

H A N D B O O K



MEDREG Experts Exchange  
for the Lebanese Centre  
for Energy Conservation (LCEC)

## TRANSPARENCY AND ACCOUNTABILITY IN RENEWABLE ENERGY AUCTIONS

27-29 July 2020



**MEDREG**  
MEDITERRANEAN ENERGY REGULATORS



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IN RENEWABLE ENERGY AUCTIONS**

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## CONTEXT

The factors influencing renewable energy policies have shifted substantially in the past decade. This change is mainly due to the fast decline in the cost of renewable energy technologies, the increasing share of variable renewable sources in the national energy mix and their neutral environmental impact.

In this process, energy regulators play a pivotal role in RES deployment, and they can offer several support schemes. Among them, **auction mechanisms have become increasingly popular due to the design's flexibility, the increased certainty in prices and quantities, the degree of commitment and transparency and, most importantly, their potential for supporting price discovery mechanisms and guiding the evolution of price trends.** Besides, the number of countries that have adopted renewable energy auctions has also steadily increased in the Mediterranean region.

Consequently, MEDREG carried out a report on the **"Analysis of auction mechanisms to promote RES"** in 2019 to identify their predominant features with a view of assessing their strengths, weaknesses, opportunities and threats, while also formulating recommendations on how to improve them.

**The Lebanese Centre for Energy Conservation (LCEC) is planning to further improve its capacity for developing renewable energy auctions and has requested the assistance of MEDREG on how to improve transparency and accountability within its bidding procedures to make them more useful.** In light of this collaboration, **transparency and accountability** are fundamental aspects as they can offer greater regulatory certainty to investors while also minimising the risk of remuneration and market distortion. These possibilities will occur if a transparent, fair, open and timely procurement process is ensured and if commitments and liabilities of each party are highlighted, taking into account the different methodologies and systems deploying these renewable energy sources in the region.

**The role of regulators is imperative to perform the majority of these auction mechanisms and procedures.** The regulators provide the confidence needed in the market by creating good governance with all the stakeholders involved in the process. They also receive feedback from the auctions and process it to generate a transparent and fair mechanism in the different countries of the system.

**The objective of the experts' exchanges is to introduce Lebanese stakeholders to the best European practises related to transparency and accountability within all stages of renewable energy auctions and bids, as well as to initiate the identification of gaps within the current Lebanese procedure.** Therefore, the review analyses the Lebanese auction procedure in each of its phases, looking at how Mediterranean regulators have worked to improve transparency and accountability rules within its RES-E auction procurement procedure and examines how the same process could be applied to the Lebanese context.

## II. DAY 1

### 1. INTRODUCTION TO THE LEBANESE AUCTION PROCEDURES

#### INTRODUCTION TO THE LEGAL AND POLICY FRAMEWORKS

In 1964, decree number 16.878 established a **vertically integrated electricity company in Lebanon**. This forbade granting licenses or authorisations to generate electricity to anyone. In 2002, law number 462 set the **rules and principles for the regulation of the electricity sector**. It included provisions for the unbundling of the electricity activities, licensing and authorisations and provisions for setting up an electricity regulatory authority.

Since 2002, several amendments were issued on law 462 which grant the authority to issue permits and licenses to the Council of Ministers and temporarily until the appointment of the regulator. According to these amendments, the Council of Ministers could issue permits and licenses to the private sector to generate electricity. The latest amendment was made in 2009, law 129 grants the Council of Ministers this authority until April 2024. According to the latest revision, **the Council of Ministers can issue permits and licenses**, based on a joint proposal by the minister of Energy and Water and the Minister of Finance. For the different stakeholders' role, the Council of Ministers (CoM) issues licenses to the private sector participants and generates electricity based on a joint proposal by the minister of Energy and Water and the Minister of Finance, who generally has a representative in the evaluation committee to ensure a level of transparency. In the end, the Minister of Finance has to co-sign the joint proposal to the Council of Ministers to issue the licenses.

**LCEC main function is to assist the Ministry and forward all results to the Minister for approval.** However, it also assists the Ministry of Energy and Water in developing and launching all documents related to the request for proposals, participates in the Evaluation Committee, prepares the power purchase agreement templates and works in the negotiation process based on the requirements and guidance of the Ministry of Energy and Water.



## THE KEY PLAYERS IN THE LEBANESE RENEWABLE ENERGY AUCTION AND PIPELINE PROJECTS WITHIN THE FRAMEWORK:

### Client:

The Government of Lebanon duly represented by the Minister of Energy and Water.

### Sellers:

Bidders selected through the RFP requirements, which were granted licenses by the Council of Ministers (CoM) through applicable legal framework and who signed the Power Purchase Agreements (PPAs).

### Role of EDL:

Accedes to the PPA to perform specific Client obligations and rights that fall within its mandate as per Decree No.16878 from 1964 (such as acceptance and purchase of electricity).

## THE PROJECTS IN THE PIPELINE

- 1. The first round** focuses on wind energy and comprises three projects with a total capacity of 226 megawatts in the process. The PPAs are assigned and the projects are reaching financial closure.
- 2. The Solar 180 megawatts project** comprises 12 solar farms and is conceived to be included in the three-year licensing fees. LCEC expects to have the licenses issued soon for these projects.
- 3. The second round** of wind-focused operations consists of four projects with a capacity between 260 megawatts and 520 megawatts. The request for proposals has been issued and the bidders present their offer by December 2020.
- 4. The solar plus storage project** includes six PV plus batteries with a total capacity of 300-megawatt peaks. The LCEC issued the call for expressions of interest and received answered from many companies. Currently, the project is in the phase of development of the request for proposals.

### Auctioneer:

The Ministry of Energy and Water (MEW).

### Bidders:

Project developers generally in the form of bidding consortia comprising local companies with RE experience in Lebanon and international companies with experience in large-scale RE.

## THE SUPPORT SCHEME FOR RENEWABLE ENERGY

The law 444 of 2002 includes and tackles the **protection of the environment**. It includes a 50% reduction in customs and a 50% reduction in taxes for equipment or activities that have an environmental value. The expectation is that the application of this law will be beneficial for large-scale renewable energy development.

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## APPLYING TO LARGE-SCALE RENEWABLE ENERGY PROJECTS

The **call for Expression of Interest (EOI)** includes information about the weather, its financial situation, the proposed project's location, the proposed point of interconnection, the proposed capacity and details on the level of maturity of the project. The participants have to fill out a two-page form and include any supporting information. The document also includes information on the policy background, the project framework and instructions to bidders on the submission of their EOIs. At this stage, there is no prequalification or evaluation of the received EOI, LCEC simply compiles the received answers from the interested bidders and publish a list of interests on the website.

