



European  
Commission

**Joint Research Centre**

Directorate for Energy, Transport and Climate  
Energy Security, Distribution and Markets Unit

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**ANNEX I TO CONTRACT TBC**

**NL-Petten: Study on proposals on potential market power mitigation measures for the  
Hellenic electricity market – Lot 3**

**– Tender Specification – Part 2 - (Terms of Reference) –**





## **1. CONTEXT**

The Directorate for Energy, Transport and Climate (Directorate C) is one of the seven Directorates of the Joint Research Centre (JRC) of the European Commission. The Directorate C is based in Petten (the Netherlands), Seville (Spain) and Ispra (Italy), and has a multidisciplinary team of more than 300 scientific, technical and support staff. The mission of the JRC-C is to provide support to Community policies and technology innovation to ensure sustainable, safe, secure and efficient energy production, distribution, and use, and to foster sustainable and efficient transport in Europe.

The Energy Security, Distribution and Markets Unit of the JRC-C is carrying out quantitative techno-economic analysis to evaluate energy security, as well as working on issues relevant to ensuring the uninterrupted physical availability of energy products on the market at an affordable price for all consumers. The Unit assesses how different policy options help shape an energy system resilient to shocks and adverse trends whilst satisfying society's energy needs. In this context, the Unit has an active role on investigating implementation issues of the EU Internal Energy Market.

JRC is currently providing support to SRSS on the necessary regulatory reforms by the Hellenic Republic in order the electricity market of the latter to comply with the EU Target Model. In the context of this activity JRC is interested in exploring market power mitigation measures for the efficient operation of the reformed electricity market. In this respect JRC is interested in acquiring support on the implementation of the above task. The work will be conducted in close cooperation with SRSS and the responsible Hellenic Authorities (the Hellenic Regulatory Authority for Energy – RAE).

### **1.1. Background**

According to the provisions of the Hellenic Law 4336/2015, the Hellenic State has to implement significant energy reforms, including the adaption of the Hellenic electricity market to the EU Target Model by the end of 2017. Consequently, the Hellenic Parliament voted recently the “Target Model law for the Hellenic State” (Law 4425/2016) which provides the general framework for the implementation of the Target Model in the Hellenic wholesale market.

The Hellenic authorities envisage the creation of a Forward Market with forward contracts on electricity, both Over-The-Counter (OTC) and centrally-traded (organized Forward Market), a reformed, energy only Day Ahead Market, an Intra-day Market and a Balancing Market which are fundamental aspects of the EU Target Model. Compliance with the Target Model will also require the Hellenic TSO to implement a series of operational procedures relating to Market Coupling in the Day-Ahead and the Intraday Markets.

It is noted that apart from the Law 4425/2016, and the Guidelines of the Hellenic Regulatory Authority for Energy (RAE), the Hellenic Authorities have already conducted an extensive consultation on the High-Level Design of the above markets, with a main characteristic being the adoption of a Central Dispatch System. The above sources, along with all related EU and Hellenic legislative provisions will form the basis for the Detailed Level Design of the



Hellenic Electricity Market, and the compilation of the respective Market Codes as well as the necessary changes and additions to the Operational Code of TSO and the high-level IT functional design specifications. All not-publically available sources and data will be provided by JRC to the Contractor under a Confidentiality Agreement. It is noted that some of these sources and/or data may be available only in Greek.

## **2. PURPOSE AND OBJECTIVES**

The primary driver for the work is to support the reform of the Hellenic Electricity Market in order the latter to comply with the EU Target Model. Particularities of the Hellenic electricity market such as the existence of an incumbent with large majority market shares both in generation and supply must also be taken into account for the efficient operation of the reformed electricity market. In this respect, the work aims at investigating market power mitigation measures with a particular emphasis on the long-term contracts (Forward Market and OTC contracts), with an aim to secure adequate liquidity in the Day-Ahead Market.

Given the specific details of the Hellenic Electricity Market, and System, the proposed power mitigation measures should comply with the EU Target Model, the EU laws and guidelines on fair competition and best international practices. Moreover, the proposed power mitigation measures should be evaluated by detailed market models and simulations. Initiatives with Regional significance as well as other regulatory interventions by the Hellenic Authorities and developments in the Hellenic Market, such as the NOME auctions, should also be taken into account. In this respect, close cooperation between the Contractor, JRC, SRSS, and RAE is expected.

It is noted that the Hellenic authorities are particularly interested in studying the imposition of a hedging ratio between long-term contracted volume (in both Forward Market and OTC contracts) and Day-Ahead traded volume for suppliers exceeding a certain market share. As such, the investigation of this particular measure, and the definition of an appropriate hedging ratio by market simulations, will be a subtask of particular interest.

## **3. DESCRIPTION OF THE TASKS TO BE COMPLETED UNDER THIS TENDER**

### **Task 1. Qualitative study on potential power mitigation measures**

The study will identify potential market power abuse strategies and subsequently cover best practices in EU and international level of power mitigation measures in electricity markets with a particular emphasis on the interaction between Forward Markets and OTC contracts, and Day-Ahead Markets, in order to ensure that there is enough liquidity in the latter to operate efficiently. The Report should analyse in detail the compliance of the presented measures with the EU Target Model, and the competition laws and regulations of the European Union.

### **Task 2. Quantitative study on expected impact of identified power market measures based on market simulations**

In this task, the identified power mitigation measures will be evaluated quantitatively employing detailed market models and tools. Of interest is the impact of the examined measures on the trade-offs between economic freedom of market participants, return of



investments, Day-Ahead Market liquidity, wholesale electricity prices, and overall social benefit.

