

- **SEYCHELLES ROLE TOWARDS USAGE OF HYDRO CARBON**

- **Presented by:**

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TRAINING on Hydrocarbons for TECHNICIANS

- TRAINING HAS BEEN ONGOING SINCE 2005
- 1ST TRAINING WAS TRAIN THE TRAINERS
Hr-22 AND Hr -12 was used.

2012: training was done on HR-290

Total training done: 5

Total technicians: approx 100

USE OF HYDROCARBONS

Environmental benefits

- zero ozone depleting potential
- low global warming potential

TECHNICAL BENEFITS

- Technical benefits (cost effective for local consumers, compatibility with R12/R134/R22 system, the presence of the hydrocarbon in the refrigeration cycle has no impact on the mechanical components (i.e. Compressor) and the lubrication oil)
- Performance
 - i. Lesser refrigerant quantity (kg) is required for the same cooling capacity. Which bring cost savings for the technician and possible the client.
 - ii. The presence of the hydrocarbon in the refrigeration cycle has no impact on the mechanical components (i.e. Compressor) and the lubrication oil.
 - iii. Operational; Cost saving is minimal when using 50/50 or R290, whereas HR12/HR22 refrigerant performance was much better.

Refrigerants & the Environment

Refrigerant	ODP	GWP	Flammable	Toxic	Compatible with system materials	Other issues
CFCs R11, R12	High	High	No	No	Good	Phase out
HCFCs R22; R123	Low	High	No	No	Good	Will be phased out
HFCs R134a R410 R407	Zero	High	No	No	Need different oil and filter, some seal problems	Moisture and contamination serious
Hydrocarbons R600a; R290	Zero	Very low (3)	Yes	No	Good	Flammable Explosive
Ammonia R717	Zero	zero	Yes	Yes	No copper components	Toxicity, restricted use

TECHNICAL DISADVANTAGE

- **Safety issue**

- i. **Hydrocarbon are flammable refrigerant, stricter safety precaution needs to be taken while handling hydrocarbon system.**

- **Limitation**

- i. **Due to the flammability concern and refurbishment cost technician are reluctant to retrofit with hydrocarbons as it cancelled out the benefits gain on refrigerant cost.**
 - i. **Due to the practical safety limit of $8\text{g}/\text{m}^3$, technician express concern of its application in commercial establishments, were in most circumstances all the outdoor unit are located at the same location and most of the units has a liquid receiver.**

Role of the Seychelles Government

- National Legislation in place to phase-out HCFCs Environment Protection (Ozone) Regulations 2010 which ban all HCFC refrigerant/equipments
- Importers are advised to import equipments using HR
- Refrigerators using R-600 /R-290
- Solar-energy + hydrocarbon air-conditioning project under the HPMP
- Training on Hydrocarbons with GIZ under the HPMP

Presentation of certificates March 2012



Training in July 2012