Moreover, the **phase of the Request For Proposals (RFP)** takes from 3 to 12 months between the development of the RFP and the offer's submission. The RFP is prepared in-house by LCEC based on the Minister of Energy and Water's decisions and guidance. Once the RFP is ready, it is approved by the Ministry of Energy and Water and forwarded to the ALP for comments. If there are any additional comments, it is sent to the interested bidders once the RFP is ready.

The **deadlines** are specified, including a deadline for the four questions from the bidders, an annexe to ensure that the submitted level of information is comparable. The LCEC have a specific email address whereby bidders can communicate with them, but they cannot reach them via phone. However, non-verbal communication is allowed, and once the bidders' questions are received, the LCEC starts to file them. Afterwards, a set of questions and answers are prepared and sent to all bidders so they can have access to the same level of information.

The request for proposal is technology-specific and includes multiple projects. In the end, only three to twelve projects are selected, depending on the technology requested. Each project has a set range of capacity, and each bidder has the right to apply for one project or one proposal. Therefore, LCEC divided Lebanon into four regions with three solar projects in each.

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## THE BIDDER IS RESPONSIBLE FOR:

- **choosing the land and the points** of interconnection, the bidders must submit all related supporting documents.
- **all authorisations required**, including the grid connection and an environmental impact assessment.
- **all bids that need to be sealed**, the administrative and technical envelope are separated from the financial offer, they are all in sealed envelopes, and normally a maximum sealing price is set as a qualification required for the bidders.

## SPECIFIC INFORMATION THAT IS REQUESTED FROM THE BIDDER

- The bidder needs to **submit all legal documents**, registration documents, powers of attorney, and joint venture agreements. The attorney needs to submit proof of minimum past renewable energy experience in Lebanon and proof of past international experience in large scale renewable energy.
- The bidder needs to submit proof of minimum team experience.
- The bidder needs to fill a form for each team member.
- The bidder is required to submit proof of financial capability, a commitment to each commercial operation within a specified time duration.

## THE EVALUATION

It's a four-stage evaluation process:

### The first stage is the qualification scale.

There is a review for compliance with the minimum requirements and the submission of all required documents, including the guarantee.

### The second stage is the scoring capability and technical scoring.

Each bidder enters the court with over one thousand points based on the management resource plan, methodology and design. Additionally, the committee, including representatives of the Ministry of Energy and Water, the Ministry of Finance and LCEC, provides technical assistance and opens all proposals verifying they have been correctly sealed. LCEC takes aside all financial proposals, puts them together in a box, and closes it. Also, it opens the administrative and technical envelopes to verify, confirms that the bonds are accurate and asks for the form. If the financial proposals are open or if the bonds are not as they were, then the budget is automatically disqualified.

### The third stage is the reviewal.

Once the bidder passes this initial phase, all proposals are transferred to LCEC to start reviewing them in the first stage of this evaluation. Usually, two people from LCEC review each proposal, and then two other people do the cross-evaluation of the whole proposals. After the evaluation, LCEC submits the report to the committee. The com-

mittee reviews the report to validate the evaluation. It may decide to request clarifications or just decide to disqualify the bidders that did not pass this phase.

The ministry and the committee may decide to request clarifications from non-compliant bidders. Once LCEC has a set of qualified bidders, the proposals are transferred to NCDC for evaluation in stage two where the same process is done. LCEC have to evaluate that which is assigned to each proposal and then to other evaluators to do the evaluation and compilation of all scores.

### The final stage is the financial proposals.

At this stage, the selected bidders are informed that they are qualified and are invited for the opening of the financial proposals, while the bidders with the lower scores are informed that they are disqualified.

## THE FINANCIAL EVALUATION

At this stage, the presence of the representative of the Ministry of Finance is essential. **Any proposal above the maximum selling price is disqualified, and the LCEC choose**

**the lowest tariffs to move to the next stage depending on the project.** Furthermore, the selected bidders pass to the negotiation phase, and the bidders are asked to meet the lowest tariff received by the lowest bidders.

**The PPA is not signed based on their proposal but based on all bidders' lowest proposal.** The bidders have 30 days to review their financial models and accept the lowest tariff. Otherwise, the ministry has the right to negotiate with them or disqualify them. At the end of this process, the evaluation committee reports to the minister of Energy and Water who may request further negotiation or request to rely on some international consultant opinion to verify the tariffs' adequacy. The Minister of energy informs the selection of the negotiation phase. Once the Minister of Finance approves the report, a joint proposal is sent to the Council of Ministers, who grants the licenses.

Occasionally, the minister of Energy and Water requires further negotiations on the tariffs to discuss and sign the PPA. The Council of Ministers needs to approve certain clauses in the power purchase agreement, namely the force measure clauses, the arbitration clauses and the waiver of sovereign immunity, the letter of credit, the guarantees on payment, the guarantees on termination and foreign ownership and lease of land. Usually, the decision to grant licenses includes deadlines for the power purchase agreement's signature, deadlines for the financial closure, and deadlines for the commercial operation.

## THE EXPERTS' EXCHANGE HELPED IDENTIFY SOME KEY WAYS TO IMPROVE THE PROCESSES

### Weaknesses in terms of accountability or transparency in our process

#### Political weaknesses

In terms of the political weaknesses each time the Council of Ministers changes either by resigning or at the end of term, LCEC Lebanon have to reset the whole evaluation negotiation process to form a new committee. Any political disagreements between the Minister of Finance and the Minister of energy and water slow down the process. In the end, the power purchase agreement needs approval from the Council of Ministers, who always has the right to request further reductions in interest.

#### Technical weaknesses

The LCEC does not have:

- A grid model publicly available that the developers can use to assess the impact of their project.
- **Clear grid** access rules or grid connection requirements to be used by the developers.
- **A clear list of authorisations** for each type of technology.
- One destination where the developers can **request some authorisations** needed for their projects. **The process is relatively slow.** Some items in the scoring of stage two are subjective.
- The LCEC did not include some **mitigation measures** to eliminate the risk of under building.
- A process to **establish renewable energy projects.**

The bidders must submit a bid bond, which is a financial guarantee if they withdraw from the bid or do not accept to sign the papers at the end. Also, there are guarantees submitted by the bidders, which are transferred to the power purchase agreement. In the case that they do not stand by them, there are penalties for underperformance.

