**TERMS OF REFERENCE**

**Developing a Needs Assessment for the Refrigeration and Air-conditioning Servicing Sector in Saint Lucia**

1. **BACKGROUND**

Article 5 (developing) countries under Montreal Protocol on Substances that Deplete the Ozone Layer (A5 countries) are implementing the Hydrochlorofluorocarbons (HCFC) Phase-out Management Plans (HPMP) and moving towards alternative technologies. The most commonly used HCFC alternatives are the high global warming potential (GWP) hydrofluorocarbons (HFCs) such as HFC-134a, R-410A, R-404A, R-407C etc. used in the refrigeration and air-conditioning (RAC) sector, particularly the servicing sector (referred to as refrigeration servicing sector (RSS) hereafter).

In Saint Lucia, the RSS is the main user of ozone depleting refrigerants. In view of the Kigali Amendment which will drive the HFC phase-down in many countries and ongoing concurrent phase-out of HCFCs, it is expected that between 2020-2040, most of A5 countries’ markets will have units running with refrigerants such as R22, R134a, R410a, R32, R290, HFO and variety of blends. The RSS will become more complex to manage with multiple refrigerants available and suitable only for selected applications and with many alternatives presenting operational challenges due to their toxicity, high pressure and flammability. The Kigali Amendment brings to the forefront the importance of climate impacts of refrigerants and cooling technologies. Energy efficiency is another key consideration for the RSS. In this context, the competence of the servicing sector in installation, maintenance, repair, and disposal becomes critical. The focus on the HPMP and future HFC phase down related projects should be on building a sustainable system to support the refrigeration servicing sector, which will, in turn, be able to support the safe and fast adoption of alternative technologies.

In this regard, Saint Lucia and other Parties to the Montreal Protocol are implementing Enabling Activities Projects which have the objective of assisting countries with ratification and meeting initial obligations of the Kigali Amendment. A key component of the Enabling Activities Project focuses on developing capacity and training needs assessment of the RSS, including situational analysis with mapping of present practices, end-use trend analysis, and conducting awareness and consultations workshops with the RSS’s stakeholders. This will assist the National Ozone Unit (NOU), implementing agencies and public and private sector stakeholders to develop sound strategies and programmes to support the refrigeration servicing sector to transition to zero ozone depleting and low global warming technologies.

1. **OBJECTIVE**

The objective of this consultancy is to strengthen the capacity of the refrigeration servicing sector in Saint Lucia to manage alternatives to ODS and HFCs through a greater understanding of the needs and opportunities created by the Kigali Amendment

1. **METHODOLOGY**

The methodology for the assignment will involve desk research and literature review, focused surveys, interviews and consultation with key stakeholders. The Consultant will work closely with the NOU and UN-Environment to complete the assignment.

1. **SCOPE OF SERVICES REQUIRED**

The Consultant is expected to undertake take following:

* 1. Participate in an inception meeting with the NOU
  2. An assessment of training (and other) needs for the servicing sector, to support the transition to low GWP, higher energy efficient (EE) alternatives, such as natural refrigerants (and other not-in-kind alternatives) and standards;
  3. Conduct a mapping exercise to determine the HFC refrigerants available on the local market, their alternatives and their uptake;
  4. Provide technical assistance on HFC data collection and reporting;
  5. Conduct a RAC technology projection and impact analysis;
  6. Host a Training Seminar for RAC Servicing Technicians on the Management of alternatives through their life cycle (use, storage, transportation and disposal)
  7. Work closely with the consultants undertaking components 1, 3 and 4, as applicable, to facilitate synergies and maximise efficiencies.

1. **DELIVERABLES**

The consultant/s is expected to deliver the following outputs:

* 1. Inception Report
  2. An assessment report containing country specific needs for the RAC servicing sector to transition to low GWP, higher EE alternatives; including, but not limited to, training requirements and training tools/equipment; safety standards; etc; (Proposed report structure presented in Annex 1)
  3. A Report on HFC refrigerants available on the local market, their alternatives, as well as projections on alternative technology uptake
  4. One RAC Servicing Sector Training Seminar on the management of alternatives through their life cycle including a training report and evaluation of training.

