC&F sector towards green cooling technologies and thus minimise the environmental and climate impact of private and commercial cooling supply.

The GCI combines the following approaches:

1. Promoting natural refrigerants & energy efficiency
2. Establishing advanced training institutions & certification schemes
3. Encouraging public and private climate finance for leverage

The GCI builds on an international network of countries, institutions and private sector stakeholders to achieve a GHG mitigation and a reduction of energy consumption. The main partners in accelerating the transformation towards sustainable green cooling technologies are the Seychelles, Ghana and Kenya.

The Activities

The project aims at integrating the immense mitigation potential of the RAC&F sector into the global climate and energy discussion and thereby initiating technology and policy transformation in partner countries. The GCI develops country specific sector strategies including GHG inventories, mitigation scenarios, technical roadmaps and policy recommendations fostering green cooling technologies and showcasing its impact in pilot projects.

Furthermore, the project conducts analyses of the RAC servicing sector and training institutions supporting the development and implementation of technician trainings and certification schemes. Additionally, the GCI conducts finance sector analyses and supports partner countries obtaining funds of international climate finance mechanisms to implement green cooling projects. Finally, the GCI continues to expand its Green Cooling Network providing cooperation between all RAC&F sector stakeholders worldwide and spreading advanced and manifold information concerning green cooling technologies.

Green Cooling Initiative

Target countries Global, African frontrunner countries (Kenya, Ghana, Seychelles)

Objective Promoting green cooling worldwide by accelerating the transformation of the cooling sector towards sustainable and energy efficient technologies using natural refrigerants.

Target Group Political decision makers, technology suppliers and importers, end users of cooling technologies, research and training institutions, technicians and NGOs

Implementing Partner Organization Ministries of Environment, their Environmental Agencies and National Ozone Units as well as research and training institutions in frontrunner countries

Project Duration May 2017 until October 2021

Project Budget EUR 4,900,000

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On behalf of
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