## 2. RES-E AUCTIONS IN THE MEDITERRANEAN REGION

The Lebanese Centre for Energy Conservation (LCEC) allows MEDREG to provide some initial recommendations on improving transparency and accountability in its selection procedures. This training aims to identify the necessary steps and actions to be taken in the future towards achieving this target.

### MEDREG RES-E WORKING GROUP 2019 OVERVIEW

Renewable energy auctions have become the **new standard for determining funding levels** for renewable energy sources. In contrast, over the past years, many countries have implemented those further developed

auctions to deploy it. This allows identifying good practices, as well as pitfalls and lessons learned from individual cases. One of the possible reasons for the complete and rapid distribution of auctions is that they are not tied to specific markets, agreements or regulatory frameworks. Nonetheless, single purchase markets, and even vertically integrated monopolies, have turned to auctions as a means of protecting private investors.

**The study's objective was to gather and share information on the RES-E auction practices by MEDREG member countries across a wide region. The report seeks to analyse the renewable energy auctions applied in the Mediterranean. Around 15 members MEDREG countries have participated in the study and that data was included in the report.**

### THE PROCESS OF THE AUCTION

The design process for the auctions requires capacity and resources. **It is usually inspired by individual policy objectives and the current market situation.** The optimal choices regarding design, auctions type, the price mechanism and other issues depend on these two fundamental factors. **No single perfect auction design exists as**



**auctions need to be tailored to the specific situation. Otherwise, competitiveness and efficient outcomes might be in danger.**

Therefore, the auction design process should start with extensive market research regarding the targeted technologies' project pipeline and the potential market participants like bidders and their comparative competitive positions. Design changes can be made in many cases to ensure high participation and optimise the auction scheme. It is usually recommended to test the draft auction with the stakeholders, especially regarding the impact on different actor groups. Preferential treatment options could be implemented to adjust for unwanted effects on certain actor groups. Finally, short and long term consequences of the auction are to be analysed and monitored through the temptation of an auction designed and continuously updated based on these results, as well as based on the change points to go to market environments since all projects have to be specifically tailored to individual market situations.

**It is imperative to monitor the results** and the outcome of the auction and continuously adjust the design to sending an auction around. The most important thing is the consultation at the initial step and that the stakeholders' design auctions get really good feedback from them to avoid mistakes in the future.

## AUCTION TYPES

- **The static auction:** one bid is submitted for each project, and then the auctioneer evaluates all bids. During the process, the bidders don't know the bids submitted by their competitors.
- **The dynamic auction:** the bidding takes place over several rounds, allowing the bidders to observe the development of the auction price and other bidders to make arrangements during the auction process.

## CATEGORIES OF COMPETITIVE PROCEDURES

- **Price-based tenders:** the bids with the lowest offered support levels will be awarded.
- **Multi-criteria tenders:** the awarding of a bid is subject to an evaluation of several criteria. Lebanon is using the type of auction as the dynamic auction, where BP takes place over several announced bidders.

This is a chance to observe the development of the auction price further and adapt bidding strategies during the auction process. The tender's main objective is a competitive bidding procedure to determine cost-efficient support levels for technologies, different types of scheme success. However, all of them require a thorough and consistent design and a sufficient competition level to be effective.

## THE ROLE OF THE REGULATORS

The regulators know perfectly the auction procedure. Usually, the design of a tendering scheme for determining the level of support falls to the national Ministry's remit. While the implementation of the tendering procedures may be the tasks of different public or private entities in some countries, in that cause the National Regulatory Authority (NRA) is in charge of putting out the tenders. Alternatively, the implementation of the process may also be delegated to a Public Interest Company. In other words, the NRA does not always play a role in implementing the tendering procedure, even though this will be the best case to ensure the transparency of the procedure.

The weighted average price per megawatt hour and technology resulted from the latest auctions in each country from the data available: Portugal secured the lowest price for PV in the auction held in 2019. Greece secured the lowest price for onshore Wind in 2018, and Italy secured the lowest price for Biomass in the 2016 auction. Of course, the prices might fall more than this with the new options something that we will see from the latest case studies in the next few days. Cyprus, Egypt, France, Portugal and Israel have used an electronics platform for the tendering procedure. Algeria, Cyprus, France, Israel, Lebanon and Slovenia have also used the safety net value for the bid price by using price caps.

## REQUIREMENTS AND THE CONTRACTS OF THE BIDDERS THAT WERE USED DURING THE TENDERING PROCEDURE

There are additional requirements used during the tendering procedure. For instance, there are requirements for the financial adequacy, experience, technological and professional requirements, location constraints, and a guarantee from a bank or credit institution to access permit requirements. In Lebanon, Italy, Jordan, Slovenia and Greece, the same terms apply for all eligible technologies.

This report aims to sum up all the responders' comments and comes up with a **SWOT analysis** from their comments.

### Strengths:

- Cost-efficiency due to price competition: useful for establishing competitive pricing
- Investor security linked to long term PPAs
- Policy objectives can be achieved through auctions
- Auctions are useful for volume and budget control
- Flexibility on design.

### Weaknesses:

- Long and cumbersome administrative procedures
- Discontinuous market development
- Possibility of strategic behaviour

- Participating in auctions requires resources that small scale or new project developers may not have
- Competitive bidding may lead to underbidding.

#### Opportunities:

- Development of different Renewable Energy Targets (RETs)
- Large-scale established developers are more likely to win a bid
- The winning prices resulting from healthy competitive bidding can be used to establish cost-based feed-in-tariff (FIT) levels for certain RETs.
- The potential of real price discover.

#### Threats:

- Deficient competition
- Risk of winners' curse and underbidding
- Fail to deliver on-time projects due to unrealistically low bids
- Countries with legally binding targets for RES-E can easily fall back on their plan and targets
- Failure to achieve the minimum mass of participant.

The statement also presented a few international case studies of Germany, South Africa, India, Denmark, and Mexico.

### CASE OF GERMANY

The Germany case is suitable for illustrating some of the points that might be used in the case of Lebanon. The German authorities only introduced RESE in 2015, whereby **the Germans selected the price that was slightly higher than the comparable feed-in tariffs in place at that time.** Auctions led to falling prices and confirming the stability of the mechanism for price discovery. In 2000, 17 Germans held their first auction for offshore wind power, whereby several projects named the strike price of zero. Then they covered their cost from the sale by selling the electricity on the market.

### CASE OF SOUTH AFRICA

South Africa experienced a sharp **decrease in prices** resulting from auctions from sunup to regeneration. This important cost reduction was **due to the effect of the learning curve**, starting with the first Direct Auction Project developers, but also stakeholders such as banks. Another important element in lowering the prices in South Africa is the regular organisation of the auction, even within the country's Renewable Energy Independent Power Project programme. For this reason, it was made crucial to have a road map for RESE auctions and a regular auction procedure.

