
Terms of Reference
Egypt Fourth National Communication Project (NC4-Egypt)
Preparing GHGs Inventory chapter in National Communication Report
National Sectoral GHGs Inventory Experts

1. Background

The Fourth National Communication Project (NC4Egypt) was launched in March 2018 and it's implemented under the supervision of Egyptian Environmental Affairs Agency (EEAA) and the United Nations Development Program (UNDP) and the funded by the Global Environment Facility (GEF) to help Egypt better understand the current and expected impacts of climate change in the different sectors, identify opportunities for mitigation interventions and recommend adaptation measures to climate change.

According to Article 4, paragraph 1, and Article 12, paragraph 1 of the United Nations Framework Convention on Climate Change (UNFCCC), each Party shall communicate to the Conference of the Parties (COP), through the secretariat, the following elements of information: (a) a national inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, to the extent its capacities permit, using comparable methodologies to be promoted and agreed upon by the COP; (b) a general description of steps taken or envisaged by the Party to implement the Convention; and (c) any other information that the Party considers relevant to the achievement of the objective of the Convention and suitable for inclusion in its communication, including, if feasible, material relevant for calculations of global emission trends.

Egypt as a non-Annex I Party to the Convention has prepared and submitted its Initial, Second and Third National Communications in 1992, 2010 and 2016 respectively. In 2015, Egypt has submitted a report on the Egyptian Intended Nationally Determined Contributions (INDCs) towards achieving the objectives of the United Nation Framework Convention on Climate Change (UNFCCC) in accordance with Decisions 1/CP.19 and 1/CP.20. In 2019, Egypt has submitted its First BUR (BUR1) to the UNFCCC, Also, Egypt has developed the Low Emission Development Strategy (LEDS).

2. Objective

The national GHG inventory is a key element of the national communication to the UNFCCC. In the context of the UNFCCC, it is a comprehensive listing by source of annual GHG emissions and removals resulting directly from human activities for one year or a number of years. It comprises compiling of emissions and removals of Greenhouse Gasses of major sectors such as Energy, Industrial Process & Product Use, Agriculture, Forestry & Other Land Use (AFOLU) and Waste.

In this purpose, the project aims to hire a **Team of Experts (comprising of 4 experts)** in order to cover the following areas in the GHGI report in preparation of GHG inventory for Egypt Fourth National Communication (NC4-Egypt) in collaboration with all the relevant stakeholders in accordance with the GHG Inventory Preparation Guideline developed by UNFCCC and IPCC.

1. Energy sector (including Transport Sector)
2. Industrial Process & Product Use (IPPU)
3. Agriculture, Forestry & Other Land Use (AFOLU)
4. Waste sectors

This exercise will be based on 2016/2017 data and information using 2006 IPCC Guideline. All tasks related to the GHG inventory preparation to be carried out in close communication and collaboration with a hired Team Leader and the NC4Egypt Project Manager in coherent and transparent manner

The Team of Experts will suspect the effective delivery of the activities of the assignment by administrating, executing and supporting day-to-day implementation consistent with UNDP rules and regulations. The team will be led by GHG Inventory Team Leader appointed by the project to coordinate the inputs of the members of the team and prepare the consolidated report, please find attached the TOR for the Team Leader

Position	Estimated number of INDICATIVE Working Days
KE1- Energy and Transport Sector	30
KE2- IPPU Sector	20
KE3- AFOLU Sector	15
KE4- Waste Sector	15

3. Scope of Work

Tasks related to the consultants each in his/her sector:

Under the direct supervision of the GHG inventory Team Leader, the sectoral experts will conduct the following tasks;

- Review previous reports and estimations of GHGI in Egypt, particularly the BUR1 report.
- Collect/gather all the necessary information and data required to prepare the GHG inventory on Energy/Transport, Industrial Processes & Products Use, Agriculture, Forestry & Other Land Use (AFOLU) and Waste sectors.
- Identify key stakeholders in the process and make necessary arrangement for institutional setup of preparation of the inventory.
- Major GHGs such as CO₂, CH₄, N₂O and other indirect GHGs like HFCs, PFCs and SF₆ as well as CO, NO_x, SO_x and NMVOCs should be calculated as per the Guidelines of UNFCCC and IPCC.
- Calculate sector-wise GHG emissions and validate them by using standardized methodologies on GHG inventory preparation.

