

TERMS OF REFERENCE

Local Technical Consultant on GHG Emissions Measurement, Reporting and Verification (MRV) for buildings

Project: “Nationally Appropriate Mitigation Actions (NAMAs) for low-carbon end-use sectors in Azerbaijan”

Location:	Baku, Azerbaijan
Application Deadline:	14 November 2018 COB
Type of Contract:	Individual Contract
Post Level:	Local (Azerbaijani) Consultant
Languages Required:	English/Azerbaijani / Russian would be an asset)
Expected Starting Date:	26 November 2018
Period of Contract:	Initially 12 months (November 2018 to November 2019)

Background of Project

Project’s objective is to reduce the annual growth rate of GHG emissions from the energy end-use sectors. The project, which began in March 2015, targets 3 (three) energy end-use sectors, namely Buildings, Transport and Associated Gas Capture. The specific objective of project is to support State Oil Company of Azerbaijan Republic (SOCAR) in the implementation of its Climate Change Mitigation Strategy by promoting and upscaling green-house-gases (GHG) mitigation measures through a programmatic NAMA approach in the low carbon end-use sectors. SOCAR, being in the core business of oil & gas production, processing and distribution, is a major energy user and GHG emitter, and is the main stakeholder of project and implementing partner. The project also broadly aims to improve the country’s institutional & policy framework, address appropriate mechanisms and result in activities to realise significant GHG emission reduction achievements in the long term. The other key institutional stakeholders for this project are as listed below:

- Ministry of Ecology and Natural Resources (MENR);
- National Climate Change Centre (NCCC);
- Ministry of Energy of the Republic of Azerbaijan.

The “Energy Efficient Buildings” component of the project is improving the energy utilization efficiency in buildings by promoting the energy conserving design of new buildings and enhancing the efficiency in the operation of existing buildings. The realization of this objective is facilitated through the demonstration of building energy efficiency technologies, systems, and practices. The “Sustainable Transport” addresses fuel economy in SOCAR’s vehicles fleet by introducing alternative energy sources resulting in a lower energy intensity of the transportation sector. Technological and market opportunities for improving the current fuel mix that is 98% dependent on gasoline and diesel engines will help in reducing the energy intensity of transport sector. The aim of “Associated Gas Capture” component is to recover low-pressure associated gas from the oil wells in Siyazanneft Oil and Gas Production Unit and to collect, compress and transport it to a gas processing plant. The processed and clean gas will be provided to the gas grid and utilized by nearby villages and communities to supply family houses as well as production facilities (e.g. chicken farms) with heating and cooking fuel. Significant physical progress has already been made on the buildings and transport components. The gas-capture component was recently launched and various options to be pursued are being studied in detail by SOCAR with the participation of an individual international expert.

Monitoring, Reporting and Verification (MRV)

The Copenhagen Accord – which is a political agreement struck by world leaders at the 2009 U.N. Climate Change Conference in Copenhagen, calls on participating countries to pledge specific actions they will undertake to mitigate greenhouse gas emissions – states that for supported NAMAs, GHG emissions inventory should be provided along with their verification, through international consultation and analysis. This will allow greater transparency of mitigation actions in the following ways:

- a) An accurate and comparable estimation of mitigation efforts in meeting targets.

- b) The matching of mitigation efforts to international support, i.e. ensuring that the international support being provided is leading to measurable reductions in GHGs.
- c) Capacity building in the area of data collection, database development and management.

MRV is a general term describing the process of measuring and collecting data on greenhouse gas (GHG) emissions or mitigation actions, compiling and reporting this information to a respective program, and then subjecting this reported data to a third-party review and verification. Depending on the objectives and nature, MRVs can be grouped into three main categories:

- MRV of GHG emissions/inventory: MRVed absolute amount of GHG emissions;
- MRV of mitigation actions/NAMAs: MRVed GHG emission reduction of the specific NAMAs;
- MRV of support: MRVed climate financial flow/technology transfer/capacity building support.

