

## **Terms of Reference**

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

Position: Local Technical Consultant (LTC) for gas capturing component of NAMA project

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

Type of contract: Individual Contract

Period of contract: **One Year** (01 June 2018- 31 May 2019)

Starting date: 01 June

Deadline for application: 23 May 2018

Location: Baku, Azerbaijan, Siyazanneft

### **Background**

The “Nationally Appropriate Mitigation Actions (NAMAs) for low-carbon end-use sectors in Azerbaijan” Project’s objective is to reduce the annual growth rate of GHG emissions from the energy end-use sectors. The project will target 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 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 greenhouse gases (GHGs) emitter and will act as the main stakeholder of project and implementing partner to further the company’s long-term sustainable development strategy. It will simultaneously target the country’s institutional & policy framework, address appropriate mechanisms and result in activities to realize significant GHG emission reduction achievements in the long term. Individual international experts to carry out the study and implementation of Buildings and Transport activities are already on-board and performing their work.

For the Associated Gas Capture component, an international individual consultant (IC) is already a part of the team. To assist her in carrying out the activities on this component the need has been identified to engage a local technical consultant (LTC) specialized and experienced in associated-gas capturing technology and familiar with gas separation and its effective utilization. SOCAR currently uses technologies that makes the capturing process highly inefficient and not economically feasible. In order to avoid large amounts of gas leakages in the future, modern technology and practice need to be applied to significantly improve the current gas collection & production regime at SOCAR’s on-shore wells. These leakages are primarily Methane gas emissions, which have an enhanced effect on climate change because methane has

a climate forcing effect 25 times greater on a 100 year basis than that of carbon dioxide, the primary greenhouse gas (GHG). Methane's impact is almost three times greater on a 20 year basis and there is research that may cause both factors to be further increased.

## **Objective**

The oil wells, in addition to producing crude oil, also produce some amount of natural gas. The associated gas discharged at the wellhead is often captured and sent to the transmission network for sending it for distribution to consumers. However, as there is no existing transmission network in the area of Siyazanneft oil-field, the options are for gas to be either vented or flared. The aim of "Associated Gas Capture" component is to apply the best available technology to plug the venting of low pressure associated gas by capturing it and compressing and transporting it to a gas processing plant. This can be done by adding the leaking gas to the gas grid in the proximity of oil-field or, alternately, directly distributed to nearby communities.

The households and small-sized industry/businesses in the neighbourhood of Siyazanneft oil-field mostly use wood or very expensive kerosene and LPG in low-quality stoves. By replacing these fuel-sources, which have a relatively large Carbon footprint, a more efficient fuel source will become available to the area's residents. There will thus be a two-fold benefit, namely (i) reduction of GHGs being added to the atmosphere and (ii) recovery and use of captured gas as a fuel to replace fuels viz. wood, LPG, kerosene, etc.

## **Duties and Responsibilities**

The main thrust of LTC's effort will be to support the development of a pilot program for capturing gas leakages in Siyazanneft oil-field and directing the gas for use by end consumers living in 12 nearby villages (approximately 600 households comprising of a population of 2,500) to meet their heating and cooking needs and (if viable) produce electricity.

The LTC will work closely with and assist the international Individual Consultant (IC) who is leading the design and implementation of Associated Gas Capture component of the subject project. The LTC shall carry out technical support activities under the supervision and day-to-day guidance of the Project Manager. The Technical Consultant will be responsible for the supporting the introduction of new technologies and techniques to capture the gas leakages and direct them for alternative productive use(s), as appropriate, including:

- Preparation and/or supervision of the preparation of technical documents and inputs, guideline papers, power-points and other presentation materials related to gas capturing;
- Ensuring and maintaining application of gas standards for engineering, construction, operations and maintenance of gas distribution systems;
- Providing technical support during the installation of distribution system and work closely with field engineering representatives, the gas construction supervisors, and other entities;

- Undertaking comparative analysis of the efficiency of capturing equipment operated under the project and by other SOCAR facilities;
- As required, reviewing documents and providing technical feedback in English;
- Carrying out five field trips to Siyazanneft per year, each two days long (if additional trips are required during the assignment this will be covered separately according to UNDP rules.).

## **Deliverables**

- 1) Prepare and present a report that gives the comparison of available gas-capturing technologies as applicable to Siyazanneft oil-field and the newly installed technologies (25%);
- 2) In addition to monthly supervision and monitoring reports, submit a semiannual supervision and monitoring report presenting the status of the implementation of a pilot program to capture gas and its delivery to end users in the surrounding areas (25%);
- 3) Provide technical support during the construction and installation of gas transmission and distribution network (25%);
- 4) Support the assessment of potential and application of the results of pilot program to other on-shore oilfields in Azerbaijan (25%).

## **Required Skills and Experience**

### **Education**

- Bachelor or Master's Degree in Engineering or other closely related field with main focus on oil and gas industry and energy systems.

### **Experience**

- At least 5 years' experience as engineer/ design consultant or operator in petrochemical sector in Azerbaijan;
- Strong knowledge of best practices in the project related fields, state of the art techniques and best approaches in the capture of associated gas in on-shore oil-fields;
- Strong knowledge in preventing of flaring or venting of associated gas leakages in oil fields;
- Detailed knowledge of gas separation technologies;
- Knowledge and experience with process control valves, electronic/pneumatic valve controls and complex control applications;
- High technical fluency with ability to communicate effectively with leading Technical Consultants;
- Knowledge of key issues relating to Azerbaijan's agenda of Climate Change prevention and mitigation.

### **Language**

- Fluency in Azeri language
- Knowledge of English is desirable

**Competencies**

- Demonstrates integrity by modelling the UN's values and ethical standards;
- Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability;
- Good problem-solving skill required;
- Demonstrates good oral and written communication skills;
- Ability to travel, work efficiently in a team, and reporting;
- Consistently approaches work with energy and a positive, constructive attitude