- Submit GHG Inventory prepared by using technical guidelines developed by UNFCCC and IPCC on GHG inventory preparation and inventory reporting to the national expert in order to collect data and calculate GHG emission.
- Verification of calculated emissions for the year 2016/2017 for all the sectors on the above by using 2006 IPCC software and worksheets to calculate the GHGI for the time series
- Validated methodologies for GHG Inventory estimates and Quality Control and Quality Assurance.
- Conduct Key Category Analysis and Activity Data availability to identify the tiers to be used.
- Identify IPCC default Emission Factors and review available Country Specific Emission Factors.
- Assist in preparation of a GHG Activity Database in considering the present and future trends
- Build scenarios for GHG emission in each sector separately and one consolidated by using improved methodology developed by the UNFCCC and IPCC.
- Develop a baseline scenario to abate the increase of GHG emissions based on the results from the GHG Inventory and future development plans, particularly in the Energy and Industry Sectors.
- Identify the input data, taking into consideration data gaps and areas need to be improved and identified in the First Biennial Update Report (BUR1).
- Identify barriers in obtaining and/or collecting existing activity data for key sources and propose solutions.
- Identify research collaborations and mechanism for identified gaps, improve activity data and emission factors that are reflecting better in GHG inventory process.
- Describe procedures and arrangements undertaken to collect and archive data for the preparation of national GHG inventories, as well as efforts to make this a continuous process, including information on the role of the institutions involved.
- Archive relevant data, information, and formats used for the project period and for future communications.
- Prepare and submit updated GHG Inventory of the sector including National Inventory Report (NIR) and Common Reporting Format (CRF) Tables for the year 2016/2017.
- Organize workshops in cooperation with the NC4Egypt Project and other experts to present and discuss the results obtained from the GHG Inventory.

4. Data Provisions

- Collection of data/information required for GHGI estimation is the responsibility of the Team of Experts
- CAPMAS is a trusted source of national data
- If needed, the NC4-Egypt Project can support the Consultants by official support letters to governmental entities to facilitate the data collection

5. Deliverables:

The Team Leader, shall identify to his/her team the structure and contents of deliverables by each expert in the team and will deliver the completed GHG Inventory Chapter on behalf of the team. Indicatively, each expert shall deliver

- 5.1 GHG Inventory for the sector (NIR + CRF Tables)
- 5.2 Two presentations on the final outcomes of his/her deliverables (as identified by the Team Leader and the Project Manager)

All deliverables will have to be sent to Fourth National Communication Project as a MS Word, MS Excel (for calculation spreadsheets) document and PDF.

6. Qualification and Experience:

All Consultants should meet the following minimum qualifications and skills:

1. A degree from a recognized university and at least a M.Sc. in the field of Engineering, Science, Environment and environmental management, economic or equivalent qualifications in any other field related to the project.
2. At least of 7 years of working experience in the area relevant to the Climate Change, particularly the mentioned scope of work in section 3 above.
3. Experts with accumulated experience and substantial involvement in previous National Communications or BUR are highly encouraged to apply.
4. Sound and broadly-recognized scientific expertise on GHG Inventory.
5. Good understanding of the national environment/development issues as well as being aware of national obligation towards the UNFCCC and Paris Agreement with an institutional development experiences.
6. Good understanding of GHGs inventory process and demonstrable knowledge of 2006 IPCC Guidelines and software
7. Knowledge on analytical capacity for determining mitigation options for decision-making.
8. Knowledge on Quality Control and Quality Assurance.
9. Excellent communication (Written and Oral) Skills.
10. Knowledge on analytical capacity for determining mitigation options for decision-making.
11. Knowledge on Quality Control and Quality Assurance.
12. Appropriate experience working with government structures at local levels, and working with NGOs and private sector.
13. Excellent inter-personal skills as well as working well within a team environment.
14. Good command of English and Arabic languages

7. Duration of the Assignment

- The level of work for this assignment is estimated for each experts as identified in the above table in Section 2 and to be conducted in **6 months** starting from the date of contracting
- Consultants should exert their utmost effort to deliver on time otherwise fees will be subject to reduction as delay penalty

8. Milestones

- The Sectoral Team of Experts in coordination with the Team Leader and Project Manager will arrange an orientation **kick-off meeting** for the team to agree on methodological approach and other arrangements, the meeting will be held in NC4-Egypt Project or EEAA.
- The Sectoral Team of Experts will have a stocktaking meeting for policy review with Senior Governmental Officials from EEAA and other stakeholder ministries

9. Scope of fees and Schedule of payments

- The contract price for individuals is a lump sum fixed output-based price of the here in specific duration.
- Proposals should be submitted individually by experts and identify his/her applying position