The focus of this consulting assignment will be foremost on Type II, i.e. the MRV of mitigation actions /NAMAs. Some Type I MRV is also involved so that SOCAR continues to enter data relating to NAMAs – namely in the buildings, transport and gas-capture sectors – to be undertaken in the future.

MRV Methodology of the Project

While SOCAR has undertaken several mitigation actions in its main-stream vertically integrated oil and gas business, the efforts to reduce emissions in the large building stock and vehicle fleet in its use is relatively recent. As a result, prior to the start of this project the potential of reducing GHG emissions due to the carbon foot-print of buildings and vehicles has not been estimated. The capture of associated gas emitting from oil-wells has been undertaken where the cost-benefits are high but several other oil-wells are in need of newer technologies at a higher cost in order to capture and utilize the associated gas. For this component too, the GHG emission reductions have not been specifically targeted before this project. By undertaking the MRV of GHG emission reductions from these 3 (three) NAMAs under the project, SOCAR will be able to gain access to larger funding sources viz. international “green” and “climate change mitigation” Funds that can be applied toward GHG reductions on a wider scale throughout the organization.

In order to capture the results of the NAMAs that are currently being undertaken in the buildings, vehicles and gas capture sectors, a team of 3 experts is to be engaged on the project. A short-term International MRV Consultant will guide the overall effort and will closely work with two local consultants – who are being engaged under 1-year contracts initially – to meet this objective. This TOR is for a Local Building Technical Expert (LTE-buildings) who will perform as one of the members of this MRV team. The process to hire a Local Transport Technical Expert (LTE-transport) is being initiated separately. Together, the team will develop an MRV system that will register the emission reductions from on-the-going NAMAs and have the provision to update reductions on a continued basis. The team will also carry out the task of reviewing and further developing the NAMAs registry system in SOCAR.

The MRV system to be developed will be based on two broad indicators – *impacts* and *progress*. The MRV of *impacts* will monitor the achievement of objectives through impact indicators viz. tCO₂e reduced, reduction in energy consumption, GHG abatement cost, etc. The MRV of *progress* will assess the extent to which the planned NAMA activities are implemented in comparison with the targets given in the Project Results Framework. *Progress* indicators are to include: (i) key data about buildings that are being retrofitted with Energy Management Measures (EMMs), (ii) drivers and vehicles whose performance was improved through training and replacement, respectively, and (iii) data about gas-capture from oil-wells. The *progress* is also to be measured by the number of studies and analyses and types of trainings which are being delivered under the project

Duties and Responsibilities

With technical guidance of International MRV Consultant and under the supervision of Project Manager, the LTE-buildings shall be responsible for carrying out the MRV of *progress* (see above) on the NAMA “Green Building Program in SOCAR”. The tasks of the LTE-buildings include but is not limited to the following:

1. Carrying out an identification record of the buildings selected for the NAMA “SOCAR’s Green Building Program” which includes the following information:
 - Specific location;
 - Construction and commissioning year;
 - Date of last repair / reconstruction, if any;
 - Number of storeys;
 - Floor-area, m²;
 - Climatic zone¹;
 - Source of heat supply (e.g. individual boiler, boiler-room or district heating), energy carrier (e.g. natural gas, mazut).
2. Collecting data for developing baseline of the NAMA “SOCAR’s Green Building Program” including:
 - Quantity of electricity to be consumed in year, kWh/yr;
 - Emission factor for electricity generation, kgCO₂/kWh;
 - Heat consumption for heating (and hot water supply) of building, kWh/yr;
 - Average technical transmission and distribution losses for providing electricity;
 - Annual consumption of fossil fuel type k of baseline / NAMA building in year y;
 - Average net calorific value of fossil fuel type k used, GJ/mass or volume unit;
 - Emission factor of fossil fuel, kgCO₂/MJ or tCO₂/1000 m³ or ton;
 - Fuel consumption of an individual boiler, mass or volume unit;
 - Efficiency factor of boiler rooms supplying thermal energy to buildings, %;
 - Efficiency of thermal power generation at CHPP;
 - Floor-area of buildings.
3. Data collection for energy-efficient buildings built or reconstructed within the framework of NAMA for a cold (heating season) and a warm period of time including:
 - Quantity of electricity to be consumed in year, kWh/yr;
 - Emission factor for electricity generation, kgCO₂/kWh;
 - Heat consumption for heating (and hot water supply) of building, kWh/yr;
 - Average technical transmission and distribution losses for providing electricity;
 - Annual consumption of fossil fuel type k of baseline / NAMA building in year y;
 - Average net calorific value of fossil fuel type k used, GJ/mass or volume unit;
 - Emission factor of fossil fuel, kgCO₂/MJ or tCO₂/1000 m³ or ton;
 - Fuel consumption of an individual boiler, mass or volume unit;
 - Efficiency factor of boiler rooms supplying thermal energy to buildings, %;
 - Efficiency of thermal power generation at CHPP;
 - Floor-area of buildings.
4. GHG emission calculation including:
 - Baseline emissions;
 - NAMA emissions;
 - Emission reduction.
5. Preparation of monitoring report for the NAMA.

