

**ANNEX II: TERMS OF REFERENCE – TECHNICAL
SPECIFICATIONS**

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1. BACKGROUND INFORMATION

The Cyprus Energy Regulatory Authority (CERA) calls for tenders for the provision of Consultancy Services for Establishing the Wholesale Electricity Market Monitoring procedures & the related Software and Hardware needs and Supervision Services during the implementation process of the agreed procedures required for the operation of the competitive electricity market in Cyprus.

1.1 General background

CERA was established by Law N.122 (I) 2003 according to European Directive 99/92/EEC, that has been replaced by (N.130(I)/2021). It is the National Independent Energy Regulatory Authority of the Republic and is legally distinct and functionally independent of any other public or private entity. CERA consists of three Members appointed by the Council of Ministers of the Republic of Cyprus after consultation with the Parliamentary Committee on European Affairs. The three Members are Dr. Andreas Poullikkas (Chairman), Mr. Philippos Philippou (Vice Chairman) and Mr. Neophytos Hadjigeorgiou (Member).

According to the Law of Regulating the Electricity Market N.130(I)/2021 (the Law), CERA has the following objectives, powers and responsibilities:

- It acts as the Dispute Resolution Authority.
- It is a single point of contact for informing consumers.
- Promotes Renewable Energy Sources.
- Encourages and facilitates genuine competition in the Electricity Market, avoiding adverse discrimination and aiming ultimately at reduced prices.
- Protects the interests of the final consumers.
- Promotes the development of an economically viable and efficient Electricity Market.
- Ensures adequacy in electricity supply for the satisfaction of all reasonable needs and demands for electricity.
- Safeguards the Continuity, Quality, Reliability and Security of electricity supply.
- Encourages the efficient use and generation of electricity.
- Issues, controls, enforces, amends and recalls Licences or grants Exemptions from a Licence.
- Ensures that Licensees operate efficiently and are in a position to finance the business activities for which the Licence has been issued.
- Determines, publishes and imposes quality standards with which Licensees have to comply.
- Regulates tariffs, charges and other terms and conditions to be applied by Licensees, for any services provided according to the terms of their Licences.
- Promotes the development of regional markets within the Community so that they operate competitively and properly in order to achieve security of supply.

- Promotes the elimination of restrictions in the electricity trade among Member States, including developing appropriate cross-border transmission capacities to meet demand and enhance the integration of national markets.
- Ensures that the Rules governing the operation of electricity networks and the electricity market (Transmission and Distribution Rules and the Electricity Market Rules) are prepared and approved in accordance with the Law.
- Sets the rules or the procedures under which complaints are examined which relate to services offered by the Licensees including, when it considers it appropriate, the carrying out of investigations and the taking of decisions for such complaints.
- Carries out investigations, either following the submission of a complaint or initiated by CERA ex officio.
- Imposes administrative fines in the event of violation of laws or regulations.
- Ensures the implementation of the provisions of Regulation (EU) no 1227/2011.
- Promotes Research and Development in the field.
- Prepares and implements long-term planning regarding capacity for generation, transmission and distribution on a long-term basis, in order to meet the demand for electricity in the system and to secure supplies to customers and includes security of supply, energy efficiency / demand-side management and achievement of environmental objectives and targets for energy from renewable sources.

During the execution of its duties and exercising its authorities and jurisdictions, CERA can:

- Take decisions in accordance with the provisions of the Law and the Regulations issued thereunder.
- Take regulatory decisions to determine how it will regulate the electricity market and which licensees will be bound by such a regulatory decision.
- To issue Regulations on the basis of the Law.