10. Payments:

#	Deliverable	Due Date	Payment
1.	Inception report	2 weeks from contracting date	5%
2.	First draft of GHG inventory of the sector (after approval by the Team Leader and the Project Manager)	2 months from Inception Report	40%
3.	Final GHG inventory of the sector (after approval by the Team Leader and the Project Manager)	2 weeks from receiving comments on first draft GHG inventory Chapter	45%
4.	Two Presentations on outcomes for stakeholders and National Climate Change Council	Upon request of PM	10%

11. Application Process:

1. Proposals to be submitted by national experts including Technical and Financial Offers as well as an updated CV.

2. The Consultant shall indicate in her/his proposal a clear time table work plan taking into account the deliverables and milestones mentioned above
3. The consultant has the right to apply for one or more sectors depending on his/her areas of expertise
4. Applications will be evaluated on basis (technical 70%/ Financial 30%), the team of expert will be comprising according to the evaluation of CVs, experience, professional work and in consultation with potential team leader.
5. Applications to be sent in Soft copies to:
 1. Name: **Dr. Samir Tantawi, Fourth National Communication Project Manager (NC4Egypt)**
 2. Email: samir_tantawi@hotmail.com
2. **Closing Date:** . two weeks from advertising date 30 May 2020

12. List of Abbreviations

BUR	Biennial Update Report
CAPMAS	Central Agency for Public Mobilization and Statistics
COP	Conference Of Parties
CV	Curriculum Vitae
EEAA	Egyptian Environmental Affairs Agency
GEF	Global Environment Facility
GHGI	Greenhouse Gases Inventory
IC	Individual Contract
IEE	Industrial Energy Efficiency
iNDCs	Intended Nationally Determined Contributions
LEAP	Long-range Energy Alternatives Planning
LECB	Low Emission Capacity Building
LEDS	Low Emission Development Strategy
M.Sc.	Master of Science
MRV	Measure, Report, Verify
NC4Egypt	Fourth National Communication (Egypt)
NGOs	Non-Governmental Organizations
SDS	Sustainable Development Strategy
TNC	Third National Communication
UNDP	United National Development Programme
UNFCCC	United Nation Framework Convention on Climate Change

Annex:

Terms of Reference

Egypt Fourth National Communication Project (NC4-Egypt)

Preparing the GHGs Inventory Chapter of the Fourth National Communication Report National GHGs Inventory Team Leader (National Consultants Only)

13. Background

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14. Objective

A national GHG Inventory is a key element of the national communication to the UNFCCC. In the context of the UNFCCC, it is a comprehensive listing by source of annual GHG emissions and removals resulting directly from human activities for one year or a number of years. It comprises compiling of emissions and removals of Greenhouse Gasses of major sectors such as Energy, Industrial Process & Product Use, Agriculture, Forestry & Other Land Use (AFOLU) and Waste.

In this purpose, the project aims to hire a **Team Leader** to lead a team of national consultants in preparation of GHG inventory for Egypt Fourth National Communication Project (NC4-Egypt), in accordance with the GHG Inventory Preparation Guideline developed by the UNFCCC and IPCC in collaboration with all relevant stakeholders. This exercise will be based on 2016/2017 data and

information using 2006 IPCC Guideline. Thus, in order to assist the Team Leader in preparation of GHG inventory a team of experts on Energy, Industrial Process & Product Use, Agriculture, Forestry & Other Land Use (AFOLU) and Waste sectors will be hired by the NC4 Egypt Project through other ToRs.

All tasks related to GHG inventory preparation to be carried out in close communication and collaboration by the team of experts in order to prepare GHG Inventory Chapter in the Egypt Fourth National Communication Report, this chapter will provide update to the GHGI Chapter of the BUR1 report of Egypt (Submitted to UNFCCC on Dec. 2019).

