United Nations Development Programme

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Terms of reference

Job title: Technical Reviewer of National Greenhouse Gas (GHG) Inventories – Energy Sector
Duty Station for International Consultant: Home based (with 2 missions in Chisinau, Moldova)
Contract type: Individual Contract (IC)
Expected workload: Estimated 20 consultancy days over the period 12 October - 18 December 2015

BACKGROUND

The UNDP Low Emission Capacity Building (LECB) Global Programme has two overall objectives:

1. to build public sector capacity on developing greenhouse gas (GHG) national inventory systems, nationally appropriate mitigation actions, low-emissions development strategies, and monitoring, verification, and reporting procedures; and
2. to build private sector capacity for mitigation actions in selected sectors.

The Global Programme, which is funded by the European Commission and the governments of Germany and Australia, is under implementation in 25 countries around the world, inclusive in the Republic of Moldova.

UNDP Moldova together with the Climate Change Office of the Ministry of Environment (MoEN) is implementing the LECB Project – Republic of Moldova.

In the Republic of Moldova the scope of the LECB project is to increase institutional capacities to provide appropriate mechanisms of support and coordination when addressing climate risks, to strengthen the technical knowledge in order to better understand and make use of climate information, and increasing relevant data and access to data for planning and decision-making.

The main project objectives are:

i) to strengthen the institutional and technical capacity of the Republic of Moldova to develop a National Inventory System to support the development of national GHG inventory on a regular basis;

ii) to identify and formulate Nationally Appropriate Mitigation Actions (NAMAs) in the context of the national Low Emission Development Strategy (LEDS); and

iii) to measure/monitor, verify and report (MRV) progress on NAMAs and LEDS implementation.

Under the first project objective the following four main outputs have been set:

1) The National Inventory System institutionalized through a legislative/normative act;
2) A 'National Inventory System Report' developed following the U.S. EPA's Template Workbook 'Developing a National GHG Inventory System' (available on the U.S. EPA's website: www.epa.gov/climatechange/emissions/ghginventorycapacitybuilding);
3) Level of knowledge of the national experts and partner institutions involved in the development of GHG Inventory for Energy and LULUCF Sectors enhanced.
4) A data management system for tracking and archiving the inventory information used in each inventory cycle in place.

The implementation of project objectives will support the Republic of Moldova to prepare high quality National Communications (NCs) and Biennial Update Reports (BURs) to be submitted to the UNFCCC timely (i.e. once in four years in case of NCs and once in two years in case of BURs).

As GHG inventories are a key component of both the NCs and BURs, there are opportunities under the LECB Project, on the one hand - for peer reviewing the most relevant chapters of the last available draft National Inventory Report (NIR) before its submission to the UNFCCC as an Annex of the Initial Biennial Update Report (BUR1) and its review by the ICA; and on the other hand – for enhancing the level of knowledge of the national experts and partner institutions involved in the development of national GHG Inventory, specifically in the light of the findings of the peer review exercise to be undertaken and of the recommendations for inventory improvements to be further considered in the process of developing the Fourth NC of the Republic of Moldova under the UNFCCC.

In this regard, UNDP is seeking the expertise of a Technical Reviewer to:

- Perform the peer review of national GHG inventory – Energy Sector and of Chapter 3 'Energy Sector' of the draft 'National Inventory Report: 1990-2013, Greenhouse Gas Sources and Sinks in the Republic of Moldova' before submission to the UNFCCC; and
- Enhance the professional knowledge and skills of the national experts and institutions involved in the development of GHG Inventory for Energy Sector through a 3-day training, following the peer review findings and recommendations.

The consultant will submit the final report to UNDP Moldova and work under direct supervision of the LECB Project Managers and the leader of the GHG Inventory Working Group, in cooperation with the energy sector national consultants.

SCOPE OF WORK

The focus of this assignment is to:

(1) perform a peer review of the national GHG inventory – Energy Sector and of Chapter 3 'Energy Sector' of the draft 'National Inventory Report: 1990-2013, Greenhouse Gas Sources and Sinks in the Republic of Moldova' before its submission to the UNFCCC; and

(2) perform a 3-day training of the national experts and institutions involved in the development of GHG Inventory for Energy Sector, considering specifically as main background materials:
   a. the CGE Training Materials for the Preparation of National Communications from non-Annex I Parties;
   b. the GCE Supplementary Training Material for the Team of Technical Experts, Module 2.2a 'Background material: National Greenhouse Gas Inventories – Energy Sector';
   c. the tools and training materials for non-Annex I reporting;
   d. the training programme for review experts for the technical review of greenhouse gas inventories of Parties included in Annex I to the Convention; and
   e. the peer review findings and recommendations.