1. **QUALIFICATIONS AND EXPERIENCE**

The consultant or consulting team should meet the following requirements:

* An advanced university degree in the Natural Sciences, Environmental Studies, Heating, Ventilation, Air-conditioning and Refrigeration (HVAC&R) or any other related fields;
* A minimum of 5 years’ experience in undertaking similar research, assessments and reporting;
* Good understanding and knowledge of Montreal Protocol and climate change issues; environmental sustainability; sustainable industrial and economic development
* Have proven experience to manage market surveys and consultation interview;
* Excellent research and report preparation skills;
* Demonstrated ability to prepare and deliver/conduct training on subject matter
* Proven ability to write and present complex policy-related issues for a non-technical audience;
* Excellent command of the English language;
* Understanding of HVAC&R technologies and applications is desirable.

1. **REMUNERATION**

The Consultant is required to submit a bid for evaluation, following which negotiations will be held with the successful applicant. In the assessment of submissions, consideration will be given to technical competence, qualifications and experience, demonstrated local and regional experience on similar assignments, proposed cost and existing commitments.

1. **TIMEFRAME**

The Consultant will be contracted for a period not exceeding five (5) months.

1. **SUBMISSION**

Bidders are required to submit two (2) hard copies of their proposal, including both the technical and financial proposal, in a sealed envelope clearly marked ***“Consultancy: Developing a Needs Assessment for the Refrigeration and Air-conditioning Servicing Sector in Saint Lucia”.***

Submissions must be made to the following address no later than 12 noon on Tuesday 31 December, 2019

**The Secretary**

**Department Tenders Board**

**Department of Sustainable Development**

**Georgiana Court**

**John Compton Highway**

**Vigie**

**CASTRIES**

**ANNEX 1**

**Refrigeration Servicing Sector Needs Assessment**

The refrigeration servicing sector needs assessment report would cover the following broad components:

1. **Analysis of HVAC&R service sector**

* The macro-level information such as estimated service technicians (including gender), estimated service workshops, general competency level etc., taking into consideration gender
* Service sector demand from Residential (Room AC, fridge), transport (MAC) , commercial (cold storage, chillers, retail refrigeration)& industrial (large cold storages)etc.
* Formal vs Informal service sector.
* Historic and Present Montreal Protocol & Service Sector related activities.

1. **Institutional Framework and Policies for refrigeration servicing sector**

* Main institutions and stakeholders that are relevant to the RSS.
* Professional association and their relative function with government and industry.
* Policies and regulations that are relevant to the service sector.

1. **Mapping of the main end-users for the service sector**

* Identifying the main users of refrigerants and HVAC&R equipment in the country.
* If possible, identifying and estimating leakage rates at these end-uses.
* Identifying the servicing rate for these end-use equipment for different application.

1. **Technology trends and present servicing practices**

* The main refrigerant technologies (including low GWP technologies) that are available/imported and/or expected in the country according to application.
* Present servicing practices in these various applications/ sectors.
* Identifying the trends on Recycle/Reuse/Reclamation in the country.
* The adoption of the good practices training for technicians/service sector.
* The equipment and tools available at service workshops and with service technicians to handle low GWP technologies

1. **Technical and Vocational Education and Training (TVET) related to refrigeration servicing sector**

* The national TVET framework with respect to refrigeration servicing sector.
* Status of Technical Institutes for training for the refrigeration servicing sector.
* Status of certification systems for refrigeration servicing workshops and technicians.
* The capacity of the TVET training of refrigeration servicing sector and training focus on different refrigerant technologies.
* The equipment and tools available in Training Institutes to handle low GWP technologies

1. **Standards guiding the introduction and promotion of low GWP technologies**

* The national Standards Formulation/adoption framework with respect to refrigeration servicing sector.
* Standards available in the country relevant to the service sector for low GWP and what is required in the future.

1. **Summary of present status of the country to handle low GWP technologies and Recommendations for service sector to prepare for implementation of the Kigali Amendment (to be included as a chapter to the country assessment activity)**

* Situational analysis of the various components mentioned above, identify the barriers and assess the gaps that would need to be filled to handle low GWP technologies in the country (e.g. TVET training, technical issues and infrastructure issues, availability of tools, certification & licensing, Standards/Code of practice etc.)
* Present capacity building /training activities for service sector undertaken by the NOU, UNEP or other agencies and requirements needed for including low GWP technologies during HFC phase-down (extra topics and practical session required, training materials, master trainers and trainer’s capacity etc.)
* Recommendations on the training/capacity building strategy for formal and informal service sector during HFC phase-down.
* Overall recommendations on refrigeration servicing needs for HFC phase-down.