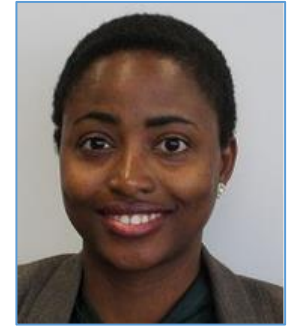




Ozunimi Iti



Ozunimi Iti works as Industrial Development Officer in UNIDO's Environment Department.

She has spent the last 8 years in UNIDO, managing Montreal Protocol ozone depleting substance phase-out projects for countries in Africa, the Middle East and the Caribbean.

Prior to joining UNIDO, she held various environmental consulting roles with the private sector and local authorities in the United Kingdom.

She holds a Bachelor's degree in Chemistry, a Master's in Environmental Sciences with Legislation & Management and a PhD in Physical Organic Chemistry.



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



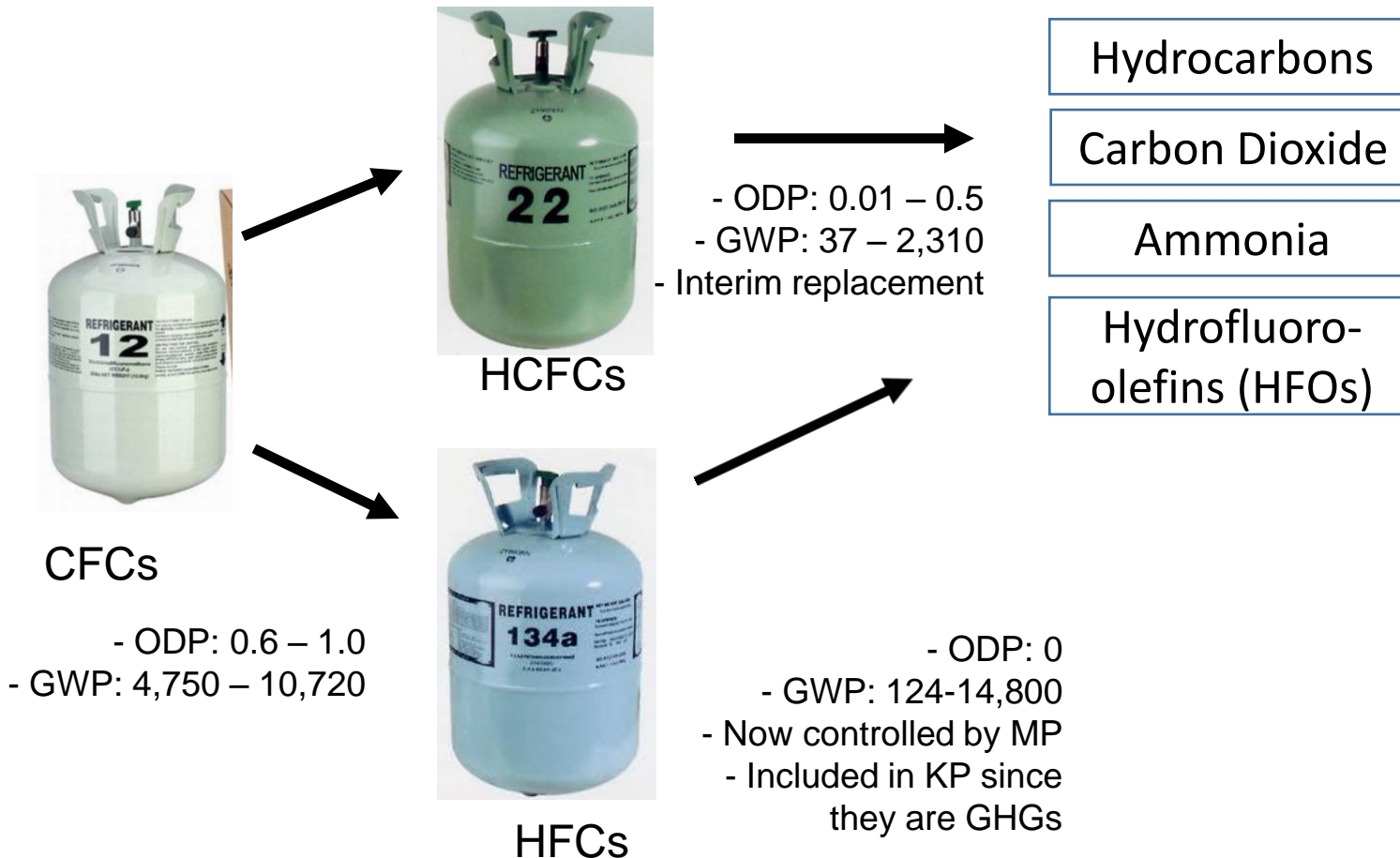
SUSTAINABLE DEVELOPMENT GOAL 9
INDUSTRY, INNOVATION AND INFRASTRUCTURE

Alternative Solutions For the Phase-down Of HFCs: Market Barriers And Options To Overcome Them- *UNIDO Approach in the Caribbean*

Wednesday, 14 June 2017



Montreal Protocol as a Driver for Change



Conditions for Technological Change

Market Acceptance

- End-users, regulators and public must accept the product
- Acceptance can be based on variety of factors including safety, quality, price and even competition

Access to Reliable Equipment & Alternatives

- Product has to be readily available in the market
- Appropriate tools and components that go with the product have to be readily available
- Suppliers have to trust the destination

Availability of Skilled Workforce

- People trained to handle the product and related equipment
- Skilled people available to train others

Adequate Policy Framework

- Product has to be properly regulated; licensing systems, standards, curricula, etc.
- Guidelines for safety, certification, etc.



Background to Demonstration Project

- Participant countries: **The Bahamas, Grenada, Saint Lucia, Saint Vincent & the Grenadines and Suriname**
- Natural alternatives to hydrochlorofluorocarbons (HCFCs) are hydrofluorocarbons (HFCs)
- HFCs have high GWPs; contribute to global warming
- Low-GWP alternatives have technical and safety issues
- Ammonia- high toxicity
- Carbon dioxide- higher working pressures
- HCs/HFOs/HFC blends- mild to high flammability
- Need for well-trained technicians
- Improve supplier trust and market acceptance
- Improve availability of alternatives and components



Strategy

- Activities at Regional and Country level
- Standard equipment package showcased
- Linkage formed between suppliers, technicians and government
- Results mainstreamed into HPMPs
- Partnership with GIZ on training strategy and equipment package





