



RCREEE

Regional Center for Renewable Energy and Energy Efficiency
المركز الإقليمي للطاقة المتجددة وكفاءة الطاقة

Terms of Reference

Consultancy Service to Conduct a Study on Decarbonizing the Transport Sector in the Arab Region: Guideline for connecting EV charging stations with Electricity grid



Decarbonizing the Transport Sector in Arab Region

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I. Overview

Scientists warn that greenhouse gas emissions must be steeply reduced by mid-century to avoid additional warming that will have genuinely catastrophic effects. In light of that, the task of transforming the technologies and systems that move people and goods around the globe seems imperative, however daunting. Global demand for passenger and freight transportation is increasing, driven by population and economic growth. As transportation demand has grown so too, the carbon emissions from the global transportation sector have been soaring too.

The transport sector is far from being on track to meet global climate targets for 2030 and 2050. Despite gains in energy efficiency, particularly in road transport, global energy demand in the transport sector has increased steadily over the past decade, due mostly to the growing number and size of vehicles on the world's roads. The result has been a global rise in greenhouse gas (GHG) emissions from the transport sector, even as transport emissions in some regions have fallen. The sector as a whole accounted for nearly one-quarter of global energy-related GHG emissions in 2019. Even if all announced policy measures are implemented, the transport sector is expected to increase GHG emissions by 60% up to 2050, largely driven by increasing freight and non-urban transport. Road transport alone is estimated to represent at least 70% of GHG emissions from the sector by 2050 if no further measures are taken.

Energy demand for transport is growing much faster than any other sector, while transport still relies heavily on fossil fuels and has by far the lowest share of renewables among end-use sectors. Transport represents nearly a third of total final energy consumption, but only 3.7% of this was met by renewable sources. Road transport currently accounts for around three-quarters of global transport energy use.¹

In the Arab region, according to a study published in 2020 by IsDB, the expected growth in transport sector emissions is expected to increase between 100-200 percent by 2050. Algeria, Egypt, and Saudi Arabia are among the largest transport CO₂ emitters in the region by 2050. The study shows the middle-income countries will witness the transport sector highest emission rates that will gradually increase up to reach 2000 CO₂ Mt produced by the transport sector. At the same time, and according to the policies, plans and strategies announced in the Arab countries, it can be argued that transport sector is almost neglected. Cumulative efforts between authorities in charge of transport, environment and energy should be devoted to start concrete actions to decarbonize the transport sector.

II. Objective

The wide deployment of Electric Vehicles (EV), usually seen as part of the solutions allowing for the decarbonization of the transport sector, requires the existence of a charging infrastructure allowing for the scaling-up of its deployment. Therefore, a comprehensive guideline is requested to cover both the technical and commercial aspects for the deployment of individual and public charging stations.

III. Scope of Work

In line with the objective of the study, the following tasks are identified:

¹ *Decarbonizing the Transport Sector with Renewables Requires Urgent Action, Hannah E. Murdock, November 2020*



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Task 1: Collect data on transport sector status in the Arab region and assess the current penetration of electric vehicles as well as existing charging infrastructure.

Task 2: Develop a technical comprehensive guideline for the installation of individual EV charging stations in terms of safety, grid connection requirements and required licensing if any.

Task 3: For the public charging stations, the guideline should cover in addition to the technical aspects, the accessibility and ease of use, the visibility, the safety for installers, users and the public and the choice of sites and its optimisation.

Task 4: The guidelines should also present the best practices in terms of potential financing mechanisms for individual charging stations as well as commercial models and potential business models for public charging stations.

Task 5: Deliver final study report and guidelines including source data and results tables and graphs in excel format.

These tasks, along with their respective deliverables, are explained in detail below.

IV. Detailed Description of Activities

The development of the study will cover the following main steps:

1. Inception Report

The consultant/s will begin by preparing inception report describe the outline, including specific objectives, geographic boundary of the guideline, expected outcomes, purpose and scope, methodology, quality assurance, time schedule and survey if necessary.

2. Collect Transport Data

Literature review including:

- Data collection on the volumes of public and private transport sector in the Arab Region, including but not limited to vehicle fleet, marine, and aviation data besides, disaggregated information for urban sector.
- Share of transport sector in the energy mix in the Arab Region.
- Transport sector emissions in the Arab region.
- Assessment of EV penetration in each of the Arab countries.
- Review of existing plans, if any, for the deployment of EV and their charging stations..
- Other available official data additional national or regional references.

3. Guideline for Individual Charging Stations (ICS)

The guideline for the ICS should include but not be limited to the following:

- Safety of use
- Grid connection requirements
- Licensing schemes
- Communication networks
- User interface, as well as considerations that range from the parking spot up to the urban scale.
- Best practices in terms of financing mechanisms and financial incentives for the upscaling of deployment of EVs.