### CASE OF DENMARK

According to their **auctions for offshore wind power plants**, Denmark had designed the auction process in such a way that essential preparatory steps were already taken before potential developers placed their bids to clear the pact for bidders as much as possible. The design of the auction process also included suitable sites for wind power, installation work selected by the government, and the task for carrying out an environmental impact assessment, which was entrusted to the transmission system operator. Denmark also imposed the required high penalties in case of delays or non-compliance.

### RECOMMENDATIONS

The report provided some recommendations for successfully having tenders.

- **The auction design** needs to be adapted to conscious conditions.
- It is very important to **set clear and transparent auction** procedures and a transparent framework.
- Policymakers need to consider **evaluating the process** at the end of each round.
- The enforcement of long-term rates of **auction Road Map.**

### CONCLUSION

**No single perfect auction exists**, and it is crucial to get the design of the option to consider policy goals and the current market situation of each country. Plus, the auction design should be monetary in order to be monitored. Additionally, this handbook includes demand adjustments for updated policy goals and market environments. Finally, the extent to which each of the strengths and weaknesses affects the outcome of elections depends on the auction design.

### 3. BEST PRACTICES IN RES AUCTIONS: THE PORTUGUESE EXPERIENCE

Portugal's types of auctions are dynamic and managed through a platform where the promoters have to present their bids and framework. There are several prices in the auction for the grid capacity aiming to envisage many solar technologies including almost nine gigawatts of solar technology in the system in 10 years. Based on renewables at the variations, **the objective will be to have 80% of the total energy by 2030.**

#### QUALIFICATION ISSUES

To guarantee the installation of the system's capacity it is important to pay the auction costs. There is also a jury composed of three members that handle the whole process and discuss the questions presented in the qualification phase before planning the auction in order to assure transparency.

The representative in this auction chose the power generators of the solar photovoltaic in a transparent way for a specific grid connection point. Thus, what was sold in the auction was the grid injection capacity in a particular location.

#### THREE PRODUCTS OR THREE TYPES OF REMUNERATION SCHEMES ARE BEING SOLD

**Fixed tariff, the producer sells the energy in the market on a fixed tariff with a 15 years contract. The idea is that the fixed price is lower than the capture price. When the power price is higher than the fixed price, the producers pay the system's difference.**

Another mechanism is the **photovoltaic technology with storage.** This type of technology is dispatchable. Given that it has storage internally, the hours in which energy will be sold to the market can be chosen freely. This mechanism is an ascending clock auction, with six to seven rounds paid as the bid so that each producer receives the to-

tal amount of the bid. It is a building platform accessible via the Internet, though there are also some limits regarding the volume requirements of 10 megawatts minimum with the volume or depending on the type of the injection point. If dealing with the transmission grid, which is a very high voltage level, the minimum bid volume requirement would be 50 megawatts.

#### RESULTS OF LAST YEAR'S AUCTION

The feed-in tariff was **41 euros per megawatt-hour.** The average discount was around 54-55% on the reference feed-in tariff corresponded to an average feed-in tariff of 20 euros per megawatt-hour. It is expected a future price with an average of **40 euros per megawatt-hour.** In some regions, there were more than 20 competitors. In some cases, the ratio between the initial volume's capacity and the capacity auctioned was higher than 20. There were a small number of competitors, so they were not allocated. All the information related to the results, companies and winners were public so the auction was a transparent one.

Each slot has a payment that, consequently, the bidder will need to take action with a compromised Reserve Bank for the system to pay **26 euros per megawatt-hour** over the next 15 years. In this way, all risk to sell energy in the energy in the market is eliminated. This is because technology's cost of energy is lower than the marginal cost discovered in the spot market, and the variable cost of combining cycle gas turbine. For instance, last year a feed-in tariff (FIT) was not set, so the guaranteed remuneration scheme with a FIT, including the French operator, is oriented to solar technology.

Portugal was selling 100 megawatts of grid capacity, and 50 of it was Iberdrola wins. A FIT of 16 euros per megawatt-hour is equivalent to a compromise to pay to the system. This is happening all over the world, therefore, the auction results in Portugal do not expect lower prices.

Dubai and those last auctions were huge for solar photovoltaic projects given that the final price was 12.27 euros. Those types of auctions also depend on the cost of land and are reliant on many situations.



### III. DAY 2

## 1. THE ITALIAN EXPERIENCE IN MANAGING AUCTIONS FOR RENEWABLE CAPACITY

Italy is one of the countries that is most involved in the evolution of renewables and energy efficiency. It has all the sources at an international level to develop renewables and tools such as certificates, feed-in tariff and renewed tariff auction. The contribution of renewables is around one-third of the total renewable energy and electricity used. Italy has already reached the targets agreed with the European Commission. The amount in 2018 was around 80% of the percentage of renewables in total energy consumption.

#### REMARKS

It is fundamental to establish a sustainable framework to guarantee continuity and certainty for studying and developing renewables with a long-term perspective. It is imperative to have the possibility to stay true enough to make it a so-called fine-tuning of incentives. It is essential to work very closely with all the stakeholders, policymakers included, to have the possibility to react because the world is changing quickly.

### THE EXPERIENCE IN AUCTIONS

#### THE LATEST ITALIAN DEGREE OF THE INCENTIVE OF RENEWABLE ENERGY

The rule of GSE is to ensure the proper functioning of the decree, starting from the **publication of operational regulations to the payment of incentives**. The eligible projects are for onshore wind plants, hydroelectric plants, and are chosen among gas plants and photovoltaic plants. It is possible to obtain a feed-in tariff through the way of remuneration of incentives for a plant with the capacity under 250 kilowatt. For capacities above 250 kilowatts, the energy producers can obtain a sliding feed-in premium. That is if **the remuneration is the difference between the guaranteed feeding value**

**and all its electricity market price.** However, if the difference is negative, it must be returned to GSE.

Some sources have the same quotas in terms of registrations and auctions, stimulating the competition to obtain a cost reduction. Particularly when photovoltaic and onshore wind plans are included in the same group A. The group A2, instead, is dedicated to the project on photovoltaic plans realised on building roofs to remove asbestos.

A plant with a capacity above a 1000 kilowatt must participate in auctions. The first criterion in defining ranking is the greater percentage reduction offered for the registrations. The decree defines the calendar for the registered induction procedure starting from September 2019 to January 2022 for each one of them. The energy producers have between 30 and 90 days to send the request. Then the GSE must publish the ranking. The target is to assign a total of 8000 megawatts on civil procedure, of these, more than 6000 megawatt goes to reductions.

