

## **Co-operation of the Western Cape and Bavaria on the transition to climate-friendly refrigeration and air conditioning**

The Western Cape Government together with the Bavarian State Ministry of the Environment and Consumer Protection implement a bilateral cooperation, aiming at a transformation of the cooling sector towards climate-friendly refrigeration and air conditioning.

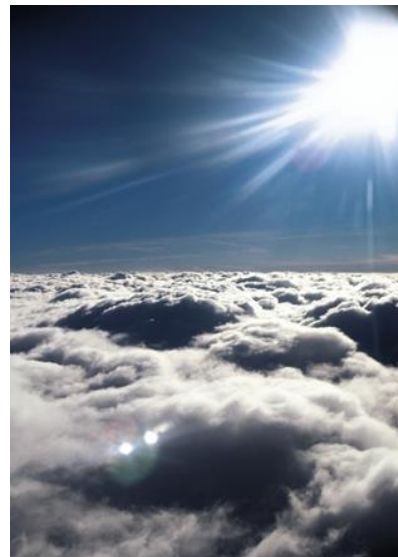
### **The Challenge**

Refrigeration and air conditioning (RAC) in South Africa and Bavaria contributes towards global greenhouse gas (GHG) emissions. This will continue in the future as the demand for cooling equipment is rising. To date, most of the RAC applications use fluorinated gases (F-gases) – hydrochlorofluorocarbons (HCFCs) or hydrofluorocarbons HFCs – as refrigerants. These substances have a high global warming potential and are up to several thousand times more potent than carbon dioxide. When these gases leak – for example during operation, servicing or when an appliance is scrapped – they can cause substantial emissions to the environment.

Estimates show that without the recently adopted Kigali Amendment to the Montreal Protocol, the continuing growth of HFCs would be responsible for a 0.1°C temperature rise in 2050, with a potential to increase up to 0.5°C by 2100. A phase down of the production and consumption of HFCs can provide an estimated 6 to 10% of the total GHG reductions by 2050.

The Government of Western Cape and the Bavarian State Ministry of the Environment and Consumer Protection support the switch to climate friendly cooling technologies. This can be done through cost-effective mitigation, such as the substitution of HFCs with natural refrigerants that do not damage the ozone layer and have lower global warming potentials. Policy instruments to advance more sustainable RAC solutions have proven effective, and as a result, climate-friendly systems that combine high energy efficiency with natural refrigerants and blowing agents are already established in a number of applications.

The project is carried out in cooperation with Proklima – a programme of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.



Climate-friendly cooling technologies contribute to the reduction of GHG emissions

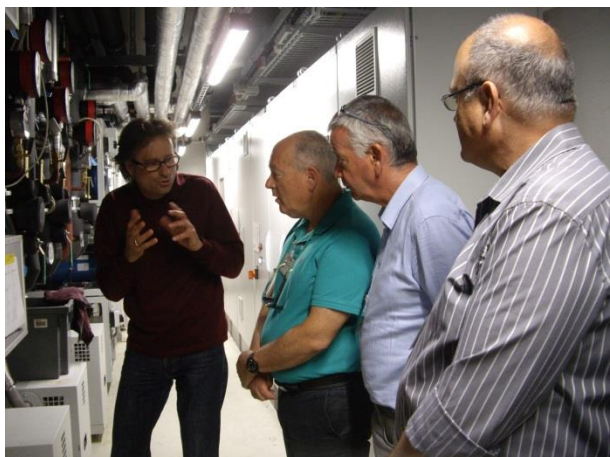
## The Approach

The bilateral cooperation aims to contribute to the climate-friendly development of the cooling sector by introducing highly energy efficient appliances with natural refrigerants such as hydrocarbons or carbon dioxide, with less global-warming potential, and reducing the energy consumption of the cooling process.

This can be accomplished by:

- Training and capacity building measures to convert to climate-friendly commercial and industrial refrigeration: selected technical experts and technicians will participate in a two-week training course in Germany. They will learn from experts in the field how a shift to climate-friendly alternatives is possible, both from an economic and technical perspective.
- Support of international private sector cooperation between Bavaria and the Western Cape: field trips in Bavaria will provide the opportunity to visit companies that have already made the switch to alternative cooling technologies.
- Initiation of knowledge transfer and technology cooperation between private sector companies in Bavaria and the Western Cape: technical workshops in the Western Cape will provide further exchange and discussion on best practice solutions for experts from the RAC sector.
- Demonstration of best practice examples in the Western Cape: a pilot project will focus on the installation of a natural refrigerant technology in a commercial facility and showcase the successful transition to climate-friendly cooling technologies.

The duration of the project is three years aiming to create a medium to long term effect through private sector partnerships as well as the trainings and technical workshops. The activities will focus on the transition to climate friendly cooling especially in the refrigeration transportation of agricultural products as well as natural refrigerants in air-conditioning in green buildings.



Exchange of knowledge and experience – RAC experts from Western Cape will visit companies in Bavaria that already operate technologies based on natural refrigerants



During the technical workshop, experts from the RAC sector can exchange on policy and technical issues related to natural refrigerant technologies

## Contact information

The Department of Environmental Affairs and Development Planning  
Air Quality Management  
Dr Joy Leaner  
Tel: 021 483 2888  
Email: Joy.Leaner@westerncape.gov.za