1.2 Tender Specific background

In 2015 Regulatory Decision (RD) 01/2015 was issued by CERA for the «The new electricity market arrangements in Cyprus». The RD was the high-level design for the restructuring of the wholesale electricity market and the net pool electricity market model was the chosen implementation. It incorporates a central Day Ahead Market and a forward market to provide participants with risk management tools. The proposed design is supplemented with a) an Integrated Scheduling Process along with a real time Balancing Mechanism which provide the TSO with the ability to procure and activate balancing services and b) a settlement process. Specifically, bilateral physical forward contracts are notified and corresponding schedules are nominated to the Market Operator by Over the Counter market gate closure on the day ahead. Suppliers and generators provide bid curves to a Day Ahead Market on a half hourly basis. Suppliers submit orders based on individually forecast demand. Orders in the Day Ahead Market should correspond to quantities not already covered by bilateral contracts. The

Day Ahead Market is centrally managed by a Market Operator. The Market Operator runs a process of matching bid curves to optimize dispatch of residual volumes at the day ahead. Contracts resulting from the Day Ahead market are between market participants and the Market Operator at the Day Ahead Market Clearing Price. An Integrated Scheduling Process with a real time Balancing Mechanism and later a continuous intra-day trading platform will be organized to further support market operations. RD 01/2015 can be downloaded from CERA's website (https://www.cera.org.cy/Templates/00001/data/nomothesia/ethniki/hlektrismos/rythmistikes_apofaseis/2015_01%20en.pdf)

This high-level design was implemented by the Transmission System Operator (TSO) which is also the Market Operator (MO). The detailed Trading and Settlement Rules (TSR) version 2.0.0 was submitted to CERA and approved in May 2017. The TSO then issued a tender for the implementation of the Market Management System in order to be able to implement the provisions of TSR v2.0.0. The tender was rewarded in April of 2020 and the TSR v2.0.0 are expected to enter into force by the end of 2022. Furthermore CERA approved modifications to TSR through versions 2.0.1 and 2.0.3.

After the approval of TSR v2.0.0 CERA approved TSR version 2.1.0 which incorporates demand response and TSR version 2.2.0 which incorporates in-front-of-the-meter storage participation but will not enter into force from the beginning of the market but at a later stage when changes are made to the MMS to support demand response. All versions of the TSR can be found on TSOs website (<https://tsoc.org.cy/electricity-market/electricity-market-rules/>). TSR v 2.0.0 is also available in English as an unofficial translation.

During the operation of the competitive electricity market, according to the TSR 2.0.0 (which are available in on the website of the Transmission System Operator - <https://tsoc.org.cy/>) CERA must:

1. Closely monitor the energy injection order submission pattern of the Dominant Participant in the Day Ahead market, in order to ensure the healthy operation of the wholesale electricity market and pinpoint possible illicit practices that could distort the Day Ahead Market Clearing Price (Ch. 7, Par. 5.2.2)
2. Closely monitor the healthy operation of the Integrated Scheduling Process in order to pinpoint possible offences or strategic behaviors that could distort the Real Time Balancing Mechanism (Ch. 8, Par. 11.1.1)
3. Especially for the Dominant Participant, CERA shall ex-post check on monthly basis the submitted upward and downward Balancing Energy Offers per Generating Unit, and compute the revenues acquired by the Dominant Participant from its participation in the Balancing Market with respect to its Generating Units acting as BSPs, in conjunction with the wholesale tariff of the Dominant Participant (as defined by the CERA) and the Reserve Capacity Offers. CERA may impose regulatory sanctions on the Dominant Participant, in case the latter takes advantage of its market power to attain windfall profits from the Balancing Market operation or to otherwise distort competition (Ch. 8, Par. 17.2.9)

Moreover, according to the Law CERA has, amongst others the responsibility of ensuring «substantial competition in the electricity market», «to promote the development of an economically viable and efficient electricity market» and is responsible to «monitor the extent and effectiveness of market and competition at wholesale and retail level».

2. OBJECTIVE, PURPOSE AND EXPECTED RESULTS

2.1 Objective

The objectives of the consultancy services to be undertaken includes:

Objective 1

To provide information about the available methods, processes, procedures and tools in order to for points 1, 2, and 3 of Paragraph 1.2 can be carried out.

Objective 2

To provide a detailed, step by step Market Monitoring method for the forthcoming Cyprus Electricity Market that will be in line with TSR 2.0.0 and will meet or exceed requirements of points 1, 2, and 3 of Paragraph 1.2.

Objective 3

To identify potential software and hardware requirements (if any) necessary for the implementation of the proposed Market Monitoring method and provide the technical details in order to be used as part of a separate Tendering procedure for acquiring the identified software and hardware.