#### THE DECREE INTRODUCES THREE DIFFERENT TARIFF DEFINITIONS

- A reference tariff.
- In the auction, it is mandatory to offer a percentage reduction of a minimum of 2% and a maximum of 70%. Also for people registered, it is possible to offer a percentage of reduction.
- The bid will be the reduction of tariffs.

The decree also defines the deadline to enter into operation. A photovoltaic plant with a capacity of three megawatts has two years to enter into operation. They can even start the plant construction before the inclusion in the ranking.

#### THE RESULTS OF THE TWO FIRST AUCTIONS FOCUSED ON "GROUP A" WIND AND PHOTOVOLTAIC PLANTS

In the first procedure, the GSE has admitted the 500 megawatts with an average of 57 euros in the second procedure. Additionally, GSE has omitted the 425-megawatt with an average of a tariff of 64 euros. The auction needs a break-in period for operators to become familiar with the mechanism. The power quarters can be used and the participation of wind and photovoltaic plant in the same power quarter is determined for the competition and the reduction of a system of costs.

The induction procedure before 2016 was always significantly high-

er than the average selling price of energy on the market. The tariffs awarded in the auction procedure of 2016 were comparable to the price of energy. The tariff awarded in the auction procedure in 2019 was, for the first time, lower than the price of energy. Though the trend is not confirmed in the first procedure of 2020, probably due to the coronavirus incidence. In any case, the average of a tariff is lower than the tariff of 2016. The remuneration is the difference between guaranteed feeding value and the red zone at the electricity market price. If the difference is negative, it must be returned to GSE. So probably this is the way to turn incentives into the PPA.

## 2. THE ROLE OF CRE IN RENEWABLE ENERGY AUCTIONS IN FRANCE: ENSURING TRANSPARENCY AND SUCCESS IN THE PROCEDURES

### THE ROLE OF CRE IN RENEWABLE ENERGY AUCTIONS

The role of the Commission de Régulation de l'Énergie (CRE), regarding the French renewable energy sources auctions, is to ensure the transparency and the success of these procedures. On the other hand, the Ministry of Energy

has the lead in the organisation of the auctions as it determines the type of renewable energy sources that will be the subject matter of an auction.

### RENEWABLE ENERGY SOURCES AUCTIONS

#### Open procedures

Any interested operator may submit a bid in response to a call for tenders. The most economically advantageous tenders are selected without any negotiation with the Minister of energy. These procedures are used for all renewable energy sources auctions for the offshore wind farms in competitive dialogues schemes, and a dialogue stage is deemed required in light of the complexity of a given project. These two auctions are static, which means that only one bid is submitted for each project.

Regarding the open procedures timetable, **the Ministry is in charge of drafting the Request For Proposal (RFP)**, which is then submitted to the opinion of the final version of the RFP, and finalised by the Ministry, who is responsible for sending it for publication in the Official Journal of the European Union website. After the publication of the RFP, the bidder has six months to ask questions to the Ministry. CRE then receives the bids in paper or electronically.

After the submission deadline, the directorate in charge of the development of markets evaluates the bids. **CRE evaluates the beat by verifying their eligibility and conformity with the RFP requirements ranking the bids following the criteria set at the RFP price, the carbon footprint, taking into consideration for solar plants on the grounds, and the level of innovation for innovative solar plants.** CRE establishes the analysis reports and finally sends all these documents. The Ministry's selection is carried out if its selection differs from its close ranking and is submitted to the website.

### COMPETITIVE DIALOGUES

The competitive dialogues must be distinguished into three phases:

- The preselection of bidders concerning their technical and financial capabilities.
- The competitive dialogue itself between the government and the preselected bidders and drafting of the RFP.
- A selection of the winning bidders.

A competitive public tender is published to enable the interested operators to request participation in the upcoming dialogue. A consultation document is also established by the Ministry and similarly done in open procedures. The Ministry could then give its opinion on this draft of consultation documents before its publication.

**The CRE has to evaluate the technical and financial capabilities** and then is asked to select the qualified bidders. Afterwards, the Ministry finally invites the qualified bidders to participate in the competitive dialogue. At the end of the competitive dialogue, the Ministry drafts the RFP giving its opinion before its notification to the qualified bidders that are finally invited to bid. Then, there is a time for a Q&A between the Ministry and the leaders to place the same rule. Finally, the Ministry selects the winning bidders.

**One of the main drivers of transparency is CRE involvement at each stage of the bid selection process and its expertise on complex financial matters, the procedure's success and evaluating the financial criteria, which ensures the robustness of bids.**



## THE FORMAL PROCESS OF COMPETITIVE DIALOGUE

There are two formal steps in a competitive dialogue process: the **selection of bidders** and the formal final offer. The first aims at defining the list of qualified bidders, being the first special comfort vehicle or economic interest groups. This pre-selection is made on a combination of administrative, financial and technical criteria, and aims at excluding unrealistic, incomplete and insufficient offers.

On the other hand, regarding **the formal final offer**, the financial analysis provided in this case is much more complicated and lengthier than in phase one, so more focus is put on the preselection phase. In this phase, the bidders are evaluated. CRE check that the bidders comply with basic formal administrative requirements. This is a proof of compliance with the trade register.

From a purely financial perspective, bidders are asked to provide basic information on the envisaged projects such as actor's experience, the sponsors, access to capital markets, available equity from sponsors for envisaged structuring, and importantly, the latest audited financial statements concerning technical requirements. This incentivises bidders to invest more time and effort in completing the process up until the very end. These two elements combine to increase the process and probability of success significantly.

Defining the relevant preliminary criteria is crucial. The guidelines must be known to all stakeholders and must be chosen carefully from the very beginning. The CRE must focus on **the competitive dialogue phase**.

## FINANCIAL GUARANTEES WHICH SERVE THE ACCOUNTABILITY OF THE WINNING BIDDERS

Depending on the auctions, there are two types of beneficiaries: the state and offshore wind farm auctions. These will warrant the benefit of the transport system operator. Accordingly, there are also two types of **financial warranties**: demand bank guarantees issued by a credit institution, a finance company or an insurance company. There is also warranty insurance issued by the winning bidder, one of the members of the winning bidder consortium or one of the shareholders of the winning bidder. Furthermore, the timing for the issuance of the guarantees is also provided within each RFP.

There are 30.000 euros multiplied by the power of the installation. It is the same principle for solar plants on the ground, where guarantees have to be achieved within two months from the designated start. There is 50.000 euros multiplied by the power of the installation or guarantees have to be issued at various stages

of the project life according to the project's milestones.

