

#### Annex -1-

# Terms of Reference (TOR)

Project Name: - UNDP CEDRO 4

Reference Number: 00088302

<u>Subject</u>: Coordinating Expert: Coordination with the technical, legal and administrative parties for the establishment of a renewable energy grid interconnection code for Lebanon

#### 1. Background

#### The Project:

The United Nations Development Programme, in partnership with the Ministry of Energy and Water, has initiated the fourth phase of the CEDRO (Community Energy Efficiency and Renewable Energy Demonstration Project for Lebanon) Programme (CEDRO 4) funded by the European Union. The CEDRO 4 project includes several sustainable energy projects that are designed to promote related renewable and energy efficiency systems.

In parallel, another nationally executed project has been initiated in this field with the Ministry of Energy and Water (MoEW) in coordination with the Lebanese Center for Energy Conservation (LCEC): the Small Decentralized Renewable Energy Power Generation Project, or DREG, is funded by the Global Environment Facility (GEF).

Both projects are collaborating with MoEW and LCEC to undertake the needed assessments of renewable energy sources in order to support the Government of Lebanon's pledge to reach 12% renewable energy targets by 2020. The LCEC supports the Government of Lebanon to develop and implement national strategies that promote the development of efficient and rational uses of energy and the use of renewable energy at the consumer level.

This work is the first step in assessing the baseline existing conditions of the Lebanese network and its ability to reliably absorb RE sources in the areas they are expected to be installed, and recommendations on the necessary next steps with respect to actions and reinforcement of the national grid are to be detailed.



# 2. Scope of Work, Responsibilities and Description of the Proposed Work

The tasks mentioned below shall be performed in close cooperation with the Ministry of Energy and Water, Électricité du Liban, the LCEC, and UNDP DREG and CEDRO project teams. It is understood that the Coordinating Expert shall perform all the services/work as necessary to fulfill the objectives of the Contract, joining forces with the Technical Consultant.

The interconnection of renewable energy power generation plants with the grid, especially those of large capacity, is not regulated in Lebanon, neither technically nor legally. The objective of the required work is to elaborate binding guidelines and requirements, i.e. an RE code to connecting renewable energy power generation plants ( $\geq$ 1 MW) to the grid, knowing that the code should be elaborated such that it can be tailored to the Lebanese case and enable the safe RE penetration on a project basis. The legal and administrative issues should also be assessed in order to reach an acceptable final result by removing any barriers.

As such, the selected individual will be responsible for providing the services outlined below:

# TASK 1. Gather data related to the current situation of grid

- 1.1. Collect data required to evaluate current status of the grid.
- 1.2. Assist the Technical Consultant in assessing data gathered from EDL and other relevant sources.
- 1.3. Inquire involved parties about any missing data and the reason for its unavailability.

#### TASK 2. Report on the current situation of existing large RE plants connected to the grid

- 2.1. Collect data related to existing large RE plants, gathered from EDL and other relevant sources.
- 2.2. Assist the Technical Consultant in assessing the gathered data.
- 2.3. Inquire involved parties about any missing data and the reason for its unavailability.
- 2.4. Investigate current operation and interconnection status of the existing RE plants with the grid, reporting any flaws/issues being encountered.

#### TASK 3. Report on situation of future potential large RE projects to be connected to the grid

- 3.1. Collect planning and design data related to future and potential projects.
- 3.2. Assist the Technical Consultant in validating the interconnection of these future projects (assuming all possible scenarios for the grid in the future), reporting any potential problems and issues (if any).



#### TASK 4. Assist in the development of RE grid interconnection code

- 4.1. Investigate the technical/field, legal and administrative barriers opposing the development of the said grid code.
- 4.2. Mitigate issues that can be promptly solved with the concerned parties and report back on more complex and/or unsolved ones.
- 4.3. Identify key individuals/groups within the main stakeholders such that the process of establishing the RE grid code is supported.
- 4.4. Provide the Technical Consultant with any additional data that might be needed during the development process.
- 4.5. Develop, with the Technical Consultant, a technical and legal template applied for RE projects in relation to grid requirements, to be adopted by EDL for future projects.

#### **TASK 5: Conclusions and recommendations**

- 5.1. Assist the Technical Consultant in drawing the necessary conclusions regarding current status of the grid and the interconnection with the existing RE plants.
- 5.2. Formulate a methodology that will allow a faster and unobstructed data collection process in the future, which will feed into the national GHG inventory system as well as the Monitor-Report-Verify (MRV) framework.
- 5.3. Assist the Technical Consultant in preparing a list of missing data, the availability of which is crucial.
- 5.4. List the recommendations and modifications deemed necessary in the technical/field, legal and administrative aspects for a smooth RE grid interconnection process.

# 3. Qualifications Required

# The Individual Consultant should possess the following minimum qualifications:

# a. Academic Qualifications:

- University degree (Bachelor or above) in electrical engineering or related field. Major or specialization in power grids, renewable energy, policy or related field is an asset.



#### b. Years of Experience:

- Relevant experience of not less than 10 years including experience in working and collaborating with various government agencies or interdisciplinary team
- Experience in the Lebanese grid is highly desired and will be considered as an asset.

# c. <u>Competencies</u>:

- Advanced level of communication skills including proficiency in the Arabic and English Languages.
- Excellent knowledge of the Lebanese energy sector
- Strong analytical and report-writing skills
- Excellent interpersonal and communication skills
- Commitment to team and cross-disciplinary work
- Emphasis on delivery of results and reacts well to constructive criticism

# 4. Duration of Contract

The contract is 30 man-days spread out over a period of 8 months.

# 5. Schedule of Implementation

1		Durati																	
D	Task	on																	
1	Draft outline and approach methodolog Y	3 manda ys (+15 workin g days for checki ng)	Mon th	1				2				3				4			
			Wee	1	2	3	4	5	6	7	8	9	1 0	1 1	1 2	1 3	1 4	1 5	1 6
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			Mon th	5			6				7				8				
			Wee	1 7	1 8	1 9	2 0	2 1	2 2	2 3	2 4	2 5	2 6	2 7	2 8	2 9	3 0	3 1	3 2
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	Technical, legal and administrati ve data collection	20 manda ys	Mon th	1					2	2		3				4			
			Wee		•			-		-			1	1	1	1	1	1	1
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			Mon th	5			6			7				8					
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	Draft report	3 manda ys (+15 workin g days for checki ng)	Mon th	1				2				3				4			
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	Finalized RE grid interconnec tion code	4 manda ys	Mon th	1				2				3				4			
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# 6. Deliverables

All deliverables, including supporting documents, should be written in English and submitted in one original and one copy including one soft copy in word format on CD.

- Outline and methodology
- Data collection
- Draft report
- Finalized RE grid interconnection code

The project manager shall subsequently have fifteen (15) working days within which to forward all comments, required modifications and adjustments to the consultant. The approval of the submitted deliverables will be based on a comprehensive review by the project. The project manager reserves the right to request additional evaluation time if other information or clarification is further needed. Payments will be issued upon satisfactory completion of the required outputs.



# 7. Payment terms/schedule

Task	Payment	Deliverables	Potential dates					
1	40%	Satisfactory delivery of outline and methodology	End month 1 after contract signature					
2	-	Satisfactory delivery of collected data	End month 6 after contract signature					
3	60%	Satisfactory assistance to the Technical Consultant and delivery of finalized RE grid interconnection code	End month 8 after contract signature					