DUTIES AND RESPONSIBILITIES

Peer Review of National GHG inventory – Energy Sector

Under the supervision of the LECB Project Manager and GHG Inventory Team Leader, and in close cooperation with the energy sector national consultants, the reviewer will conduct a detailed peer review assessment of the national GHG inventory, specifically focusing on energy sector and information provided in Chapter 3 'Energy Sector' of the draft 'National Inventory Report: 1990-2013, Greenhouse Gas Sources and Sinks in the Republic of Moldova'.

S/he is responsible for producing a timely Peer Review Report of high quality, conforming in extent possible to overall standards set in the UNFCCC Annex I inventory review guidelines and the corresponding template of the 'Report on the individual review of the annual submission of Annex I Parties'.

The reviewer will examine the data, methodologies and procedures used in preparing the national inventory for the energy sector. The reviewer is required to pay particular attention to key categories,

progress in the implementation of any planned improvements, and where recalculations and other changes have been reported.

The reviewer will verify that the data has been calculated transparently, checking also for calculation errors when spreadsheets are provided, and will identify areas for improvement or further work. The reviewer will highlight any errors, inconsistencies and data gaps and will provide comments on discrepancies in the inventory, including explanations of the possible sources of error. The reviewer will also provide written references of the data sources used to review the inventory.

The reviewer should follow to the extent possible the UNFCCC Annex I inventory review guidelines and the corresponding template of the 'Report on the individual review of the annual submission of Annex I Parties', specifically the 'Energy Sector' and 'Conclusions and recommendation' sections.

In above mentioned context, the Peer Review Report must contain tentatively the following sections:

1. Sector Overview: it will provide an general overview on the completeness, consistency, and transparency of the national GHG inventory for energy sector;
2. Reference and sectoral approaches: it will provide a review of the information reported under the reference approach and the sectoral approach, as well as comparisons with other sources of international data, if any exist.
3. Key categories: it will include a detailed assessment of the inventory for each key category.
4. Non-key categories: it will include a detailed assessment of the inventory for most relevant non-key categories.
5. Final conclusions and recommendations: it will include the main conclusions and recommendations to improve the inventories, inclusive for such categories as: transparency and comparability; completeness; recalculations and time series consistency; reference and sectoral approaches; international bunker fuels; stationary combustion: solid, liquid and gaseous fuels – CO_2, N_2O and CH_4; mobile transportation: liquid fuels – CO_2, N_2O and CH_4; oil and natural gas – CH_4 and CO_2.

The reviewer will prepare a Peer Review Report of approximately 8-12 pages, depending on the quality of the inventory peer reviewed.

Training of the national experts and institutions involved in the development of GHG Inventory – Energy Sector

Under the supervision of the LECB Project Manager and GHG Inventory Team Leader, the international consultant will perform a 3-day training of the national experts and institutions involved in the development of GHG Inventory for Energy Sector, considering specifically:

1. the CGE Training Materials for the Preparation of National Communications from non-Annex I Parties (http://unfccc.int/national_reports/non-annex_i_natcom/training_material/methodological_documents/items/349.php);
2. the GCE Supplementary Training Material for the Team of Technical Experts, Module 2.2a 'Background material: National Greenhouse Gas Inventories – Energy Sector';
3. the tools and training materials for non-Annex I reporting (http://unfccc.int/national_reports/non-annex_i_natcom/training_material/methodological_documents/items/7914.php);
4. the training programme for review experts for the technical review of greenhouse gas inventories of Parties included in Annex I to the Convention (http://unfccc.int/national_reports/training_for_review_of_annex_i_parties/items/2763.php);
5. the peer review findings and recommendations.

Target Audience and Objective of the Training Materials

The training materials to be developed and used should be suitable for national consultants with beginner to intermediate level knowledge of national GHG inventory (energy sector) development.

Following this thematic training, the target audience should:

- Have an overview of how emissions inventories are developed for the energy sector (fuel combustion and fugitive emission);
- Have a general understanding of the methods available, as well as of the main challenges in that particular areas;
- Be able to determine which methods suits the Republic of Moldova's situation best; and
- Know where to find more detailed information on the topics discussed.

