



of the Federal Republic of Germany



## Cool Contributions Fighting Climate Change (C4)

For a Cool and Green Island

### Background

#### Global

The refrigeration and air-conditioning (RAC) and foam blowing sector is increasingly contributing to Global Greenhouse Gas (GHG) emissions due to indirect and direct emissions. In Grenada, refrigeration and air-conditioning are amongst the main contributors to the average energy consumption in private and commercial buildings, contributing to a significant share of GHGs emitted.

These indirect emissions currently amount to approximately three quarters of GHG emissions caused by RAC appliances. Direct emissions are caused by the release of so called fluorinated gases (F-Gases) used as refrigerants in RAC appliances and blowing agents in the production of insulation foams. With the growing demand for cooling, both types of GHG emissions will significantly rise within the next three decades in a business-as-usual (BAU) scenario. This makes the air-conditioning and foam blowing (RAC&F) sector a significant area for potential mitigation actions and therefore a key element for achieving Grenada's Nationally Determined Contributions (NDCs).

#### Grenada

Following the Paris Agreement in 2015, parties are to pursue domestic mitigation measures to achieve their NDCs and thereby support a strengthened global response to climate change. Additionally, with the 2016 Kigali Amendment to the Montreal Protocol, Parties agreed to ambitious and flexible actions in phasing down hydrofluorocarbons (HFCs) used in the RAC&F Sector. Grenada's total emissions are not significant in the global context with CO<sub>2</sub> emissions of 251,649 tons or 0.0005% of total global emissions in 2011. Notwithstanding this, Grenada has committed to reducing its GHG emissions by 30% of 2010 numbers by 2025, with an indicative reduction of 40% of 2010 by 2030 through the

proposed use of renewable energy resources and energy-efficient as well as climate- and environmentally friendly RAC&F equipment.

#### Refrigerants

F-gases can deplete the ozone layer and are highly potent GHGs with global warming potential (GWP) values up to 14000 times more than that of CO<sub>2</sub>. Hydro-fluorocarbons (HFCs) are currently the most commonly used F-gases. The emission of ozone-depleting-substances (ODS) and highly

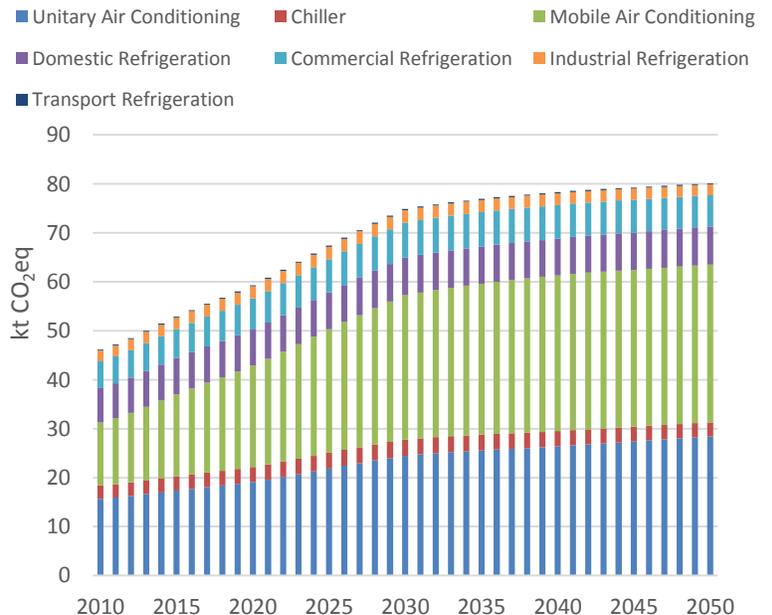


Figure 1- Emissions from Grenada's RAC sector (IN KT CO2EQ)  
Source: GIZ Proklima Project

potent GHGs has a direct impact on global warming that is directly linked to human-induced climate change and the

increased severity of adverse weather events. The Alliance of Small Island States (AOSIS) calls for limiting warming to below 1.5 degrees Celsius is still feasible, but requires early peaking and sharp reductions in global emissions of ODS and GHG. According to the Efficient Appliances and Equipment Global Partnership Program, transitioning to efficient cooling appliances in Latin American and the Caribbean region could potentially avoid the release of approximately 44 Giga-tons of CO<sub>2</sub> (equivalent to the emissions produced by 24 million medium-sized vehicles) and save 138 Terawatt hours (TWh) of electricity annually, amounting to savings of \$20 billion US dollars. This figure is expected to grow as global warming and other factors such as population growth, increasing revenues and improved quality of life accelerates the demand for RAC&F equipment. In particular, energy consumption by refrigerators and freezers in Latin America and the Caribbean is expected to grow by approximately 60%.

## Objectives

The project aims to:

- Support the National Ozone Unit in formulating an appliances inventory database to keep track of RAC&F appliances and the control of F-Gases.
- Promote collaborative structures and processes between international initiatives and local organizations by delivering policy advice, methods, and tools as well as providing reliable channels for communication such as expert review groups and regular dialogues.
- Analyse and improve existing national policies by supporting key policymakers involved in developing the national mitigation strategy to maximizing the climate mitigation potential in the RAC&F sector.
- Strengthen cooperation between various stakeholders (government, private sector and end users) by building local capacity in the RAC&F sector.

Ultimately, the project aims to assist the Government of Grenada to reduce the emission of GHGs from the RAC&F sector in order to meet Grenada's NDCs to battle climate change.

### For more information, please contact:

#### Government of Grenada

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## Approach

- Establish a national inventory of the RAC&F sectors according to the UNFCCC Intergovernmental Panel on Climate Change (IPCC) Tier 2 methodology. It will not only cover direct emissions of fluorinated gases but also indirect emissions resulting from the energy use of RAC appliances.
- Embed the inventory data into a suitable database to enable the NOU to keep track of RAC&F appliances and F-gases within the tri-island state.
- Conduct a gap analysis of the current technologies used in comparison to globally available new technologies in higher efficiency RAC&F appliances and environmentally-friendly natural refrigerants.
- Develop a country specific technology roadmap, which supports key decision-makers to implement a national mitigation strategy for the sector.
- Improve and create national standards that promote the uptake of natural refrigerant technologies
- Enhance the coherence of institutional structures regarding the ozone layer, energy and climate change.
- Assess suitable financing mechanisms for a self-sustained long term implementation of green cooling technologies.
- Boost Grenada's visibility as a front runner of the Small Island Development States (SIDS) for ambitious mitigation efforts in the RAC&F sector at regional and international fora.
- Develop communication strategies for national political actors.

## Partners

Cool Contributions Fighting Climate Change (C4) is jointly implemented by the National Ozone Unit at the Energy Division in the Ministry of Infrastructure Development, Public Utilities, Energy, Transport & Implementation and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). It is funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) under its International Climate Initiative (IKI).

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#### GIZ

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