Position	Estimated number of INDICATIVE Working Days
GHG Inventory Team Leader	40

15. Scope of Work

The National GHGs inventory Team Leader should work in consultation with and under the guidance and supervision of the NC4Egypt Project Manager, Specifically, his\her responsibilities are but not limited to the following tasks:

Specific tasks to be performed by the Team Leader are as follows:

- Assessment of undertaken and necessary procedures and arrangements to collect and archive data for the preparation of a National GHG Inventory System (NIS), as well as efforts to make this as a continuous process, including information on the role of the institutions involved
- Ensures the timely and effective management of the planned activities and deliverables among the Team of Experts.
- Provide necessary technical guidelines, developed by the UNFCCC and the IPCC on GHG inventory preparation and inventory reporting, to the expert team in order to collect data and calculate GHG emission
- Major GHGs such as CO₂, CH₄, N₂O and other indirect GHGs like HFCs, PFCs and SF₆ as well as CO, NO_x, So_x and NMVOCs should be calculated as per the Guidelines of UNFCCC and IPCC
- Advise national expert team and NC4Egypt Project on the development of an institutional setup for the preparation of the GHG inventory, identify key stakeholders in the process of preparation of the inventory and Identify barriers and propose solutions in obtaining and/or collecting existing activity data for key sources
- Guide the expert team to collect/gather all the necessary information and data required to prepare the GHG inventory on Energy, Industrial Process & Products, Transport, Agriculture, Forestry & Other Land Use (AFOLU) and Waste sectors.
- Guide the members of expert team to identify and calculate sector wise GHG emissions and validate standardized methodologies on GHG inventory preparation.

- Verify the calculated emissions for the years 2016/2017 for all the sectors on the above by using validation methodologies for GHG Inventory estimates and Quality Control and Quality Assurance.
- Guide to build scenarios for GHG emission in each sector separately and one consolidated by using improved methodology developed by UNFCCC and IPCC.
- Guide to develop a baseline scenario to abate the increase of GHG emissions based on the results from the GHG Inventory and future development plans, particularly in the Energy and Industry Sectors.
- Revise the input data, taking into consideration data gaps and areas need to be improved and identified in the First BUR (BUR1).
- Identify and develop advanced methods for overcoming inventory data gaps for unavailable data and advise on research collaborations on identified data gaps, improve activity data and emission factors that are reflecting better in GHG inventory process
- Archive relevant data, information, and formats used for the project period and for future communications.
- Prepare and submit updated GHG Inventory of Egypt Fourth National Communication.
- Participate in technical workshops/meetings to present and discuss the final results from GHG Inventory
- Design the training workshop on the use of IPCC Guidelines for relevant sectors
- Provide support in capacity building activities of the project to enhance capacities of national specialists from Governmental entities and private sector young experts on estimation of the GHGI for training sessions and provides feedback reports
- Participate in the selection of team members

16. Deliverables:

The Team Leader, and on behalf of the Team of Experts, shall deliver the following deliverables;

- a. **Inception Report** detailing the consultants understanding of the assignment, a proposed summary of the methodology, approach and the tools to be used for data collection, analysis and documentation for each sector, a work plan and budget and capacity building proposal.
- b. **Institutional and Legal Framework** Report for the establishment of National Inventory System (NIS)
- c. **GHG inventory** including:
 - Complete CRF Tables
 - Complete NIR Report including
 - AD Collection methods
 - Emission Factor and methodologies
 - Key Category Analysis
 - Emission Factor and methodologies

- Uncertainty Analysis
- QA/QC and Improvements Plans
- d. Updated **Greenhouse Gases Inventory Chapter** (GHGI) based on the same chapter in BUR1 as per the following indicative ToC:
 1. Executive Summary (English and Arabic)
 2. Introduction
 3. Objective
 4. Institutional Arrangement for National GHG Inventory
 5. GHGI Methodology
 - A. Activity Data
 - B. Emission Factors
 - C. Methodological tiers used
 6. Breakdown of Emissions by sector
 - i. Energy Sector
 - ii. Industrial Process and Product use (IPPU) Sector
 - iii. Agriculture, Forestry and Other Land Use (AFOLU) Sector
 - iv. Waste Sector
 7. Key Category analysis and uncertainty analysis
 8. Quality Control and Quality Assurance / Verification Procedure
 - A. QA/QC for data collection
 - B. QA/QC for calculation of Emissions
 9. Trend in GHG Emissions and comparison with the GHGI emissions mentioned in 1st BUR Report
 10. Measurement, Reporting and Verification (MRV).
 11. Problems encountered and solutions implemented, recommendation for future improvements.
- e. **Two presentations** of the final draft of GHGI Chapter to the stakeholder workshop and National Climate Change Council (NCCC) [or as identified by the Project Manager]
- f. In consultation with the Project Manager, provide **training and materials** on GHG inventory related technical issues

All deliverables including reports, calculation sheets, tools, ..etc will have to be delivered to Fourth National Communication Project as open sources (e.g. Word and Excel files) and in PDF formats.