Finally, the penalties are usually set in the RFP. It can apply if the installation's commissioning is late or in the case of known transmission of the certificate of conformity, but penalties can apply if these certificates are not provided.

## 3. LESSONS LEARNED IN RES AUCTIONS: THE GREEK CASE

As a country, **Greece has a new national plan that states that 35% of the energy mix will come from renewable energy sources by 2030**. This means that the country needs to penetrate renewable energy sources in the level of 16 to 64% to make it simpler and drive that market to, once a year, put in a system for private and wind.

RES-E has a specific renewable energy support mechanism approved by the European Union and specific legislation and framework approved by the EU for resolution procedures. This is the standard for the researchers in Greece.

**The key point to success is public consultation and workshops with the market.** RES develops a specific algorithm only for the auctions, and then after the evaluation of the application, online auctions are held.

The participants make their registration to the electronic platform, and then they submit the applications according to the Greek regulator's proposal according to the 13-steps electronic auction system.

Furthermore, the participant pays the selling price to the regulator. If the auction capacity is 100, at least 175 Megawatts participants must engage in this auction. The participant needs to give the regulator a letter of guarantee, about 1% of a typical installation. And each

participant that succeeds in the auction must submit to the aggregate regulator a letter of guarantee for proper performance, 4%.

Finally, the auction structure includes a specific timetable for the connection, and it depends on the projects' capacity.

- **The first pilot project started in 2016** with 194 euros and the results dropped down to the price of 98 euros and then 93 euros.
- **In July of 2018**, the permanent procedure regarding the first reallocation in the Greek energy market occurred. It started with a small price of 85 euros per megawatt-hour and then dropped to 78 euros for the big installations projects.
- **In December 2018**, there was a reduction in prices, meaning that the weighted average price dropped to 66 euros per megawatt-hour for the first time. This auction had a kind of manipulation of the participants. The level was 75%, and there was one participant who didn't bid in the auction. This meant that the final auction capacity was at about 86 euros for the 7c megawatts, but the total projects that make bids were just 85 euros. So the selling price of the highest bidder remained at 91 euros for a huge number of megawatts.
- **In December 2019**, the weighted average price in the category below trend dropped to 59 euros and therefore the wing section to 57.74 euros.
- **In 2020, considering the coronavirus period**, it was extremely difficult to set up and finish this entire auction. However, it was excellent because the resources also needed to rise from within.
- **In April of 2020**, amidst the coronavirus pandemic, the weighted price dropped down to the number of 50 per megawatt-hour. It was the lowest bid in the energy market of 49.11 euros for 200 megawatts.

It's important to see how the market is progressing. For the first time, the lowest price of 45 euros per megawatt-hour weighted average price dropped down to the number 50 euros per megawatt-hour. It's essential to highlight that this is a great benefit for the consumers and the national economy. It was a huge competition between the participants, and, for the wind stations, the weighted average price dropped to the level of 55.

In December, there was a new technology-specific auction, with the photovoltaics plan starting over the level of 50 -60 urban towers and the window at the level of 59.

## CONCLUSIONS

**The procedure is innovative, simplified, fully transparent, valid and reliable, including a specific platform modified and developed at any time according to the right decision.**

Currently, Greece has the experience of 16 auctions. These auctions use the same platform and electronic submission of applications at electronic auctions. Now, RES is moving on, trying to make a new kind of auction for non-natural projects. This will take place in available areas, but RES does not have applications yet. So the first subject to decide is if it is technology-specific or neutral. The second is to decide on having a small payment or a larger one. Finally, it is to be concluded if the auctions will take place for different categories or not.

**RES has available capacity, but do not have projects. So there will be a huge interest in achieving them, with already approximately two thousand applications. RES has tried to design a new kind of auction to handle this huge number of participants.**

The Greek regulatory authority will help out in two ways. The first is in setting the price or the reference value. The second is giving the production license for the big projects to move forward.

RES will have an additional period to develop a licensing level, construction and grid. This is the high-level design for the two projects currently in process. RES took the gold award, a pact between hundreds of companies. Also, the European Court of Auditors presented Greece's actions, which are held by the Greek regulatory authority as a best practice in Europe. RES simplified the procedure in the Greek IRS market moving on with the electronic separation of applications to give the generation license. This is a clear signal that their production cost is coming out lower than the course of the conventional unit. For the second semester in 2018, 96% of the houses had a much higher price over the result's weight. And now this price is not 58 but 49, this makes up to 100% of the houses. So moving from year to year, **the cost of the technology is coming down. If this is compared with the system price, it's been a great benefit for the consumers and the national economy, so RES moves on to educate the new generation.**

## 4. INTRODUCING THE CLEAN ENERGY SOLUTIONS CENTER

Kosmo One is the Clean Energy Solutions Centre, a no-cost advisory and platform for developing countries that want to work and access energy. This is extremely useful to quickly move on and set up an **auction system with great transparency** and is a reliable way to have the electronic submission of applications and evaluation.

### IV. DAY 3

#### 1. RES-E INTEGRATION: THE CHALLENGING ROLE OF THE DSO

The world is moving towards an era of solar homes, electronic mobility and energy communities. Therefore, all the electricity market activities, except conventional generation and transmission, will be carried out at the local level autonomously and in many cases are disruptive to the market. Subsequently, the distribution system is undergoing a massive transition and a massive deployment of variable renewable generation.

#### THE KEY PLAYERS IN THE NEW ERA OF THE ENERGY TRANSITION

- Decarbonisation
- Decentralisation
- Digitization

## CHALLENGES

Solar generation predominates in Cyprus, so it is essential to transform the distribution grid to a localised, dispersed and unpredictable generation machine where generation will come from every site. Cyprus is an island without power system interconnection to the main island, creating numerous and diverse problems including the challenge to integrate a new model of renewable operation in such an environment. This situation leads to challenges such as the pollution produced by GHG emissions when the diesel generators provide the electricity, the high cost of electricity due to the dependency on an external supply of fossil fuels and the seasonal energy consumptions spikes due to tourism.

### THE CHALLENGE OF RES INTEGRATION

The traditional flow of energy started from the power plant to the transmission substation network (Wind and solar generation), and finally, the distribution substation reaches the energy to the customers. But **nowadays this flow has changed as the generation has started to appear in the remote points of the distribution network in a bidirectional way, coming from households, independent producers, and the DSL, which will be the body that will have to manage all of these complicated flows of energy.**

### FACTS AND FIGURES

- In 2020 the national target was 16% of renewable energy consumption. Cyprus has not reached this figure regarding all types of energy, but in general, the country has about 10% concerning electricity.
  - The total RES-e in the **distribution system** in Cyprus is 206 megawatts.
  - **For 2021**, a large increase in solar installations is expected, almost double compared to 2020, from 200 to 500 megawatts.