Planned Activities

- Pilot Training Center Equipped ✓
- Policy & Curriculum Development Workshop ✓
- “Train the trainers” Regional Workshop concurrent with Technology Exhibition
- Country Activities-
 - One training session per country
 - Certify technicians on handling flammable refrigerants
 - More training sessions held through HPMP
- Regional Expert Group Meeting



Activities- Pilot Training Center Equipped ✓

- T. A. Marryshow Community College, Grenada
- Brazing installations,
- R-290 demonstration units (split room A/C), donated by Aux Group, China
- Hydrocarbon specific tools and toolkits
- Other tools as needed





Workshop on Policy and Curriculum Development ✓

- Training institution selected through competitive bidding process
- Ozone officers and trainers responsible for setting curricula
- Structure of training, assessment and certification scheme
- Setting up a training scheme
- Training tools and techniques
- Minimum competency of personnel
- Managing a training centre
- A single curriculum will be designed for participating countries





Activities-“Train the trainers” Regional Workshop and Exhibition

- 4-day Intensive Workshop and assessment based on F-gas certification
- Trainees nominated from existing vocational training institutions
- Trainees will receive theoretical and hands-on training
- Only trainees passing the assessment will be certified on flammable refrigerants and related technology
- 1-Day Exhibition concurrent with trainers workshop
- Regional suppliers and distributors of flammable RAC components and safety devices invited
- Partner with IIR/ASHRAE/industry associations to invite members to exhibit



Activities- Country Activities

- Implement the adopted curriculum
- Purchase R-290 demonstration units
- One training session per country
- Certify technicians on handling flammable refrigerants
- More training sessions held through HPMP





Activities- Regional Expert Group Meeting

- Held in St. Vincent and the Grenadines
- Evaluation of project results
- Fine-tune the regional curriculum
- Prepare final report and videos (of training sessions)
- Provide recommendations for future replication under Stage II HPMPs
- Disseminate the project results and lessons learned



Outlook

Results Replicated

- Stage II HPMPs
- Participating Countries and CARICOM

Outcomes Tested

- Pilot conversion projects within HPMPs
- End-user acceptance, supplier trust

Approach Replicated

- Other refrigerant groups
- Other regions



Thank You

Ozunimi Iti

o.iti@unido.org