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4. Guideline for Public Charging Stations (PCS)

The guideline for the PCS should include but not be limited to the following:

- Safety of use
- Grid connection requirements
- Licensing schemes
- Communication networks
- User interface
- Considerations that range from the parking spot up to the urban scale.
- Optimization of the site selection and distribution process.
- Presentation of best practices in terms of commercial and business models for PCS.

5. Stakeholder consultation.

Prepare power point presentation for the regional workshop, presenting the key findings of the guidelines and collect the remarks and feedback from stakeholders.

6. Final study report

Integration of feedback form the stakeholders and preparation of the final guideline report as well as both ICS and PCS including source data and results tables and graphs in excel format.

V. Timeframe and Deliverables

The start of the assignment is planned 21st of August 2022. The final version of the study is expected to be submitted by 15th of October 2022.

The timeline for deliverables will be as follows:

Deliverable/ output	Deadline	Review and approvals required
1. Inception report and literature review	2 weeks after contract start	LAS and RCREEE
2. Draft version of the guideline	6 weeks after contract starts	LAS and RCREEE
3. Regional workshop	7 weeks after contract start	Workshop evaluation
4. Final version	8 weeks after contract starts	LAS, GIZ and RCREEE

VI. Qualifications of the consultant/s

The consultant/s can be a consulting firm or an independent consultant and is (are) expected to fulfil the following requirements:

- Advanced university degree in energy, energy planning, renewable engineering, or other energy relevant fields, as well as economics or policy development.
- In-depth knowledge of transportation sector including technical and financial issues of transport sector emissions base line, along with socio-economic and technological development with focusing on the EVs.



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- At least 15 years of experience in transport sector including design strategies and policy deployment at international or regional level, preferably with further experience in the Arab region.
- In-depth knowledge in institutional, regulatory and legal frameworks for energy sector, including the legal drafting of policies and supporting measures, administrative procedures.
- Proven track record of delivering similar services.
- Excellent command of written and spoken in English.

The assignment must be conducted in close coordination with RCREEE and its partners that will ensure the monitoring and the supervision of the work progress. The consultant/s are responsible for the delivery of all contents based on the scope of work with respect to the reporting schedule.

VII. Contracting Party and Beneficiary

The expert will enter into a consultancy contract with RCREEE according to RCREEE's internal regulation and terms of contracting.

VIII. Payment and Deliverables

The payment will be provided to the consultant/s after successful completion of the tasks presented above and their approval by GIZ, LAS and RCREEE, and the provision of all deliverables.

Payment for the services describe above will be made as follows:

- 50% of the total contract price after acceptance of the Draft version of the guideline.
- 50% of the total contract price after finalization the regional consultation workshop and submission the final version of the Guideline.

IX. Working Languages:

English language.

X. Other terms and conditions

- RCREEE have the right to have all reports under this project redrafted by the consultant/s as many times as necessary to achieve an acceptable final version by the beneficiary. The project timeline indicated has to be strictly adhered to.
- The consultant/s shall acknowledge that RCREEE have proprietary rights of all reports, articles, and any other documents acquired, compiled or prepared in the performance of the Project, with the exception of those documents used in the project which have already been copyrighted.
- The consultant/s shall be under an obligation of confidentiality on all matters concerning the activities and all issues relating to its assignment in the Project. This confidentiality clause commits the consultant/s to respect the secrecy of all information, knowledge of which it may gain during the execution of its work, and to refrain from divulging to third parties or from using for personal/corporate gain or for that of a third party any document or item of information which would not otherwise have been made public, even after they



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have ceased to be of relevance to the aforementioned work. The consultant/s shall thus not make any statements publicly or to media regarding the assignment unless RCREEE has given its written permission to do so.

- This ToR shall be deemed to form an integral part of the contract.

XI. How to Apply

Interested Expert / Firm must submit the following documents/information to demonstrate their qualifications to procurement@rcreee.org with no later than Sunday, August 14, 2022 at 04:00pm (Cairo Time).

A. Technical Requirements:

- Provide a brief methodology on how they will approach and conduct the work.
- Personal CV including past experience in similar projects and at least 3 references

B. Financial Requirements:

The financial proposal shall specify a total lump sum amount, and payment terms shall be against the deliverables (i.e. whether payments fall in installments or upon completion of the entire agreement).

Price should inclusive of all costs, expenses, charges or fees that Expert may incur in connection with the performance of its obligations hereunder, including management, travel costs and all kind of taxes, duties, levies, fees and other charges of any nature imposed by any authority or entity.

Taxes, duties and other impositions on the Consultant are deemed included in the remuneration. Consultant agreed that RCREEE to deduct from any payment request presented in connection with this agreement any other allocation for duties or taxes. RCREEE will deduct the withholding tax and will transfer such deducted amount to the tax authorities.

Please consider the following:

- Criteria for Contract Award : Lowest Price Quote among technically responsive offers
- Currency of Proposal : Euro
- Payment Provisions of Local Firm / National Consultant: Payment will be affected by bank transfer in Egyptian Pounds based on the rate of day of transfer.
- Payment Provisions of Foreign Firm / Consultant: Payment will be affected by bank transfer in EUR.