### THE CURRENT AND THE FUTURE INSTALLATIONS OF RENEWABLES

The National Target set for 2020 was 528MW. Currently, the total is 300MW, of which 157 is wind and 187 is solar. But the expectation is that the target will be fully implemented by 2021. The installations will start in January 2021, and the majority will be solar.

Furthermore, in 2021, it is estimated to increase another 242MW of only solar, reaching 700 megawatts in total, which is more than 500MW of conventional generation or the island's maximum capacity. This situation is a great challenge in terms of installed capacity of renewables and management.



## BAU MODEL STUDY

- No storage
- Isolated system
- No significant penetration of EV
- Nearly zero curtailment, 23% penetration by 2030

## A VISION TOWARDS ENERGY TRANSITION

The primary aim of the distribution system operator is to invest in water technology to face all the challenges and daily problems: safely accommodating the increase of RES-installed capacity and eliminating any technical constraints that can restrict further RES penetration. The next objectives will manage the production and storage facilities to enhance the system flexibility and stability while minimising RES curtailment to establish new network monitoring and planning methodologies that will overcome technical barriers allowing effective integration of RES and operation of the Distribution System.

**Cyprus is frequently updating the technical requirements for connection of renewable plants to manage it efficiently.** They have been issuing the technical guide, forming part of the connection agreement. In order to accommodate the renewables plan for 2030, Cyprus has decided to change its planning procedures and operational procedures simultaneously. Additionally, there are three focus areas to reach the distribution system evolution by 2030:

### FOCUS AREA 1: EFFECTIVE MONITORING & CONTROL OF RES

- Continue to connect RES plants with a careful, detailed inspection.
- The DSO plans to enforce even more complex technical requirements on RES plants.
- Manage energy flows and release latent capacity for RES.
- Formulate a cost-effective strategy for optimised monitoring, including state estimation techniques.
- Establish a methodology for identification of the most strategic monitoring locations.

### FOCUS AREA 2: PLANNING

- Facilitate less carbon-intensive, more affordably and with a faster turnaround of RES connections:
  - Develop a methodology to calculate the network's ability to accommodate additional RES and storage and illustrate the maps' networkability capacity (for indication only).
- Carry out an in-depth assessment of:
  - Non-Wires Solutions feasibility vs. traditional reinforcement.
  - NWS implementation management and relevant policy framework.

## FOCUS AREA 3: OPERATION

- Carry out a Cyprus-specific detailed analysis of:
  - The techno-economic benefits and risks of the different Distribution System-specific Storage modes (Reserve, Peak-shaving, Etc.), i.e. Volt/VAr and Active Power ancillary services.
- The optimal storage installed capacity and capacity factor to maximise the RES penetration while minimising curtailment requirements.
- Establish a Curtailment Management Policy (executing both TSO and DSO requests).

**One of Cyprus's projects is a new scale system with the classical functions of SCADA but with Advanced Applications such as an Outage Management System and Custom Applications like DER Curtailment and Load Shedding/Restoration.** Part of this project is through pilot wires installed by the distributor system operator in pipes below the ground between substations, and part of its communication is with fibre optic. Through the years, Cyprus has been running a pilot for connecting distributor substations to the SCADA system to link every distribution substation through the fibre optic network that is reaching up to the primary substation.

Another massive project is the **Advanced Metering Infrastructure (AMI)**, which will provide near real-time system situation awareness with crucial parameters in a distributed level. It consists of replacing 80% of Cyprus's energy meters within smart meters over the next seven years (approx.400.000), installing all relevant telecom nodes, an MDMS central administration system and all relevant integration/interfaces within the existing IT landscape.

Cyprus is also actively participating in the Research Innovation Projects, trying to answer some questions about the future through these major projects:

- How to deal with integrating massive RES?
- How to deal with integrating massive EVs?
- How much storage? Where?
- Explore new markets, new players, and embrace neutral facilitation.
- Develop new, sustainable business plans keeping in mind that paybacks of innovation are mid-to-long-term and new paradigm shifts CAPEX to OPEX.

## 2. DEFINING LIABILITIES AND COMMITMENTS OF EACH PARTY IN PPA

Turkey is a large country and has the sixth-largest electricity market in Europe. In 2001, the Turkish market was liberated following the advances in the European energy markets. This led to the unbundling of the state-owned companies in the electricity sector and privatisation of a vital part of the electricity-generating company. Now that the transmission operator is a state-owned monopoly, or a strong in-demand generation company, it continues its activities, but their participation has decreased. In terms of installed capacity, the private sector's participation was around 20%, and now it has exceeded 80%. This percentage shows the reluctance of the private sector. Also of note, the electricity market fell in 2001, after several modifications in 2013.

### THE INCREASING SHARE OF RENEWABLES

The Ministry incentivises domestic coal and lignite to decrease the import of renewables and the domestic sources. Turkey has generated about 40% of the electricity from renewables, mostly from hydro, taking into

account the increasing share of renewables last year, with the high hydro generation's assistance. The share of wind and solar has been increasing, as well. The potential of the wind's current capacity is about 8 gigawatts out of 91, with a 92 total installed capacity and solar is about 6 gigawatts.

**Some of the European countries in early 2000 provided very high preventatives, for example, 40 cents euro per kilowatt-hour and implemented incentives and feed-in tariffs.**

In 2005, Turkey started supporting the renewable system with the enactment of the renewables. In 2011, they revised it and discerned the different renewable energy sources including wind, hydro, biomass, and geothermal. Nowadays, they want to get the advantage and hopefully see the increasing trend. The decreasing manufacturing cost, especially on solar sites, will improve the acceleration in the short term. The potential in Turkey is about 50 gigawatts and updat-

ing the wind energy atlas as solar and the high potential in regards to geothermal.

**Turkey became the fourth country after the US, Philippines and Indonesia to exceed the one gigawatt capacity in geothermal. They expect to exceed 2 gigawatts of geothermal electricity, with the support schemes.** In 2007, they revised their policy and set out to announce the national energy and mining policy, having three main pillars:

- The security of supply. All those investments, liberalisation and privatisation studies realised just one main goal: securing the supply.
- The localisation pillar to decrease our import dependency on the utilisation of domestic sources.
- The predictable energy market conditions. In 2013, Turkey established energy stock markets in Istanbul.