#### **4. DELIVERABLES**

The contractor shall deliver the following documents:

- i. A Report on qualitative analysis of potential power mitigation measures
- ii. A Report on quantitative analysis of identified power mitigation measures based on market simulations

Both documents shall be in English.

An Interim Report on the qualitative analysis will be delivered at the latest five (5) weeks after the signature of the Contract. JRC-Directorate C, Energy Security, Distribution and Markets Unit (JRC-C.3) shall have seven (7) days from the reception of the Interim Report to make observations and/or suggest modifications. The Contractor shall have fourteen (14) days in which to submit additional information, according to the observations made by the JRC-C.3, and deliver the Final Report on qualitative analysis.

An Interim Report on the quantitative analysis will be delivered at the latest ten (10) weeks after the signature of the Contract. JRC-Directorate C, Energy Security, Distribution and Markets Unit (JRC-C.3) shall have fourteen (14) days from the reception of the interim report to make observations and/or suggest modifications. The Contractor shall have fourteen (14) days in which to submit additional information and complete the Report according to the observations made by the JRC-C.3. The submitted Final Draft will be reviewed by JRC-C.3 inside seven (7) days, upon which the Contractor will have fourteen (14) days to deliver the Final Report on quantitative analysis of identified power mitigation measures.

The production and delivery stage shall not exceed overall four and a half (4 1/2) months from the contract's entry into force and shall follow the milestones table below.

<b>Deliverable</b>	<b>Deadline</b>
Interim Report on qualitative analysis of potential power mitigation measures	Week 5
Final Report on qualitative analysis of potential power mitigation measures	Week 8
Interim Report on quantitative analysis of identified power mitigation measures	Week 10
Final Draft Report on quantitative analysis of identified power mitigation measures	Week 14
Final Report on quantitative analysis of identified power mitigation measures	Week 17

#### **5. OTHER CONDITIONS**

All delivered documents will be in English.

The contracting authority has included a template in annex of these technical specifications, which shall be used by the tenderer in all its reports as to conform to the corporate visual



identity of the European Commission. Any major deviations are subject to prior approval from JRC-C.

The final study reports of all tasks shall include:

- an abstract of no more than 200 words and an executive summary of maximum 6 pages;
- the following standard disclaimer:

“The information and views set out in this study/database/model are those of the author(s) and do not necessarily reflect the official opinion of the Commission. The Commission does not guarantee the accuracy of the data included in this study. Neither the Commission nor any person acting on the Commission’s behalf may be held responsible for the use which may be made of the information contained therein.”

- specific identifiers which shall be incorporated on the cover page provided by the Contracting Authority.

This disclaimer shall be accompanied by the following sentence “*Reproduction is authorised provided the source is acknowledged*”. However, before displaying the above mentioned sentence either of the following conditions must be fulfilled:

- no third-party textual or artistic material is included in the publication without the copyright holder’s prior consent to further dissemination and reuse by other third parties;

or

- an additional notice specifies that the reproduction of the third-party textual or artistic material included in the study is prohibited.

The contractor shall provide an executive summary in English and with the aforementioned standard disclaimer and possible specific identifiers. The executive summary of maximum 6 pages, shall provide information on the (i) purpose / motivation / problem statement, (ii) methodology / procedure / approach, (iii) results / findings and (iv) conclusion / implications / recommendations of the study.

### **Meetings**

The study will be followed by Energy Security, Distribution and Markets Unit (JRC internal working group) with the participation of the Contractor. Conference calls are organised by JRC-C.3 with the contractor and possibly SRSS and Greek stakeholders every two weeks. At the latest one week after each telephone call, the contractor shall provide meeting minutes, to be approved by JRC within one week.

In addition to the telephone conferences, the following one-day meetings are planned between JRC and the Contractor in Greece, with possible participation of other project stakeholders:





When	Physical Meeting
Week 1	Meeting 1 – Kick-off
Week 12	Meeting 2 – Presentation of Final Report on qualitative analysis. Presentation of Interim Report on quantitative analysis and discussion on comments
Week 15	Meeting 3 – Presentation of Final Draft Report on quantitative analysis and discussion on comments

The physical presence of the Contractor in those meetings is required.

### **Place of performance**

The tasks will be performed on the Contractor's premises with the exception of the meetings.

## **6. REPORTING**

The reports and any other document shall be written in English language and shall be submitted in electronic format via e-mail using both Microsoft Word 2010<sup>®</sup> for Windows format and in Adobe Portable Document Format<sup>®</sup> (PDF). A copy of the final deliverables shall be provided on electronic format.

## **7. DURATION**

The maximum duration of the tasks shall not exceed four and a half (4 1/2) calendar months as from the moment the contract has entered into force.

## **8. LANGUAGE**

The language of all deliverables, meetings, presentations and exchanges will be English. If necessary, the references and sources can be given in the original language, followed immediately by a translation given in English between parentheses.

It is expected that the written text in the deliverables is of a high standard language, ideas are expressed in clear and logically structured way. The text of all deliverables will be strictly assessed according to these criteria in the review process.

## **9. PRICING CONDITIONS**

One total fixed price including all costs related to the performance of the contract shall be provided in the tender. This total fixed price is to include all costs related to performance of the tasks as described in the contract. All physical meetings shall be held in Greece.

## **10. OWNERSHIP OF THE DELIVERABLES**

It is under the Contractor's responsibility to obtain the necessary rights and ensure that all sources utilized for producing the deliverables of the present service's contract may be used



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by the Commission with unlimited access. All costs incurred in the licensing of the necessary property rights shall be included in the price of the tender.