Objective 4

Assessing the detailed Technical specifications of relevant Tenders and supervising the technical part of the tendering evaluation for the implementation of the relevant software and hardware tools (objective 2 above), in order that CERA can make a decision, and testing the implementation of the decided solution.

To provide assistance in evaluating the technical part of the Tenders for software and hardware necessary (if any) for the implementation of the proposed Market Monitoring method and provide assistance in assessing the then proposed solution upon installation.

2.2 Expected results

- **Result 1**

Provision of literature review describing industry practices deployed in Electricity Markets Monitoring, especially concerning the fulfilment of points 1, 2, and 3 of Paragraph 1.2 and review of the relevant methods used by European and USA Regulatory Authorities.

Through result 1, CERA will be gain knowledge and understanding of the industry practices as well as of the specific methods used in by other countries

The expected result should be in the form of report (deliverable).

- **Result 2**

Defining and setting the Electricity Market Monitoring procedure for the Cyprus Competitive Electricity Market and preparing a high level description of it.

Through result 2 CERA will obtain a final Market Monitoring procedure which will be put into use upon the commencement of the operation of the Competitive Electricity Market.

The expected result should be in the form of report (deliverable).

- **Result 3**

Establishment of software and hardware needs, if any, and description of the their technical specifications.

Through result 3 CERA will gain knowledge if a software and hardware is required for deploying the Electricity Market Monitoring procedure and will establish its technical requirements in order to be procured through a separate Tender procedure.

- **Result 4**

Provision of assistance in evaluating tenders for software and hardware (if required) and site acceptance testing upon installation

~~3. ASSUMPTIONS AND RISKS~~

~~3.1 Assumptions underlying the implementation of the Contract~~

~~3.2 Risks~~

4. CONTRACT SCOPE

4.1 Activity breakdown

The scope of the contract is the provision of Consultancy Services for *Establishing the Wholesale Electricity Market Monitoring procedures to be followed by CERA, the related Hardware & Software Needs and Supervision Services during the implementation process of the agreed procedures*. Specifically, the contractor will be asked to perform the following activities. Each Activity should be fulfilled by the submission of a relevant Deliverable:

Deliverable 1

Deliverable 1 will consist of:

1. A literature review of the possible methods, processes, tools and procedures which can be used in order to monitor the Cyprus Electricity Day Ahead Market and the Integrated Scheduling Process with utter purpose fulfilling points 1, 2 and 3 of Paragraph 1.2.

The literature review should include sufficient explanation of each method and its advantages and disadvantages.

2. A listing of the methods, processes, tools and procedures used by other Energy Regulatory Authorities in Europe and USA to fulfil the abovementioned.

The consultant may consider any other relevant methods and procedures that could be adopted by CERA based on other European or USA Regulatory Authorities' Practices, in order to identify and propose the most suitable Market Monitoring procedure according the specificities of the Cyprus Electricity Market.

Deliverable 2

This deliverable will include:

1. A detailed, fully justified proposal based on the Cypriot regulatory framework for the most suitable method, process, tools and procedures to be implemented, taking into account the characteristics and the Trading and Settlement Rules of the forthcoming Cyprus Competitive Electricity Market as well as the existing practices and the Market Management software used by the Market Operator. The proposal should include the data that should be requested from the TSO (as System Operator and as Market Operator respectively) as well as how this data should be processed in order for an efficient monitoring of the market is ensured.

The detailed design of the Cyprus Electricity Market Monitoring procedure in the abovementioned paragraph, should include all the interaction and/or interface points and/or processes with the other stakeholders of the Market, as well as which data should be processed and how the will be processed, in order to ensure an efficient monitoring of the market and to assure that there is no abuse of possible Market Power. This should include everyday processing as well as possible ad hoc cases. The proposed procedure should be documented in a detailed Report and be of such form that can be immediately applicable by CERA.

The monitoring procedure must ensure that illicit behaviors are identified, proven, and assessed in terms of intensity, impact and frequency.

The proposed Cyprus Electricity Market Monitoring procedure can include (not necessarily) software and hardware used by CERA in order to collect, process, interpret and store the data required to identify and asses illicit behaviours of the Market Participants.