To attract more foreign investors to the markets, the wind capacity is currently at about 80 gigawatts, and the solar power is at about 6 gigawatts. Each year the target is set to the commission. The idea is to **continue increasing the renewables' share** by installing them with the new support schemes.

Regarding **the energy support schemes**, there are several laws: the electricity market law, the renewables law and several bylaws and legislation. The current legislation was just issued and is revised by the regulatory authority periodically.

In regards to **the main support scheme**, in 2001 it was announced that the feed-in tariff system is valid for ten years following the commissioning. But these figures are accurate for the power plants, which are being commissioned by the end of the next year 2021. The developing technologies will decrease most of those figures. For example, when building a wind power plant, 7.3 US cents per kilowatt-hour for ten years is obtained to sell to the system. If a company manufactured in Turkey was to purchase the blades, +1 US-cents would be in the fee system. If the power of that power plant was manufactured in Turkey, 4.8 cents plus bonus would be earned, which is valid for five years, not ten years.

Regarding the **localisation policy**, this is voluntary, not compulsory. If an investor wants to purchase it from any other European country or a Chinese company, they cannot buy wherever they want as a bonus for a solar power plant. If the TV selling off the solar power plant is being manufactured in Turkey, the investor will get + 3.5 cents bonus for five years. And in that regard, especially on the wind and solar side, several entrepreneurs started establishing manufacturing facilities in Turkey and selling both to the local market while exporting their products.



In regards to the different Models to invest in the renewable sector:

- The unlicensed market is valid for less than five megawatts, and the purchase price is dependent on the subscription category. The feed-in tariff figures are just being applied for ten years.
- The licenced market, the location-based capacity; bidding price; the duration of electricity purchase is ten years after commissioning till 31/12/2020; and the local content is five years after operation day.
- The Ministry determines re-zone projects, the Renewable Energy Supply Zones, electricity purchase; bidding price; and mandatory local content.

### RENEWABLE ENERGY SUPPORT MECHANISM

For significant scale investments, the renewable energy zone model allows electricity auctions to decrease the cost to the system and increase the localisation part of the instalments. The local content issue is mandatory in big scale YEKA or renewable energies. This model's main objective is to establish and take advantage of economies of scale and provide big scale areas to investors. Feed-in tariffs are paid for energy injected to the grid; total cost is charged to suppliers; EMRA regulates market operations.

### RENEWABLE ENERGY ZONE (YEKA) MODEL

- Using renewable energy sources potential in an effective and efficient way
- Establishing domestic manufacturing facilities with allocation in return for domestic production and ensuring employment and technology transfer.
- Ensuring that investments are made faster.
- Enabling large-scale investments in public and treasury real estate and private property.
- Purchasing electricity produced in RES more economically.

The Ministry realises the announcements and allocates the specific land to the investors in coordination with the regulatory authority. Each country should create its model by taking the successful, the auctions, and others' negative sides as an example.

The descending auction, which is starting with sealed bids in these models, the local manufacturing, R&D and the use of locally manufactured equipment is a must for certain limits, about 50 and 70% for 15 years of power purchase, which is different from the feed-in tariff system where ten years of purchase are provided. The Ministry will monitor these activities as the obligations go around. The percentage of the local manufacturing issues is periodically audited and monitored by the ministry experts, and the minister realises the technical studies regarding the photovoltaic sector.

## 3. CONCLUSIONS REMARKS

**The objective of the training is to introduce the best practices related to transparency, accountability rules and auction procedures, showing methods from different countries with good results in achieving the reduction in prices.** Furthermore, the event has presented how the Greek regulator's platform data systems works, the different roles and involvement of the regulator in the auction procedure, and all of the DSO in RES-E integration. The training also offered some **details concerning the PPA provisions**, and basic questions of the LCEC have been clarified regarding the development of an auction.

It is also clear to all of the participants that **there is no single perfect auction design**, and that it is imperative to take into account the policy goals and the structure of each country to design an auction. Additionally, **the regulator's role is crucial in ensuring transparency and accountability** in the procedures. It is essential to set the scene for the regulator's new active role in the whole process. In this stage, it is important to continue the discussion in the future and to **share experiences to choose the best model** when designing the auction mechanisms.

The MEDREG Secretariat is proud of the work that was done last year on the report on auction mechanisms, as it's a useful tool for members to implement auction mechanisms. Looking forward to next year, there are several challenges in terms of a work plan, this includes the support of LCEC, defining and building up a report trying to highlight the new available military auctions for the integration of race.

The LCEC team have taken many ideas and approaches to processes that could be used to develop renewable energy in Lebanon. The MEDREG Secretariat team gathered speakers from around the Mediterranean, including Portugal, France, Italy, Greece, Turkey and Cyprus. There is not only one solution to renewable energy auctions and renewable energy bids. However, different schemes differ according to the laws and regulations that exist in other countries. There is high

urgency because **it is necessary to take some success stories and processes to implement them into our local Lebanese state.**

**However, the common denominator from all the presentations is that transparency, competitiveness and most importantly, a continuous and productive interaction between the private sector entities and the public sector entities are key success factors to all auctions.**

The LCEC team will surely use these lessons learned and implement them to develop renewable energy auctions and bids. The LCEC will share these lessons with the minister of energy and water to transfer everything that has been learned and then have this implemented in upcoming proceedings. Another main point is **the important growth in the role of all of the electricity regulatory authority** and the other players involved in electricity markets, which are getting more liberalised as new rules are being created.

**The cooperation between LCEC and MEDREG Secretariat** and the different regulators around the Mediterranean want the future to be green and sustainable. This training is fruitful cooperation, and we are confident that this future is achievable.

## VI. SPEAKERS

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MEDREG is the Association of Mediterranean Energy Regulators, which gathers 27 energy regulators from across 22 countries, spanning the European Union, the Balkans and North Africa.

We aim to set the conditions for the establishment of a Mediterranean Energy Community by promoting a transparent, stable and compatible regulatory framework in the Mediterranean Region. We foster electricity and gas market integration, renewable energy development, infrastructure investments as well as consumer protection.

Based on a bottom-up approach, MEDREG acts as a platform that enables Mediterranean regulators to cooperate and exchange knowledge and experience.

The organisation is co-funded by the European Union.

This handbook is based on a webinar organised by MEDREG to present the best practices related to transparency and accountability rules and auction procedures, showing methods from different countries with good results in achieving price reduction. The purpose of the exchange of experiences is to learn from the mistakes and successes of others, to implement the points learned in future projects, and to improve current ones.

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