

Questions & Answers

Fit for Green Cooling

Qualification, Certification and Registration of RAC technicians

Follow-up online event, 23 July 2020

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

On behalf of



Federal Ministry for
Economic Cooperation
and Development

Federal Ministry for the
Environment, Nature Conservation
and Nuclear Safety



Recap: Agenda

Proklima – Naturally Cool!

Janna Breitfeld, GIZ Proklima

What is “Fit for Green Cooling”?
Modules and Benefits

Lara Teutsch, GIZ Proklima

Technical approach and standards
– Interview with an expert

Rolf Hühren, HEAT

Examples from the field:
Getting fit for Green Cooling in Kenya

Marindany Kirui, NOU,
Ministry of Environment and Forestry
Juliet Cheruto Ngeiywa, GIZ Proklima

Discussion: How can you benefit from “Fit for Green Cooling”?

All

Closing

Lara Teutsch & Janna Breitfeld, GIZ Proklima





“How do you become a GIZ partner country?”



Within the projects, GIZ selects its partner countries according to their potential to achieve the project objectives and existing cooperation or their political commitment. The final selection of the partner countries takes place in close coordination with the donors (German ministries). If, for example, a project aims to strengthen the network of Caribbean island states in the RAC sector, a review of which countries would be eligible is carried out in one step of the project conception. The next step is an evaluation of the countries' interest and political commitment. Countries with the highest potential for a successful implementation of the project objectives will then be selected in close consultation with the donors.



“How can countries like Sierra Leone be part of GIZ assisted countries for training and certification?”



If you are interested in implementing Fit for Green Cooling, please contact us (lara.teutsch@giz.de).

We will not make the modules available for free download, as they can only be used comprehensively in combination with a country-specific analysis of qualification, certification and registration requirements. We need to see in the next steps in which projects a cooperation can be integrated or which funds are available to realize an implementation for your specific target country.



“What are your views about the fact that R290 air conditioners are not readily available on the market in many parts of the world unlike R32 air conditioners. Is there going to be more R290 air conditioners available on the market soon?”



This goes along with the chicken and egg debate. If there is no demand of R290 split ACs there won't be a supply but the other way around without a supply no demand will develop. Since quite some time now Proklima and other sector projects like RAC NAMA Thailand have been cooperating with different manufacturers. In 2012, Proklima converted a production line of the Indian manufacturer Godrej & Boyce to R290 split ACs, available in the Indian Market, currently being updated. The manufacturer Midea also produces R290 split ACs, but currently only for the Chinese market. Midea has received world's first blue Angel certificate for ACs and has announced to introduce their R290 split AC models designed for the European market to the market in 2021.

There are further discussions on upscaling productions of R290 split ACs but countries still hesitate in their introduction. This is also because of the lack of training for flammable refrigerants, which “Fit for Green Cooling” covers.



“Is there any section in this guidance with regard to the division of the work (roles and responsibilities) between public and private organizations when running the training and certification systems? I believe this varies depending on the countries' status such as economic structures/government capacities.”



Both sectors, private and public, are important components of training in the service sector. However, we are focusing on the government's training programmes, but our holistic approach is aimed at ensuring that established standards in the area of qualification and certification oblige the private sector to adapt its own training programmes to those standards and to have products certified accordingly and personal qualified accordingly. Any action plan developed for government training can be extended to the private sector through appropriate hard or soft policy mandates.



“Tunisia is on going to finalize the instauration of a national certification system related to RAC technicians and services enterprises. This certification is related only to fluorinated refrigerants (HCFC,s HFCs). Can GIZ help Tunisia to organise some training sessions on natural refrigerants?”



That's our area of expertise. Please contact us directly (lara.teutsch@giz.de) so that we can coordinate a possible implementation with relevant stakeholders in Tunisia accordingly.



“What is the way to go for server rooms/telecom companies where you have high heat loads which need high refrigerant charge?”



For applications with high inner heat loads, indirect refrigerating systems can be used. Chilled water units, also in combination with free-cooling, enable low refrigerant charge applications for the operation with flammable refrigerants, ammonia and carbon dioxide. The refrigerating system unit is placed outside and the heat load is transported via cold-water circuit into server rooms. Free cooling in air and water cooled chillers is a significant factor in reducing the operating costs of a refrigeration system. At cold outside temperatures (e.g. during night operation $T_{\text{amb}} \leq 25 \text{ }^{\circ}\text{C}$), compressors are completely switched off and only energy is required to operate the fans.



“Is any example of service standards implemented in area of green cooling?”



Example for best servicing practices are published at
<https://www.giz.de/fachexpertise/html/61049.html>

The application of natural refrigerants is very popular in Europe and many countries worldwide. All applicable standards like EN378:2016 part 1 to 4, ISO5149:2014 part 1 to 4, EN60335-2-89:2020, ISO22712:2018(Pre) support the application of NH₃, CO₂ and hydrocarbons. Natural refrigerants are now used in many sectors of RACHP.



“Is there same or different qualification fix for all technicians?”



One of the characteristics of the scheme is its modular structure. In the beginning of the process, it is necessary to classify and to distinguish e.g. semi-skilled workers, perhaps partially seasonal active only and with lower competence level, from professionals actively planning and executing work tasks with different demands on complexity and severity. Not every employed RACHP worker needs to have the same level of job competences and for this purpose, it is recommended that there are four categories of certified personnel:

1. **RACHP semi-skilled worker** (minimum 1 year of experience, authorised to install RACHP components, refrigerant handling and breaking into the RACHP refrigerant circuit is not permitted)
2. **RACHP maintenance technician** and **RACHP system operator** (minimum 2 years of experience, employed by a company, not authorized to break into the refrigerant circuit)
3. **RACHP craftsman** (minimum 4 years of experience, involved in installation, commissioning, inspection, testing, operation, maintenance, repair, decommissioning and disposal of refrigeration systems and their parts, permitted to handle refrigerants and fluids)
4. **RACHP engineer** (minimum 4 years of experience, involved in design and construction of refrigeration systems)

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Dig deeper:

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Thank you!



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