¹ Climatic zone is defined by gradation in terms of the number of degrees-days for heating and non-heating periods.

6. Preparation of data and documents required for verification.

In addition to above tasks, the LTE-buildings shall provide inputs for the completion of annual, mid-term and final evaluation reports, and general information collection according to UNDP/GEF monitoring and evaluation requirements. He/she shall also participate in training workshops. Finally, he/she shall provide full support to the International MRV Consultant viz. collecting and providing required data.

Timeframe of the assignment

The local technical expert will be engaged under the Individual Contract, immediately after the completion of the selection process. The initial contract will be for a period of twelve months on a full-time basis, and is expected to start on 26 November 2018. Any further contract extensions will be subject to the overall performance as evaluated jointly by the Project Manager and International MRV Consultant.

Deliverables

- By 31st December 2018: Carrying out an identification record of the buildings selected for the NAMA “SOCAR’s Green Building Program” (20%)
- By 1st March 2019: Collecting data for developing baseline and calculating GHG emissions (20%)
- By 1st May 2019: Collecting data for the NAMA buildings for cold period and calculate GHG emissions (20%)
- By 1st July 2019: Collecting data for the NAMA buildings for warm period and calculate GHG emissions (20%)
- By 1st October 2019: Preparing monitoring report and evidence base for verification (20%)

Required Skills and Experience

Qualifications:

- Post Graduate Degree in engineering, environmental management or any other qualification in relevant field.
- Background in the field of energy management relating to one or more of the NAMAs covered by the project.

Experience:

- Minimum of 7 years’ direct experience in the management and development of medium to large scale energy efficiency projects including project cost estimating.
- Minimum 2 years’ experience of design or construction aspects related to energy such as energy engineering, energy management, and sustainable design.
- Minimum 2 years’ experience in the design and evaluation of building energy systems and controls or in oil/gas fields operations is highly preferred.
- Minimum 2 years’ experience in making assessments and testing/commissioning of energy systems for medium-size industrial and commercial facilities.
- Strong experience of preparing project reports and other program or technical documentation.

Competencies:

- Demonstrates integrity and fairness by modeling UN values and ethical standards;
- Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability;
- Excellent communication skills; Excellent analytical skills; Strong oral and writing skills;
- Extensive knowledge of computer applications;
- Focuses on result for the client and responds positively to feedback;
- Consistently approaches work with energy and a positive, constructive attitude;
- Ability to work independently as well as part of a team; Ability to operate under strict time limits.
- Language: Fluency in English and/or local languages is a must.

Submission of applications

Interested individuals are requested to submit their applications by 14 November, 2018 COB, along with the names and contact information of at least 3 references who are familiar with recent work.

UNDP is committed to achieving workforce diversity in terms of gender, nationality and culture. Individuals from minority groups, indigenous groups and persons with disabilities are equally encouraged to apply. All applications will be treated with the strictest confidence.