Alternatively, procedure can incorporate the use of the MMS deployed by the Market Operator.

2. A high level description of the proposed Electricity Market Monitoring procedure which will be used at the discretion of CERA. This description could include a list of possible Frequently Asked Questions and Answers.

Deliverable 3

1. Identification of possible software or hardware necessary (if any) in order to implement the proposed procedure. The identification of the needs should include the specifications of the software or hardware in such a form that it can serve as the basis of a separate Tender

procedure for the provision of a the relevant software and hardware and as part of Technical Specifications of the abovementioned Tender procedure.

2. The activity will result the delivery of a detailed report and software and hardware requirements described should be able to directly be used in the abovementioned Tender.

This deliverable is necessary only if dictated so by the proposal of Deliverable 2.

Deliverable 4

1. Provision of technical evaluation of the Tenders for the specified software and hardware (as per Deliverable 3) and supervision of the implementation process of the solution, as per the outcome of the abovementioned tender, in order to assure that the technical, operational and other criteria are met. The technical evaluation should of the submitted tenders aims to aid CERA in evaluating the technical offers of the suppliers.

This should include a comparison of the technical, operational and other criteria of the proposal and a report describing which proposal better meets the required specification and how it meets them.

2. Assessment upon the installation of the software and/or hardware of the awarded tender in order to ensure that technical, operational and other criteria are met and properly implemented.

This deliverable is necessary only if dictated so by the proposal of Deliverable 2.

Timeframe of implementation the contract scope:

- Deliverables 1, 2, 3 and 4 will be submitted successively.
- Deliverable 1 will be submitted within four (4) weeks from the signature of the contract.
- The Contracting Authority will provide feedback on the content of Deliverable 1 within one(1) week from its submission.
- Final version of Deliverable 1 will be submitted within six (6) weeks from the signature of the contract.
- An outline of Deliverable 2 will be submitted within three (3) weeks from the submission of Deliverable 1.
- The Contracting Authority will provide feedback on the content of the outline of Deliverable 2 within two (2) week from its submission.
- Initial version of Deliverable 2 will be submitted within fifteen (15) weeks from the signature of the contract.
- The Contracting Authority will provide feedback on the content of the Deliverable 2 within one (1) week.

- Contracting Authority and Contractor will discuss final details of Deliverable 2 for two (2) weeks further after the provision of feedback.
- Final version of Deliverable 2 will be submitted within eighteen (18) weeks from the signature of the contract.
- Initial version of Deliverable 3 will be submitted within twenty two (22) weeks from the signature of the contract.
- The Contracting Authority will provide feedback on the content of the Deliverable 3 within one (1) week from the submission of the initial version of Deliverable 3.
- Contracting Authority and Contractor will discuss final details of Deliverable 3 for two (2) weeks further after the provision of feedback.
- Final version of Deliverable 3 will be submitted within twenty five(25) weeks from the signature of the contract.
- Part 1 of Deliverable 4 will take place upon the finalization of a separate Tender procedure which is expected to take place in the fourth quarter of 2022 and conclude in the first quarter of 2023. It will be submitted within two (2) weeks of the delivery of the separate Tender results to the Contractor.
- Part 2 of Deliverable 4 will take place upon finalization of the scope of contract of the separate Tender procedure which is expected to take place in the first quarter of 2023 and conclude in the fourth quarter of 2023. It will be submitted withing two (2) weeks of granting access to the installed software to the Contractor.

4.2 Project Management

4.2.1 Organisational structure

Organisational structure of the Contracting Authority

The Contracting Authority will appoint a Project Manager and Steering Committee (SC) for the supervision and coordination of the overall progress in the implementation of the Contract Scope and of the relevant activities, sets priorities, provides guidance, and evaluates and approves the results (deliverables and reports).

The Contracting Authority shall provide the personnel necessary to manage and resolve issues related to the management of the Contract.

The Project Manager, shall be responsible for overall coordination of the implementation of the Contract Scope and for submission of all official contract documents for approval. Project Manager shall be the contact person for all communications with the Manager to be appointed by the Contractor.

