Governments of the Free State of Bavaria and Western Cape Collaborate on NatRefs; ASHRAE-SA Participates in Pilot Project

The Changing Landscape of Refrigeration

As South Africa joins one hundred and twenty-eight other countries in implementing the Kigali Amendment to the Montreal Protocol[1], the landscape of refrigeration continues to change. In South Africa, the 'baseline' Hydrofluorocarbon (HFC) consumption is currently being determined so that, as early as 2024, this consumption will be 'frozen' and incrementally reduced to 20% of that baseline value by 2045[2].

Countries classified as 'Non-Article 5' are at the forefront of implementing the Kigali Amendment, well past their baseline measurement and 'freeze'. Presently, in the first of various planned phasedown steps, these countries are preparing for a significant reduction to approximately 60% from around 90% of their baseline levels, depending on the exact classification of the relevant country[2]. A step-down that will occur in only three to four years.

Governments of the Free State of Bavaria and Western Cape Collaborate

In the search for ways to successfully transition away from HFCs, these 'Non-A5' countries have therefore already learnt invaluable lessons about what does and doesn't work. As such, the bilateral cooperation between the governments of the Free State of Bavaria and the Western Cape comes at an auspicious time.

In September 2017, the Bavarian Ministry of the Environment and Consumer Protection (StMUV), the Bavarian Environment Agency (LfU), the GIZ GmbH (Program Proklima) and the Western Cape Government Department of Environmental Affairs and Development Planning (WCG DEA&DP) initiated a partnership on transitioning to natural refrigerant technologies in the Western Cape. To date, results include training of nine refrigeration and air-conditioning (RAC) experts from South Africa on natural refrigerants in Germany, two technical workshops on 'Green Cooling Solutions' held in Stellenbosch and another held virtually, as well as delegation exchanges and visits to companies with natural refrigerant technologies in Bavaria and South Africa.

Additionally, the implementation of a 'RAC Pilot Project' was a key cooperative activity. Following an open process to select a Technical and Vocational Education and Training Institute (TVET College) in the Western Cape, the West Coast College was selected in September 2020 to execute the RAC Pilot Project. The project was co-financed by the college, GIZ (via the Green Cooling Initiative), and LfU, whilst the WCG DEA&DP and Department of Economic Development and Tourism facilitated the interactions between all partners, at various levels. The GIZ and the college procured RAC equipment to enable training on the safe use of hydrocarbons as a refrigerant in the workshop. This took the form of locally procured R290 commercial beverage coolers, whilst equipment such as vacuum pumps and charging kits were sourced and imported for use. Additionally, academic training material on the application of A3 refrigerants, to be used by both teachers and students, was developed and shared by GIZ. The official opening of the West Coast College Refrigeration and Air Conditioning Training Centre and Green Laboratory will be on December 6th, 2021, setting down an important marker for West Coast College as the first TVET College to offer natural refrigerant training in the region.

RAC Pilot Project and ASHRAE's Involvement

The South African Chapter of ASHRAE was proudly associated with the RAC Pilot Project. ASHRAE-SA participated as a member of the Pilot Project's Technical Advisory Team, alongside representatives from the South African Institute of Refrigeration and Air Conditioning (SAIRAC) and the South African Refrigeration and Air Conditioning Contractors Association (SARACCA).

Together with these members of the Technical Advisory Team, ASHRAE-SA participated in discussions aimed at identifying technologies and equipment that might be a good fit for South Africa and the West Coast College. A review of the associated training material and advice on South African regulations was also provided by ASHRAE-SA and the other members of the

[1] https://ozone.unep.org/all-ratifications

[2] https://ozone.unep.org/treaties/montreal-protocol/annex-f-hydrofluorocarbons

Technical Advisory Team, resulting in a variety of endorsements for this worthwhile initiative.

As countries around the world approach the business end of implementing reductions to HFC consumption, it is clear that collaboration of governments, industry, associations and training institutes will play a key part. The project on natural refrigerant technologies between the Governments of the Free State of Bavaria and the Western Cape has contributed meaningfully towards this process. ASHRAE-SA has been a proud participant of this important initiative.

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