17. Qualification and Experience:

The Consultant should meet the following minimum qualifications and skills:

15. A degree from a recognized university and at least M.Sc. degree in the field of Engineering, Science, Environment and environmental management, economic or equivalent qualifications in any other field related to the project
16. At least of 8 years of working experience in climate change or related field
17. Experts with accumulated experience and substantial involvement in previous National Communications or BUR are highly encouraged to apply.

18. Good understanding of the national environment/development issues as well as being aware of national obligation towards the UNFCCC and Paris Agreement with an institutional development experiences.
19. Good understanding of GHGs inventory process and demonstrable knowledge of 2006 IPCC Guidelines and software
20. Excellent communication (Written and Oral) Skills.
21. Appropriate experience working with government structures at local levels, and working with NGOs and private sector.
22. Excellent Leadership and inter-personal skills as well as working well within a team environment.
23. Previous proven experience in leading teams of consultants
24. Knowledge on analytical capacity for determining mitigation options for decision-making.
25. Knowledge on Quality Control and Quality Assurance
26. Good command of English and Arabic languages

18. Data Provisions

1. Collection of data/information required for GHGI estimation is the responsibility of the Team of Experts
2. CAPMAS is a trusted source of national data
3. If needed, the NC4-Egypt Project can support the Consultants by official support letters to governmental entities to facilitate the data collection

19. Duration of the Assignment

- The level of work for this assignment is estimated to **40** working days to be conducted in **6** months starting from contracting date
- Consultants should exert their utmost effort to deliver on time otherwise fees will be subject to reduction as delay penalty

20. Milestones

- The Team of Experts headed by the Team Leader and in coordination with the Project Manager will arrange an orientation **kick-off meeting** for the team to agree on methodological approach and other arrangements, the meeting will be held in NC4-Egypt Project or EEAA.
- The Team of Experts headed by the Team Leader will have a stocktaking meeting for policy review with Senior Governmental Officials from EEAA and other stakeholder ministries

21. Scope of fees and Schedule of payments

- The contract price is a lump sum fixed output-based price of the here in specific duration
- The Team Leader, s/he shall indicate in the proposal a complete and detailed work plan and duties of each member of the team.

22. Payments:

#	Deliverable	Due Date	Payment
5.	Inception report	2 weeks from contracting date	5%
6.	First draft of GHG inventory Chapter of NC4Egypt	3 months from Inception Report	30%
7.	First draft of Institutional and Legal Framework Report for establish a National Inventory System (NIS)	1 month from delivering first draft of GHG inventory	10%
8.	Final GHG Inventory Chapter	2 weeks from receiving comments on first draft GHG inventory Chapter	30%
9.	Final of Institutional and Legal Framework report for establish a National Inventory System (NIS)	2 weeks after receiving comments on first draft of same report	10%
10.	Executive Summary in English and Arabic	2 weeks from delivering final GHG Chapter	5 %
11.	Two Presentations (Stakeholders and NCCC)	Upon request of PM	5 %
12.	On-Hand training workshop/s on GHGI	As arranged with PM	5 %

23. Application Process:

6. Proposals to be submitted by national experts including Technical and Financial Offers as well as an updated CV.
7. The Consultant shall indicate in her/his proposal a clear time table work plan of each member in the team taking into account the deliverables and milestones mentioned above
8. Applications will be evaluated on basis (technical 70%/ Financial 30%).
9. Applications to be sent in Soft copies to
 1. Name: **Dr. Samir Tantawi, Fourth National Communication Project Manager (NC4Egypt)**
 2. Email: samir_tantawi@hotmail.com
10. **Closing Date:** two weeks from advertising date

24. List of Abbreviations

BUR	Biennial Update Report
CAPMAS	Central Agency for Public Mobilization and Statistics



COP	Conference Of Parties
CV	Curriculum Vitae
EEAA	Egyptian Environmental Affairs Agency
GEF	Global Environment Facility
GHGI	Greenhouse Gases Inventory
IC	Individual Contract
IEE	Industrial Energy Efficiency
iNDCs	Intended Nationally Determined Contributions
LEAP	Long-range Energy Alternatives Planning
LECB	Low Emission Capacity Building
LEDS	Low Emission Development Strategy
M.Sc.	Master of Science
MRV	Measure, Report, Verify
NC4Egypt	Fourth National Communication (Egypt)
NGOs	Non-Governmental Organizations
SDS	Sustainable Development Strategy
TNC	Third National Communication
UNDP	United National Development Programme
UNFCCC	United Nation Framework Convention on Climate Change