Organisational structure of the Contractor

The Contractor shall be responsible for the performance of all phases of the Contract Scope, until final acceptance by the Contracting Authority. This includes management of the Project and ensuring the coordination of all Contract Scope activities.

As such, the Contractor shall appoint a Project Team, with at least three (3) Key Experts having the minimum qualifications indicated in paragraph 6.4 of Part A of the Tender Documents. Thus the Project Team should include:

Key Expert 1: Contractor's Project Manager

Key Expert 2: Electricity Markets Expert

Key Expert 3: IT Expert

Tenderers may also include in the Project Team other experts, if they deem that necessary for the successful implementation of the Contract Scope. The cost of optional supporting personnel must be considered when defining the financial offer or the fee rates for the experts.

The Project Manager shall be available throughout the implementation of the Contract Scope. The Contractor's Project Manager shall be the Key Expert 1 and shall be supported by the Contractor's team of experts and the other members of the Contractor's Project Team.

The duties of the Contractor's Project Manager shall be as follows:

- Definition of the work plan and of the critical points, so as to ensure the quality of the services provided and the timely implementation of the individual Contract Scope activities.
- Overall responsibility for delivery of the results (deliverables, services provided) of the Contract.
- Preparation of the inception, progress and completion Reports, with clear references to the results achieved.
- Coordination of the participation and responsibilities of the experts who will perform the Contract Scope.
- Maintaining close and ongoing cooperation with the Contracting Authority (and its competent bodies: Project Manager and SC), and provision to it of information updates on the implementation progress, the work carried out and the solutions or alternatives adopted.
- It is noted that all communication should be addressed at regulator.cy@cera.org.cy.

The Contractor shall bear all costs in connection with the implementation of the Contract Scope. More in particular, the Contractor shall bear the accommodation, subsistence and travel costs for the Project Team members. The Contractor shall ensure sufficient resources for translation, interpretation, printing etc., as required by the Contract Scope activities in each case.

4.2.2 Facilities to be provided by the Contracting Authority

The Contracting Authority will assure that the Contractor will have access in all the information that may be required from the Transmission System Operator and/or other market participants and will facilitate meetings with responsible personnel if required. The Contracting Authority is not obliged to provide any confidential information related to the above issues.

5. LOCATION AND DURATION OF CONTRACT SCOPE IMPLEMENTATION

5.1 Location of Contract Scope implementation

Completion of the scope of work will take place at the premises of the Contractor. If necessary, meetings can be held at the premises of the Contracting Authority or wherever else needed. Meetings with the Contracting Authority can be arranged on a virtual basis. The Contractor should arrange virtual meetings to present the final deliverables to the Contracting Authority.

5.2 Duration of Contract Scope implementation

The period of implementation of Deliverables 1, 2, and 3 of the Contract Scope shall be **25 weeks** from the date of commencement of the contract.

The period of implementation of Deliverable 4 of the Contract Scope shall be 2 weeks from finalization of a separate Tender procedure for the provision of software and hardware and 2 weeks after access to the installed software is granted.

6. REQUIREMENTS

~~6.1 Office accommodation~~

~~The Contractor is required to maintain at its own expense an office at the premise(s) where the Contract is executed or in other locations as appropriate for the execution of the Contract.~~

~~Any accommodation costs are to be borne by the Contractor, and such costs shall not be additional costs but shall be included in the Contractor's financial offer.~~

6.2 Facilities to be provided by the Contractor

The Contractor should ensure that experts are adequately supported and equipped. In particular, its should ensure that there is sufficient administrative, secretarial and interpreting (if required) provision to enable the experts to concentrate on their primary responsibilities. The Contractor must also transfer funds as necessary to support its activities under the Contract and to ensure that its employees are paid regularly and in a timely fashion.

7. REPORTS

7.1 Reporting requirements

Relevant reports should be submitted to the Contracting Authority according to the provisions of paragraph 4.1 of this Annex.

The Contractor shall submit Ad-hoc Reports whenever it deems that it should inform the Contracting Authority of significant issues or when it is requested to submit an opinion on special issues related to the Contract Scope.

7.2 Submission and approval of Reports

All the Reports of the above paragraph should be submitted in three copies to the Contracting Authority, for the attention of the Project Manager.