The tentative content of the training material would include the following:

1. Background and training course objectives
2. Energy sector overview
3. Energy sector emission processes
    - 3.1. Carbon dioxide emissions from fuel combustion
    - 3.2. Non-carbon dioxide emissions from fuel combustion
    - 3.3. Fugitive greenhouse gas emissions
4. Methods to estimate greenhouse gas emissions from the energy sector
    - 4.1. Introduction
    - 4.2. Carbon dioxide emissions from stationary combustion
        - 4.2.1. Decision tree for estimating carbon dioxide from fuel combustion
        - 4.2.2. Tier 1 method: the reference approach and sectoral approach for carbon dioxide emissions
        - 4.2.3. Higher tier methods
    - 4.3. Non-carbon dioxide emissions from stationary combustion
        - 4.3.1. Decision tree for non-carbon dioxide emissions from stationary combustion
        - 4.3.2. Tier 1 method
        - 4.3.3. Higher tier methods
    - 4.4. Mobile combustion: road transportation
        - 4.4.1. Decision trees for road transportation
        - 4.4.2. Tier 1 method
        - 4.4.3. Higher tier methods
    - 4.5. Mobile combustion: rail transportation
        - 4.5.1. Decision trees for rail transportation
        - 4.5.2. Tier 1 method
        - 4.5.3. Higher tier methods
    - 4.6. Mobile combustion: water-borne transportation
        - 4.6.1. Decision tree for water-borne transportation
        - 4.6.2. Tier 1 method
        - 4.6.3. Higher tier methods
        - 4.6.4. Defining international or domestic marine transport
    - 4.7. Mobile transport: aircraft
        - 4.7.1. Decision tree for aircraft
        - 4.7.2. Tier 1 method
        - 4.7.3. Tier 2 and tier 3 method
        - 4.7.4. Defining international or domestic aviation
    - 4.8. Fugitive emissions from coal mining
        - 4.8.1. Decision trees for fugitive emissions from coal mining and handling
        - 4.8.2. Tier 1 method
        - 4.8.3. Tier 2 and tier 3 methods
    - 4.9. Fugitive emissions from oil and gas operations
        - 4.9.1. Decision trees for oil and gas operations
        - 4.9.2. Tier 1 method
        - 4.9.3. Tier 2 and tier 3 methods
5. Sector specific issues
    - 5.1. Bunker fuels
    - 5.2. Biomass fuels
    - 5.3. Interaction with industrial processes sector
    - 5.4. Interaction with waste and LULUCF sectors
    - 5.4. Autoproduction of electricity
    - 5.5. Fuel use for military purposes
    - 5.6. Mobile sources in agriculture
    - 5.7. Accounting for carbon dioxide and non-carbon dioxide emissions in biomass use for energy
        - 5.7.1. Biomass combustion in the waste sector

5.7.2. Non-carbon dioxide emissions such nitrous oxide emissions from waste incineration
5.7.3. Carbon dioxide and non-carbon dioxide emissions from fuel combustion in cement kilns

6. Quality control and completeness
7. Uncertainty
8. UNFCCC software and reporting tables
9. Reference material

The training materials should be developed on the basis of methodologies developed by the IPCC:

- Revised 1996 IPCC guidelines for national GHG inventories
- IPCC good practice guidance and uncertainty management in national GHG inventories
- 2006 IPCC Guidelines for national GHG inventories

As during the next inventory cycle there is the intention to start use in more extent the 2006 IPCC Guidelines, a special attention should also be paid during the training to the differences between the Revised 1996 IPCC guidelines for national GHG inventories and the 2006 IPCC Guidelines for national GHG inventories.

MAIN OUTPUTS AND DELIVERABLES

The international consultant will submit the final report to UNDP Moldova and work under the direct supervision of LECB Project Managers and leader of the GHG Inventory Working Group. S/he will be responsible for:

1. Undertaking a home based desk review of the National GHG Inventory – Energy Sector and of the Chapter 3 'Energy Sector' of the draft 'National Inventory Report: 1990-2013, Greenhouse Gas Sources and Sinks in the Republic of Moldova' (to be provided in English) and submit a preliminary list of questions to the national inventory team, **by 19 of October 2015**;
2. Conducting an in-depth peer review of the National GHG Inventory – Energy Sector and Chapter 3 'Energy Sector' of the draft 'National Inventory Report: 1990-2013, Greenhouse Gas Sources and Sinks in the Republic of Moldova' during his/her first in-country mission, **to be organized in the week of 2-6 November 2015**;
3. Document the findings in the Peer Review Report and send the zero order draft to the national inventory team for comments, **by 13 of November 2015**;
4. Delivering background training materials, presentations, exercises and case studies on Energy Sector (Fuel Combustion and Fugitive Emissions) during a 3 days training workshop, **organized in the week of 23-27 November 2015**, with the purpose of enhancing the professional knowledge and skills of the national experts and institutions involved in the development of GHG Inventory for Energy Sector; and
5. Providing the final report on undertaking activities, inclusive the final version of the Peer Review Report, considering the feedback received from the national inventory team, and the training workshop report **by 14 December 2015**.

All deliverables should be presented in a final, edited and publishable format, including all references.

Travel arrangements

Two in-country missions to the Republic of Moldova, Chisinau City are expected:

- During the first in-country mission (around 5 working days within 2 to 6 November 2015) consultant will undertake an in depth peer review of the National GHG Inventory – Energy Sector and Chapter 3 'Energy Sector' of the draft 'National Inventory Report: 1990-2013, Greenhouse Gas Sources and Sinks in the Republic of Moldova'; and
- During the second in-country mission (around 5 working days within 23 to 27 November 2015) consultant will undertake a 3-day training workshop organized with the purpose of enhancing the professional knowledge and skills of the national experts and institutions involved in the development of GHG Inventory for Energy Sector.

Institutional arrangements

- The consultant will report to UNDP Moldova through the LECB Project Manager and the GHG Inventory Team Leader;
- The estimated level of effort is approximately 20 days, spread between 12 October to 18 December 2015;
- The contract assignment will be for a fixed all-inclusive daily fee;
- The consultant will be given access to relevant information necessary for execution of the tasks under this assignment; and
- Payments will be made per deliverable upon satisfactory delivery and acceptance by the UNDP Moldova and LECB Project Managers. If the quality does not meet standards or requirements, the consultant will be asked to rewrite or revise (as necessary) the document before proceeding to payment.

Payments schedule

The payment for the provided services will be carried out in several instalments based on accepted deliverables:

- 20% upon finalization of the first in-country mission;
- 20% upon submitting the first zero order draft Peer Review Report;
- 20% upon finalization of the second in-country mission and providing the background training materials, presentations, exercises and case studies on Energy Sector during a 3 days training workshop; and
- 40% upon submission and approval of the final report on undertaking activities, inclusive the final version of the Peer Review Report and the Training Workshop Report.

Qualifications

Education

- Master's Degree or equivalent (5-year university education) in energy, statistics and climate change related fields.

Experience

- At least 10 years of demonstrated experience in application of IPCC methodologies for preparation of GHG inventories - energy sector;
- At least 5 years of demonstrated experience in providing technical review services of national GHG inventories (energy sector) and inventory system products, including national inventory reports, national communications and biennial reports;
- At least 3 years of demonstrated experience in designing and/or providing professional trainings for the GHG Inventory staff;
- Proven experience in working with international or local organizations on similar assignments (successful experience in working with UN agencies) is an asset.

Competencies

- Demonstrated comprehensive technical knowledge related to estimation and technical review of national GHG inventories;
- Strong analytical, reporting, and writing abilities;
- Openness to change and ability to receive/integrate feedback;
- Ability to plan, organize, implement, and report on work;
- Ability to work under pressure and tight deadlines;
- Demonstrates integrity and ethical standards;
- Positive, constructive attitude to work;
- Excellent human relations, coordination, planning and team work skills;
- Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability;
- Proven commitment to the core values of the United Nations, in particular, respecting differences of culture, gender, religion, ethnicity, nationality, language, age, HIV status, disability, and sexual orientation, or other status.

UNDP Moldova is committed to workforce diversity. Women, persons with disabilities, Roma and other ethnic or religious minorities, persons living with HIV, as well as refugees and other non-citizens legally entitled to work in the Republic of Moldova, are particularly encouraged to apply.

Language

- Proficient in written and spoken English;
- Knowledge of Romanian and/or Russian is a distinct asset.

Documents to be included when submitting the proposals

Documents required

Interested individual consultants must submit the following documents/information to demonstrate their qualifications:

1. Technical Proposal - explaining how applicant responds to each of the qualification requirements and why s/he is the most suitable for the work (particularly providing details on the previously implemented similar assignments and previous experience in the fields related to this consultancy as described in the terms of reference).
2. Personal information (CV and/or Personal History Form / P11) including records of past experience in similar assignments and concrete outputs obtained with three references.
3. Financial proposal (in USD, specifying a total lump sum amount).

Financial proposal

The financial proposal shall specify a total lump sum amount, and payment terms around specific and measurable (qualitative and quantitative) deliverables.